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Ghana Nutrition Assessment, Counselling, and Support (NACS): Training Materials for Facility-Based Service Providers

Facilitator's Guide

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FANTA III
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FOREWORD

HIV prevalence among antenatal care clients in Ghana continues to decline, a trend that started in 2000. The 2012 adult national HIV prevalence of 1.37% establishes Ghana's epidemic as generalised, despite a relatively high level of infection among men who have sex with men and female sex workers. In 2012, 235,982 people (27,734 children) were estimated to be living with HIV in Ghana, with 127,027 People Living with HIV (PLHIV) in need of Antiretroviral Therapy (ART) (according to the Ghana Health Service 2012 National HIV Prevalence and AIDS Estimates Report).

Within the context of the National Strategic Plan 2011–2015, the health sector has the primary mandate of providing health care among PLHIV, in collaboration with other development and implementing partners.

Comprehensive management of PLHIV and/or Tuberculosis (TB) clients has been shown to reduce mortality in addition to improving the quality of life for those receiving treatment. The continuum of care includes medication for prevention and treatment of opportunistic infections including TB; the use of ART; and appropriate nutrition care.

HIV combined with pre-existing under-nutrition makes it difficult for PLHIV and TB clients to remain healthy and economically productive. Symptoms associated with HIV can reduce food consumption, interfere with nutrient digestion and absorption, and change metabolism. These symptoms lead to weight loss, loss of muscle tissue and body fat, vitamin deficiencies, reduced immune function and competence, and increased susceptibility to secondary infections.

Nutrition care and support for PLHIV and TB clients can improve nutritional status, ensure adequate food intake, and enhance quality of life. Nutrition care and support includes assessment, counselling, interventions, and follow-up. These interventions enable care providers to counsel clients on how to improve diet, manage symptoms, and avoid infections. They are also used to target malnourished clients for therapeutic and supplementary feeding.

Recognising the critical role of food and nutrition in effective responses to HIV, in 2006, the Ghana Ministry of Health launched the national *Guidelines on Nutritional Care and Support for People Living with HIV and AIDS* as the first step in integrating nutrition into HIV services. These guidelines recommended the Nutrition Assessment, Counselling, and Support (NACS) approach to address the specific nutrition issues faced by PLHIV. Unlike food assistance programmes that target households with food rations to increase the food security of HIV-affected populations, the NACS approach provides specialised therapeutic and supplementary food products specifically to improve the health, nutrition, drug adherence, and survival outcomes of clinically malnourished PLHIV. Through NACS, food and nutrition services are provided as part of care and treatment, and take-home rations of specialised food products are prescribed for a limited duration based on clear entry and exit criteria.

This training manual will be used (or could be adapted) to build the capacity of physicians, nurses, dieticians, medical assistants, counsellors, volunteers, and other cadres that work with PLHIV and/or TB clients, particularly in ART and DOTS clinics, in NACS.

Ms Hanny-Sherry Ayittey
Honourable Minister of Health
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CONTENTS

ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Care
ART	Antiretroviral Therapy
ARV	Antiretroviral Drug
BMI	Body Mass Index
cm	Centimetre(s)
CMAM	Community-Based Management of Acute Malnutrition
CMV	Combined Mineral and Vitamin mix
CNAs	Critical Nutrition Actions
DOTS	Directly Observed Treatment, Short Course
FANTA	Food and Nutrition Technical Assistance III Project
FBF	Fortified-Blended Food
g	Gram(s)
GHS	Ghana Health Service
HIV	Human Immunodeficiency Virus
IU	International Unit(s)
kcal	Kilocalorie(s)
kg	Kilogram(s)
LMIS	Logistics Management Information System
M&E	Monitoring and Evaluation
MAM	Moderate Acute Malnutrition
MCR	Monthly Consumption Report
ml	Millilitre(s)
MOH	Ministry of Health
MSD	Medical Stores Department
MUAC	Mid-Upper Arm Circumference
NACP	National AIDS/STI Control Programme
NACS	Nutrition Assessment, Counselling, and Support
NGO	Nongovernmental Organisation
NTP	National Tuberculosis Control Programme
OPD	Outpatient Department
OVC	Orphans and Vulnerable Children
PLHIV	People Living with HIV
PMTCT	Prevention of Mother-to-Child Transmission of HIV
RDA	Recommended Dietary Allowance
ReSoMal	Rehydration Solution for Malnutrition
RMS	Regional Medical Store
RRIRV	Report, Requisition, Issue, and Receipt Voucher

RUTF	Ready-to-Use Therapeutic Food
SAM	Severe Acute Malnutrition
TB	Tuberculosis
USAID	U.S. Agency for International Development
WHO	World Health Organisation

GUIDE FOR FACILITATORS

A. Purpose

The purpose of this guide is to help facilitators instruct trainers or facility-based health care workers in Nutrition Assessment, Counselling, and Support (NACS). The guide supports implementation of the *Community-Based Management of Acute Malnutrition: National Guidelines* (2010), *Guide on Nutrition Care and Support for People Living with HIV* (2006), and *National Tuberculosis Guidelines* (2012) and complements related training in Prevention of Mother-to-Child Transmission of HIV (PMTCT) and infant and young child nutrition.

B. Training Learning Objectives

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

1. Advocate for and discuss the role of nutrition in care and treatment
2. Assess and classify the nutritional status of People Living with HIV (PLHIV) and/or Tuberculosis (TB) clients
3. Select appropriate care plans based on the nutritional status of clients
4. Provide appropriate nutrition counselling to PLHIV and/or TB clients
5. Prescribe and monitor specialised food products for acutely malnourished clients
6. Manage NACS services at the facility and community levels
7. Monitor and report NACS services

C. Course Format

The course is divided into five independent modules that can be taught separately or be combined into a 5-day package as needed. The five modules are listed below.

Module	Topic	Audience
1	Introductory Session and Overview of Nutrition	Clinicians, nurses, nutritionists, dieticians, pharmacists, Models of Hope
2	Nutrition Assessment, Classification, and Care Plans	Clinicians, nurses, nutritionists, dieticians, Models of Hope
3	Nutrition Education, Counselling, and Referral	Clinicians, nurses, nutritionists, dieticians, Models of Hope
4	Specialised Food Products to Treat Acute Malnutrition	Clinicians, nurses, nutritionists, dieticians, pharmacists, storekeepers, Models of Hope, data managers
5	NACS Monitoring and Reporting	Clinicians, nurses, pharmacists, Models of Hope, data managers

There are two reasons for the modular format. First, for facility-based health care workers who are unable to leave their workplaces for a full 5-day course, the modules can be taught separately over a longer period. Second, different types of service providers need different NACS knowledge and skills. For example, it is important for clinicians and nurses to know how to assess nutritional status (**Module 2**), while it is important for pharmacists to know how to order and manage specialised food products (**Modules 4 and 5**). Staff at health care facilities that do not provide specialised food products need not be trained in how to order, prescribe, and manage these commodities (**Module 4**).

D. Duration

The entire course takes 39 hours, excluding meal breaks and opening and closing ceremonies.

Each module takes approximately 1 day. The training can be conducted over 5 days or spread out over a longer period.

It is also possible to use individual modules of the training as 'stand-alone' components of in-service training or as components of other training packages.

E. Facilitators

The course requires **at least 3 facilitators for a class of at least 25 participants** to support the practical sessions, demonstration, small group discussion, and role-plays. At least one facilitator should be a nutritionist and one should have a medical background. One facilitator should be the course director. The course director may be the implementing partner NACS focal person or a trained trainer. All facilitators should have been trained by national NACS facilitators and have the following:

- Knowledge of nutrition
- Familiarity with the health care system and relevant service delivery protocols
- Experience in maternal and child nutrition service delivery
- Experience using adult learning methods and participatory training techniques
- Skills in counselling and communication
- Knowledge of HIV and TB (forms of transmission, disease progression, and interventions for prevention, treatment, care, and support services.)

F. Participants

This NACS training course for facility-based health care providers is aimed at clinicians, nurses, nutritionists, and pharmacists; Models of Hope; data managers working in reproductive and child health services; Outpatient Departments (OPDs); paediatric wards and clinics; Antiretroviral Therapy (ART) centres; and Directly Observed Treatment, Short Course (DOTS) corners in Ghana.

The course should have a minimum of 25 participants, ideally with at least 5 participants from each health facility represented.

G. Venue

If possible, conduct the training in the district or region where the participants work, at a location accessible to participants from multiple health care facilities.

The venue should be comfortable and have enough space to post the flipcharts and to project slides onto a white screen or wall and for participants to work in small groups of no more than six per group.

H. Training Materials

1. The **Facilitator's Guide** contains information course directors need to plan the course and facilitators need to lead participants through the training, including:
    - Detailed instructions on how to facilitate each module
    - Sample timetable for a 5-day course
    - Pre-/post-test
    - Daily evaluation form for participants
    - Instructions for preparing for site practice visits
    - NACS competencies that health care workers are expected to demonstrate after the course
    - Copies of the PowerPoint slides used during the training

2. The **Participant Manual** contains material for participants to use during the course and to take back to the workplace afterwards. It also contains worksheets and case studies for participants to use during practical sessions.

3. The **Job Aids** are practical tools for participants to use during the training and take back to their workplaces to help them with nutrition assessment, counselling, and management of malnourished clients.

4. **PowerPoint** slides made available on a CD/USB device reinforce the training content. Facilitators without access to an LCD projector can use overhead transparencies or copy the wording of the slides onto flipchart pages.

I. Supplies and Equipment

☑ Checklist for a 5-Day Course

- ☐ One copy of the **Facilitator's Guide** for each facilitator
- ☐ Two copies of **Annex 1. Pre-/Post-Test** in the **Facilitator's Guide** for each participant
- ☐ One copy of **Annex 2. Pre-/Post-Test Answer Key** from the **Facilitator's Guide**
- ☐ One copy of **Annex 3. Module Evaluation Forms** in the **Facilitator's Guide** for each participant
- ☐ One copy of the **Participant Manual** for each facilitator and participant
- ☐ One set of **Job Aids** (laminated cards and wall charts)
- ☐ One copy of the *Community-Based Management of Acute Malnutrition: National Guidelines* (2010) for each facilitator and participant
- ☐ One copy of the *National Guidelines on Nutrition Care and Support for People Living with HIV & AIDS* (2006) for each facilitator
- ☐ 45 copies* of the **NACS Client Management Form in Module 5**
- ☐ 45 copies* of the **Specialised Food Products Monthly Consumption Report (MCR) in Module 4**
- ☐ 36 copies of the **NACS Monthly Report in Module 5**
- ☐ 30 copies of the **Specialised Food Products Monthly Consumption Report in Module 4**
- ☐ Copies of other relevant national guidelines, health care worker tools and job aids, health education guides, maternal and child health cards, and social and behaviour change communication materials
- ☐ NACS training PowerPoint on a CD/USB device
- ☐ Copies of the timetable (**Section O. Module Contents and Duration**) for each facilitator and participant
- ☐ Flipcharts and stands
- ☐ Marker pens
- ☐ Masking tape
- ☐ LCD projector and computer or overhead projector and transparencies (if you do not have this equipment, copy the PowerPoint slides onto a flipchart)
- ☐ Long surge protector extension cords
- ☐ Name tags for participants
- ☐ Writing or notepads for facilitators and participants
- ☐ Pens and pencils for all participants
- ☐ Paper for printing or photocopying

- ☐ At least 10 packets each of Ready-to-Use Therapeutic Food (RUTF) and Fortified-Blended Food (FBF) used in Ghana
- ☐ Enough water and cooking utensils (e.g., at least 2 small cooking pans, a cooker, stirring spoons, 28 small spoons and small cups) to prepare and taste the FBF
- ☐ At least 2 functioning scales (1 for adults and 1 for children)
- ☐ At least 2 height measuring devices for adults
- ☐ The following Mid-Upper Arm Circumference (MUAC) tapes for each participant and facilitator
  - Colour-coded MUAC tape for children 6–59 months
  - MUAC tape for children 6–17 years and adults
- ☐ A ball
- ☐ Any other materials listed in the introduction to the module
- ☐ Course certificates for participants (if available)

** depending on the final number of participants*

☑ Checklist for a 1-Day Module

- ☐ One copy of the **Facilitator's Guide** for each facilitator
- ☐ Two copies of **Annex 1. Pre-/Post-Test** in the **Facilitator's Guide** for each participant
- ☐ One copy of **Annex 3. Module Evaluation Forms** in the **Facilitator's Guide** for the module taught for each participant
- ☐ One copy of the **Participant Manual** for each facilitator and participant
- ☐ One set of **Job Aids** (laminated cards and wall charts) for each clinic
- ☐ One copy of the *Community-Based Management of Acute Malnutrition: National Guidelines* (2010) for each facilitator
- ☐ One copy of the *National Guidelines on Nutrition Care and Support for People Living with HIV & AIDS* (2006) for each facilitator
- ☐ One copy of the *National TB Guidelines* (2012) for each facilitator.
- ☐ Copies of other relevant national guidelines, health care worker tools and job aids, health education guides, child health record book and social and behaviour change communication materials
- ☐ NACS training PowerPoint slides on a CD/USB device for facilitators
- ☐ Copies of the timetable (**Section O. Module Contents and Duration**) for each facilitator and participant
- ☐ Flipcharts and stands
- ☐ Marker pens
- ☐ Masking tape

- ☐ LCD projector and computer or overhead projector and transparencies (if you do not have this equipment, copy the PowerPoint slides onto a flipchart)
- ☐ Long surge protector extension cords
- ☐ Name tags for participants
- ☐ Writing or notepads for facilitators and participants
- ☐ Pens and pencils for all participants
- ☐ Paper for printing or photocopying
- ☐ Any other materials listed in the introduction to the module
- ☐ Course certificates for participants (if available)

J. Training Principles

1. **Performance-based** training teaches participants tasks they are expected to do on the job.
2. **Active participation** increases learning and keeps participants interested and alert.
3. **Practicing** a task is more effective than hearing about it.
4. **Immediate feedback** increases learning.

Below are suggestions for applying these principles in this course.

- Create a supportive learning environment by making participants feel confident that their contributions will be received respectfully.
- Build trust by showing commitment to the course and willingness to share your experience.
- Explain how you know what you know.
- Build teamwork by encouraging active participation.
- Stress the immediate usefulness of the material for participants' daily work.
- Do not read directly from slides or flipcharts. Instead, make the points in your own words and add examples and practical problems.
- Ask participants to share culturally appropriate stories to illustrate important points.
- Pace the training to make sure participants can absorb the information. Learners can absorb only five or six new pieces of information at a time.
- Give participants opportunities to practice what they learn and address questions that arise during the practice.

K. Methods

The modules use different training methods, listed below:

- Presentation in lecture form with slides
- Group work
- Role-play to practice counselling skills
- Demonstration
- Practical written exercises
- Site practice visit

Below are the symbols used as cues in the modules.

Component	Cue
Duration (may be modified depending on the participants' skills)	
Brainstorm	
Presentation	
Discussion	
Group work	
Practice	
Review	

L. Before the Training

1. Review the objectives of the course and prepare needed materials.

2. Discuss the training methods and assignments with the other facilitators.

3. Make sure the LCD projector and computer are functioning correctly, that you can operate them, and that the projected slides are visible on the screen or wall. If you do not have a projector, transfer the information from the slides onto flipcharts or posters.

4. Read each session through to familiarise yourself with the information.

5. Print or photocopy needed hand-outs before each session.

6. Make preparations for the site practice visit, following **Annex 7. Site Practice Visit Planning Guide**.

M. During the Training

Your role as a facilitator is to present each session, introduce key concepts, lead group discussion and exercises, answer questions, explain ideas, clarify information, give constructive feedback, and encourage participants to discuss how they can apply the information in their work.

1. **Show respect** for the other facilitators and work as a team.

2. Try to **learn participants' names** and use them whenever possible.

3. **Encourage group interaction** and participation early. In the first 2 days, interact at least once with each participant and encourage participants to interact with each other.

4. At the beginning of each day, take up to 10 minutes to **review the key points covered the previous day**. This can be done by facilitators or participants, preferably the participants. Review helps participants remember information and see connections between what they are learning and their work. You can also use review to discuss questions or concerns about the training so far, highlight useful participant insights or new knowledge, and identify topics that need reinforcement or are irrelevant to the participants' work. After the review **give a brief overview of the module** for that day.

5. **Distribute copies of Annex 3. Module Evaluation Forms** to all participants and receive completed forms at the end of the day's work.

6. **Adjust the time** of each module as needed.

7. **Consult participants** throughout each module **to assess their comprehension and attentiveness**. **Praise or thank them** when they do an exercise well, participate in discussion, ask questions, or help each other.

8. **Use energisers** to recharge the group after lunch or a long session.

9. **Divide participants into small groups** from the same health care facilities or regions, if possible, so they can help each other apply the skills learned in the training when they are back in their workplaces. During group work, each facilitator should **facilitate no more than two groups at a time**.

10. **Be available after each session to answer questions** and discuss concerns. Instead of talking with the other facilitators during breaks, talk with the participants.

11. **Review the day's training with the other facilitators and plan the following day** for 30–45 minutes at the end of the day. Discuss the day's training, go through the daily evaluation forms, and use the results to improve the next days' sessions. Praise what the other facilitators did well and discuss any problems with the training content, methods, or timing.

N. After the Training

1. With the regional NACS focal persons, **review the results of the participant evaluations** to discuss how to improve the course in the future.

2. With the regional focal persons, **plan follow-up of the trained participants on the job**. Review the NACS competencies and make sure the regional NACS focal person follow-up 1–3 months after the training to assess and reinforce NACS skills and build confidence.

O. Module Contents and Duration

Session	Topic	Duration
INTRODUCTORY SESSION		**2 hours**
0.1	Introduction and Training Overview	20 minutes
0.2	Pre-Test	15 minutes
0.3	Expectations and Objectives	30 minutes
0.4	Participant Roles	30 minutes
0.5	Evaluation	10 minutes
	Discussion	15 minutes
MODULE 1. OVERVIEW OF NUTRITION		**6 hours**
	Objectives	5 minutes
1.1	Definition of Basic Nutrition Terms	40 minutes
	– Importance of Nutrition for Good Health	45 minutes
1.2	Nutritional Requirements	40 minutes
	– Effects of Infection on Nutrient Requirements	40 minutes
1.3	Causes of Malnutrition	40 minutes
1.4	Clinical Symptoms and Signs of Malnutrition	40 minutes

Session	Topic	Duration
1.5	Consequences of Malnutrition in PLHIV and TB Clients	40 minutes
1.6	Preventing and Managing Malnutrition	1 hour
	Discussion	10 minutes
MODULE 2. NUTRITION ASSESSMENT, CLASSIFICATION, AND CARE PLANS		**8.5 hours**
	Objectives	5 minutes
	Review	15 minutes
2.1	Nutrition Assessment	40 minutes
2.2	Clinical Assessment	45 minutes
2.3	Physical Assessment (Anthropometric Measurements)	2 hours
2.4	Biochemical Assessment	25 minutes
2.5	Dietary Assessment	1 hour
2.6	Nutrition Care Plans for PLHIV and TB Clients	
	– Nutrition Care Plan for Severe Acute Malnutrition	2 hours
	– Nutrition Care Plan for Moderate Acute Malnutrition	35 minutes
	– Nutrition Care Plan for Normal Nutritional Status	35 minutes
	Discussion	10 minutes
MODULE 3. NUTRITION EDUCATION, COUNSELLING, AND REFFERRAL		**6 hours**
	Objectives	5 minutes
	Review	15–60 minutes
3.1	Conducting a Nutrition Counselling Session	45 minutes
3.2	Nutrition Counselling Using the GATHER Approach	2 hours
3.3	Nutrition Counselling Messages	1 hour
3.4	Linking NACS with Community Services	1 hour
	Discussion	10 minutes
MODULE 4. SPECIALISED FOOD PRODUCTS TO TREAT ACUTE MALNUTRITION		**9 hours**
	Objectives	5 minutes
	Review	15–60 minutes
4.1	NACS Services	30 minutes
4.2	NACS Client Flow and Staff Roles	1 hour

Session	Topic	Duration
4.3	Purpose and Types of Specialised Food Products to Manage Acute Malnutrition	2 hours
4.4	Admission and Discharge Criteria for NACS in Ghana	45 minutes
4.5	Managing Clients on Specialised Food Products	2.5 hours
4.6	NACS Commodity Management	1 hour
	Discussion	10 minutes
MODULE 5. NACS MONITORING AND REPORTING		**7 hours**
	Objectives	5 minutes
	Review	20 minutes
5.1	Purpose of NACS Data Collection, Indicators, and Integrating the Indicators into the HIV and/or TB Monitoring and Evaluation System	30 minutes
5.2	NACS Data Collection Tools and Forms	2 hours
5.3	Site Practice Visit*	3 hours
5.4	Declaration of Commitment	25 minutes
	Discussion	10 minutes
	Post-Test	15 minutes
	Final Course Evaluation	15 minutes
TOTAL		**38.5 hours**

** Depending on the ART and/or DOTS clinic day at the facility, or when the visit can be arranged. Participants should have completed at least modules 1 and 2 before going on the site visit.*

Introductory Session

INTRODUCTORY SESSION FOR THE 5-DAY COURSE

2 hours

Purpose	Introduce participants and facilitators to each other, introduce the course objectives and expected outcomes, and allow participants to discuss their expectations of the course and take a pre-test.

Learning objectives	By the end of the session, participants will have: 1. Discussed their expectations and related them to the objectives of the course 2. Taken a pre-test to assess their knowledge of nutrition

Materials needed	• Flipchart or PowerPoint with the course objectives • Ball • Name tags for all participants • Writing or notepads for all participants • Pens and pencils for all participants • Course timetable • PowerPoint • **Hand-outs** – One copy of the **Test in Annex 1** for each participant – One copy of the **Introductory Evaluation Form** in **Annex 3** • **Participant Manual** for each facilitator and participant

Advance preparation	• Review course timetable, **Annex 1. Pre-/Post-Test**, and **Annex 2. Pre-/Post-Test Answer Key**. • Review **Slides 1–3.** • Tape a sheet of flipchart paper on a wall as a 'parking lot' for any issues that arise during the module to address later.

0.1 Introduction and Training Overview (20 minutes)

- Distribute name tags and pens to all participants and ask them to fill in and wear them.
- Show **Slides 1 and 2**.
- Explain to participants that the acronym 'NACS' means 'Nutrition Assessment, Counselling, and Support'.
- Lead participants in an icebreaker (see box below).

ICEBREAKER

Do either the icebreaker exercise suggested below or invent another one adapted to the local context (see examples of other icebreakers in **Annex 4**). This exercise introduces the participants to each other, encourages them to learn about each other, and establishes a relaxed and collaborative atmosphere.

Give each participant an A4 piece of paper. Ask each participant to write their name, position, place of work, and favourite food on the paper and then fold the paper to make a paper airplane. When all participants have made their airplanes, ask them to 'fly' them across the room to other participants. Ask each participant to read the information on the paper airplane they picked up and then shake hands with the person who sent the airplane.

- Go over the housekeeping points in the box below.

HOUSEKEEPING

- Refer participants to the course schedule hand-out. Explain what time to come each day and when the sessions will end.
- Explain what **materials** to bring to class every day, including a pen, notebook, and the **Participant Manual**.
- Ask participants to decide on **rules for the training**, for example, being punctual, keeping cell phones on vibrate or silent and stepping outside to make urgent calls, not working on their computers during training, contributing to discussions, and respecting each other's opinions.
- Ask participants to decide on **penalties for breaking the rules**, for example, singing a song, dancing, or naming three things learned the day before.
- Discuss arrangements for **accommodation** (if the training is residential), meals, and reimbursement of travel and other expenses.
- **Encourage all participants to contribute** their experience to discussions and explain that no answers will be criticised.

0.2 Pre-Test (15 minutes)

- Give each participant a copy of the test from **Annex 1**. Ask participants to write their positions, titles, or professions and the date at the top of the sheet. Give 10 minutes to complete the pre-test.
- After 10 minutes, collect the pre-tests. Facilitators should correct them immediately using the answer key in **Annex 2**, calculate the scores, and tabulate the results to identify topics that need emphasis during the training.

0.3 Expectations and Objectives (30 minutes)

- Explain the training methods you will use: presentations, group work, role-plays, written exercises, and a site practice visit. Include time for questions. Give each participant copies of the **Participant Manual**, and **Job Aids**. Explain that they will use these for information and exercises during the course. Point out that the PowerPoint slides that will be shown during the course are copied at the beginning of each module in the Participant Manual.

- Ask each participant to share at least one expectation of the course aloud or written on an index card. Write the expectations on a flipchart.

- Present the course objectives on **Slide 3.** Compare the course objectives to the expectations of the participants, or review participant expectations later.

- Keep the course objectives and participants' expectations in view during the rest of the training.

0.4 Participant Roles (30 minutes)

- Ask participants to assign the following roles for small group discussions either daily or for the entire course:

    1. **Chairperson** to lead plenary discussions, ask other participants if there are any questions or comments on each topic, and inform the facilitators of any issues that arise during the training
    2. **Timekeeper**
    3. **Rapporteur** to document and present discussion points made
    4. **Any other leadership roles** participants think are important, e.g., for entertainment, food, etc.

- The groups should rotate the roles if the training is longer than 1 day. When an activity is over, ask the groups to share observations and respond to group feedback.

0.5 Evaluation (10 minutes)

- Explain that participants will evaluate the course at the end of each module to improve subsequent trainings.

Discussion (15 minutes)

- Allow time for questions and discuss any issues that need clarification.

- Distribute copies of the **Introductory Evaluation Form** found in **Annex 3**. Ask participants to fill out the form and give it to you before they leave.

1 Overview of Nutrition

MODULE 1. OVERVIEW OF NUTRITION

6 hours

Nutrition is the process of taking in and using food to meet the body's needs. An adequate, well-balanced diet is a cornerstone of good health. **Poor nutrition** can lower immunity, increase susceptibility to disease, impair physical and mental development, and reduce productivity. **Good nutrition** is important for everyone, but especially for people with special needs such as pregnant and lactating women, children under 2, and people with diseases such as Tuberculosis (TB) and HIV. Nutrition care and support can ensure adequate food intake, improve nutritional status, and enhance quality of life.

Purpose	Give an overview of the definition, causes, consequences, and levels of malnutrition; nutritional requirements; Critical Nutrition Actions (CNAs) to prevent and manage malnutrition; and components and standards of nutrition care.

Learning objectives	By the end of this module, participants will be able to: 1. Define basic nutrition terms 2. Explain the importance of nutrition for good health 3. Explain the energy and protein requirements of people in different age groups 4. Explain the additional nutritional requirements for TB clients and PLHIV 5. Describe the interaction between TB, HIV, and nutrition 6. Describe the causes, symptoms, clinical signs, and consequences of malnutrition 7. Describe the Critical Nutrition Actions (CNAs)

Materials needed

- Flipchart and stand
- Markers and tape
- LCD projector
- PowerPoint
- **Hand-outs**
  - Copy of **Module 1 Evaluation Form in Annex 3** for each participant
- **Participant Manual**
  - Basic nutrition terms
  - Human energy requirements
  - Causes of malnutrition in PLHIV and TB clients
  - Ways to prevent and manage malnutrition
  - CNAs with messages and explanations
  - Figure 1.1 The Vicious Cycle between Nutrition and HIV and/or TB
  - Figure 1.2 Conceptual Framework of Malnutrition

Advance preparation

- Review the **PowerPoint slides for Module 1** (copy the information onto a flipchart if you do not have an LCD projector).
- Review the **Participant Manual for Module 1**
- Review **Figure 1.1** and **Figure 1.2**

Objectives (5 minutes)

- Show **Slide 4**
- Present the module objectives on **Slide 5**

1.1 Definition of Basic Nutrition Terms (40 minutes)

BRAINSTORM: What is food and nutrition?

- Ask participants: 'What is the difference between the terms **"Food"** and **"Nutrition"**?' List responses on a flipchart. Compare them with the information on **Slide 6**.

BRAINSTORM: What is nutrition?

- Ask participants: 'What is the difference between the terms **"Nutrients", "Macronutrients",** and **"Micronutrients"**?' List responses on a flipchart. Compare responses with the information on **Slide 7.**

BRAINSTORM: What is malnutrition?

- Ask participants: 'What do you think is meant by the term **"Malnutrition"**?' List responses on a flipchart. Compare them with the information on **Slide 8**.
- Explain that in this course, the term 'malnutrition' usually means 'undernutrition'.
- Explain that overweight and obesity are also forms of malnutrition and put people at risk of diabetes, hypertension, and other heart problems.
- Ask participants to refer to the **Participant Manual**. Explain that they will use this during the course and can take it back to their workplaces. Ask them to turn to **Session 1.1 Definition of Basic Nutrition Terms in the Participant Manual**. Explain that you will cover this information during this module, but it is also in the Participant Manual if they want to refer to it later. For additional terms used during the training refer participants to **Annex 4. Glossary of Key Terms** in the Participant Manual (**Annex 5 in this Facilitator's Guide**).

BRAINSTORM: What are the different types of undernutrition?

- Ask participants to explain the different types of undernutrition. List responses on a flipchart. Compare them with the information on **Slide 9.**

Importance of Nutrition for Good Health (45 minutes)

BRAINSTORM: Why is nutrition important for good health?

- Ask participants why they think 'nutrition is important for health'. List responses on a flipchart and compare them with the information in the box below.

Importance of nutrition for good health

Good nutrition can:

- Help people feel strong physically and mentally and look healthy
- Strengthen the immune system to fight infection
- Help people stay productive and able to do physical activities
- Help prevent wasting
- Improve drug adherence and effectiveness
- Help manage common symptoms of illness and drug side effects

Poor nutrition can:

- Weaken the immune system
- Increase vulnerability to infections
- Reduce the body's ability to recover from infections

BRAINSTORM: What nutrition services can be integrated into routine care offered at these contact points?

- Draw a line down the middle of a flipchart page and copy the left side of the table below.
- Ask participants: 'What nutrition services can be integrated into routine care offered at these contact points?' List responses on the right side of the flipchart and compare them with the information in the table below.

Service (contact points)	Nutrition services
1. Reproductive and child health, Antenatal Care (ANC), and Prevention of Mother-to-Child Transmission of HIV (PMTCT) services	• Nutrition assessment and counselling, including infant feeding counselling • Nutrition education • Prescription of specialised food products for clinically malnourished pregnant and post-partum women, infants, and young children according to standard protocol and criteria
2. Maternity ward	• Nutrition assessment and counselling, including infant feeding counselling • Nutrition education
3. Medical ward	• Nutrition assessment and counselling • Prescription of specialised food products for clinically malnourished patients

4. Paediatric ward	• Nutrition assessment and counselling • Prescription of specialised food products for clinically malnourished children
5. Outpatient Departments (OPDs)	• Nutrition assessment and counselling • Prescription of specialised food products for clinically malnourished clients
6. DOTS corners	• Nutrition assessment and counselling • Nutrition education • Prescription of specialised food products for clinically malnourished clients • Referral to food support and economic strengthening and livelihood support
7. ART clinics	• Nutrition assessment and counselling • Nutrition education • Prescription of specialised food products for clinically malnourished clients • Referral to food support and economic strengthening and livelihood support

BRAINSTORM: For good nutrition, people need to eat the right quality and quantity of food. What is 'the right quality of food'?

- Explain that breast milk is the only food that by itself provides all the nutrients the body needs to function properly and that it only provides complete nutrition through the age of 6 months. Eating a variety of foods is important for good health because it increases the chance of the body getting all the required nutrients.

- Show the three food groups on **Slide 10: 'energy-giving foods', 'body-building foods', and 'protective foods'.**

1.2 Nutritional Requirements (40 minutes)

BRAINSTORM: What is 'the right quantity of food'?

- Show **Slide 12** and briefly explain that energy intake is made up of carbohydrates, proteins, and fats. Daily energy requirements have been estimated for people in different age groups. These requirements increase with age and special needs, such as pregnancy and lactation, and can change according to activity level, body composition, and the presence of infections.

- Refer participants to **Table 1.2 Food Equivalents to Meet Energy Needs** in the Participant Manual. Point out the sample food equivalents for the energy needs of different age groups.

- Show **Slide 13 Estimated Daily Protein Requirements** and explain that daily protein needs have been estimated for people in different age groups. Protein requirements increase with age, special needs such as pregnancy and lactation, and the presence of infections. Requirements for children are different for boys and girls.

Effects of Infection on Nutrient Requirements (40 minutes)

BRAINSTORM: What special needs can increase nutrient requirements?

- Explain that acute infectious illnesses can reduce appetite, decrease the body's absorption of nutrients, and make the body use nutrients faster than usual, for example, to repair the immune system.

- Explain that HIV and TB are common infectious diseases that not only affect nutritional status but also affect nutrition.

PRESENTATION: Nutrition, HIV, and TB

- Explain that people with HIV and/or TB need more energy because these diseases cause weight loss and decreases the body's ability to absorb and use nutrients and fight infection.

- Show **Slides 14 and 15** and explain that energy requirements are greater for children and adults with HIV and/or TB. Point out that energy requirements differ depending on the presence of HIV or TB-related symptoms such appetite loss, diarrhoea, nausea, weight loss, and other opportunistic infections. Refer participants to **Table 1.1 Energy Requirements** and **Table 1.3 Food Equivalents to Meet Extra Energy Needs of PLHIV and/or TB** in the Participant Manual.

- Refer participants again to **Table 1.3 Food Equivalents to Meet Extra Energy Needs of PLHIV and/or TB** in the Participant Manual. Point out the sample food equivalents for the increased energy needs of PLHIV.

- Show **Slide 16** and explain that the protein, micronutrient, and fat requirements of PLHIV are the same as for people without HIV. PLHIV need to increase their total energy intake while maintaining the same balanced proportions between carbohydrate, protein, and fat as recommended for people without HIV.

PRESENTATION: Nutrition and TB

- Explain that it is difficult to separate the influence of nutrition on TB from economic, environmental, and genetic factors. It is not known whether malnutrition predisposes people to TB or is a consequence of TB, but the association between malnutrition and disease is well recognised.

- Show **Slide 17** on nutrition and TB. Explain that TB reduces appetite and increases the body's use of energy, which increases the risk of wasting. Underweight people have a higher risk of developing TB. Poor nutritional status may make essential nutrients unavailable to the body and make TB infection more likely to develop into TB disease (active TB). Because TB increases energy expenditure and breaks down tissue, people with TB have higher micronutrient requirements. But because they have poor appetite, they cannot meet these increased requirements through their diet.

- Also explain that the nutrient requirement guidelines for PLHIV is applicable to TB clients (10% more energy required for asymptomatic, 20% or more for advanced or symptomatic clients).

- Show **Slide 18** on HIV-TB co-infection. Explain that TB is increasing, largely because of the spread of HIV. The case fatality rate from TB is over 50% in areas where HIV prevalence is high.

- Show **Slides 19 and 20** and follow the arrows to explain that HIV and TB increases nutritional needs but also decreases appetite and nutrient absorption. This leads to poor nutrition, which increases vulnerability to infections, which increase nutritional needs.

- Ask participants to refer to **Figure 1.1 The Vicious Cycle between Nutrition and HIV and/or TB** in the Participant Manual. Explain that the job aids are tools they can use in their workplaces to counsel clients and to find information quickly.

1.3 Causes of Malnutrition (40 minutes)

BRAINSTORM: Besides infections such as TB and HIV, what else can cause PLHIV and TB clients to become malnourished?

- Refer participants to **Exercise 1. Causes of Malnutrition in PLHIV and/or TB** in the Participant Manual, and in groups of 3–4 people, ask them to complete the exercise.

- List responses on a flipchart. Compare them with the information on **Slides 22 to 24** for immediate causes of malnutrition and **Slides 25 and 26** for underlying causes of malnutrition based on **Figure 1.2 Conceptual Framework of Malnutrition** in the Participant Manual.

- Refer participants to **Annex 1** in the Participant Manual for answers to Exercise 1, which are also in the following box.

A. IMMEDIATE CAUSES OF MALNUTRITION IN PEOPLE LIVING WITH HIV AND TB CLIENTS

Disease/illness

- HIV/AIDS
- Tuberculosis
- Opportunistic infections
- Related complications

Inadequate food intake because of:

- **Appetite loss** caused by high viral load, illness, drugs, depression, anxiety, fatigue, and taste changes associated with medicines
- **Nausea or vomiting** caused by illness or drugs
- **Oral problems** (decayed or missing teeth, mouth sores, thrush, and problems swallowing caused by throat tumours
- **Abdominal pains/cramps**
- **Lack of encouragement to eat** (lack of active feeding of children by caretakers)
- **Drug-food interactions** (drugs that cannot be taken with foods such as fats or milk, or have to be taken with certain foods)
- **Inappropriate food preparation** (destruction of nutrients, not mashing or grating food for people with oral problems or illness)
- **Increased nutrient needs** as a result of illness
- **Sub-optimal breastfeeding of infants**
- **Food taboos** associated with illness (not breastfeeding a child with a fever, not eating eggs when pregnant)
- **Gender inequalities in food distribution** (men eating first)

Inability to use, digest, or absorb some nutrients because of:

- Food intolerance (lactose, fat, or carbohydrates; malabsorption of fat leading to poor absorption of fat-soluble vitamins such as vitamins A and E)
- Constipation or bloating
- Diarrhoea (related to contaminated foods, HIV, or drug side effects)
- Poor gut integrity
- High viral load
- Infections
- Metabolic disorders (sometimes a side effect of drugs)
- Digestive malfunction such as insulin resistance

B. UNDERLYING CAUSES OF MALNUTRITION

- Lack of access to markets or food sources
- Lack of money to buy food or medicines
- Poor hygiene and sanitation
- Lack of knowledge and/or ability to practice optimal feeding behaviours
- Social/cultural beliefs

Food insecurity because of:

- Reduced ability to work and earn income and afford preferred foods
- Declining mobility to access health care and food markets as a result of illness
- Reduced access to food because of stigma, discrimination, or mental health issues such as depression
- Reduced access to food for vulnerable groups such as orphans and vulnerable children

DISCUSSION: Immediate and underlying causes of malnutrition

- Facilitate discussion on the **immediate** causes of malnutrition that participants have seen in the areas where they work, such as poor diet and infection.

- Explain that the availability of nutrition resources at the individual and household levels is linked to a set of **underlying** causes of malnutrition. Ask participants if they can identify some of these underlying causes. They include poor access to food, inadequate infant and young child feeding, gender issues, poor access to health care services, unclean water, and poor sanitation.

- Explain that the underlying causes of malnutrition, and finding ways to solve them, depend on economic and political structures, institutions, allocation of resources, and policy decisions. These are the **basic** causes of malnutrition. Ask participants how inadequate human resources for health care, drug distribution systems, and cost of services could affect people's nutritional status.

- Refer participants to **Figure 1.2 Conceptual Framework of Malnutrition** in the Participant Manual.

1.4 Clinical Symptoms and Signs of Malnutrition (40 minutes)

BRAINSTORM: How can you tell if someone is malnourished?

- List responses on a flipchart and compare them with the clinical features of malnutrition in **Slide 27**.

PRESENTATION: Clinical Symptoms and Signs of Malnutrition

- Explain that without appropriate interventions, people with illness, decreased appetite, or poor nutrient absorption and utilisation can become malnourished.
- Show **Slide 28** and explain the signs of Severe Acute Malnutrition (SAM) in the children in the photos (oedema in both feet or legs, wasting, and hair colour change [not shown]).
- Explain that people can be moderately malnourished without showing obvious signs. Moderate malnutrition puts people at risk of severe malnutrition. It is important to assess all clients' nutritional status so they can be counselled on how to maintain good nutritional status and avoid becoming severely malnourished.
- Remind participants that overweight and obesity are also signs of malnutrition, in this case overnutrition. Overweight and obesity put people at risk of diabetes, hypertension, and heart problems.

1.5 Consequences of Malnutrition in PLHIV and TB Clients
(40 minutes)

BRAINSTORM: What can happen to people with HIV or TB who are malnourished?

- Ask participants: 'What happens to people with HIV or TB who are malnourished?' List responses on a flipchart. Compare them with the information in **Slide 29**.

- Explain that **metabolism** is the set of chemical processes needed to maintain life. If the body does not receive an adequate supply of nutrients (because of either stress or inadequate supply) to support the growth and repair of cells (anabolism) the body will begin to break down (catabolism) tissues such as muscle and fat stores.

- Metabolic complications are problems in the body's ability to make or use energy. Examples are impaired glucose metabolism, abnormal body fat distribution, and lactic acid disorders.

WHY GOOD NUTRITION IS IMPORTANT FOR PEOPLE LIVING WITH HIV AND/OR TB CLIENTS

- Malnutrition is a major complication of HIV and TB. Persons with these diseases are vulnerable to malnutrition for both biological and social reasons.
- HIV and TB are an immediate cause of malnutrition and have a devastating impact on all underlying causes of malnutrition—care practices and capacity, household food security, and provision of health services.
- Symptoms associated with HIV and TB decrease appetite and interfere with nutrient digestion and absorption, further compromising immunity and increasing morbidity and mortality.
- Proper nutrition care helps persons with both diseases maintain body weight and strength, enhances their ability to tolerate medicines, and optimises the benefits of treatment. It also delays the progression of HIV infection to AIDS, increasing productivity and prolonging life.

BRAINSTORM: Why is nutrition important in the care and treatment of PLHIV and TB clients?

- Ask participants: 'Why is nutrition important in the care and treatment of PLHIV and TB clients?' Compare their answers with the information in **Slides 30 and 31**.

BRAINSTORM: 'Breaking the Cycle'

- Ask participants: 'How can good nutrition help prevent and fight infections?' List responses on a flipchart and compare them with the information on **Slide 32**. Follow the cycle from one arrow to another, explaining that good nutrition strengthens the immune system so the body can prevent and fight infection.

1.6 Preventing and Managing Malnutrition (1 hour)

BRAINSTORM: Preventing and Managing Malnutrition

- Review the causes of malnutrition discussed earlier. Ask participants: 'How can people prevent and manage malnutrition?' List responses on a flipchart and compare them to the information on **Slides 33 and 34**. Facilitate discussion.

- Explain to participants that this information is also found in **Session 1.6 Preventing and Managing Malnutrition** in the Participant Manual.

PRESENTATION: The Critical Nutrition Actions

- Refer participants to the **Critical Nutrition Actions for PLHIV and TB Clients** in Session 1.6 in the Participant Manual. Explain that the eight Critical Nutrition Actions (CNAs) can help people prevent and manage malnutrition.

- Show **Slides 35 and 36** and read aloud each CNA.

- Explain to participants that the CNAs will be discussed further in Module 3.

BRAINSTORM: Components of NACS

- Ask participants: 'What kind of nutrition services can health care facilities provide?' List responses on a flipchart and compare them with the information on **Slide 37**.

- Explain that health care workers can help prevent and manage malnutrition through Nutrition Assessment, Counselling, and Support (NACS). Every client who visits a health care facility should have a nutrition assessment to determine nutritional status. Health care workers should then counsel clients on how to improve their nutritional status and refer them for needed medical care or social support. Nutrition support can include prescribing specialised food products to clients with acute malnutrition.

Discussion (10 minutes)

- Allow time for questions and discuss any issues that need clarification.

- Refer participants to the last page of the Participant Manual, which outlines key points from Module 1.

MODULE 1: KEY POINTS

- Good nutrition is a critical element for maintaining good health.
- There are different types of malnutrition, and all forms of malnutrition increase the risk of mortality (death) and morbidity (illness).
- Food groups are made up of 'energy-giving foods', 'body-building foods', and 'protective foods'. All of these groups are critical in maintaining good nutritional intake.
- Adults with HIV or TB without symptoms require an additional 10% more energy compared with someone without either diseases
- Adults with HIV or TB with symptoms require up to an additional 20% more energy compared with someone without either diseases
- Children with HIV or TB who are malnourished or losing weight require up to an additional 100% more energy to restore nutritional status.
- There is insufficient evidence to suggest people with either HIV or TB require additional protein.
- Malnutrition in HIV and TB has both direct (disease related) and indirect (non-disease related) causes.
- Nutritional interventions such as NACS, which include strategies such as nutrition assessment, CNAs, and food support, economic strengthening, and livelihood interventions, are important to prevent and treat malnutrition.

- Distribute copies of the **Module 1 Evaluation Form** found in **Annex 3**. Ask participants to fill out the form and give it to you before they leave.

2 Nutrition Assessment, Classification, and Care Plans

MODULE 2. NUTRITION ASSESSMENT, CLASSIFICATION, AND CARE PLANS

8.5 hours

Health care workers need to know clients' nutritional status to be able to counsel them on how to maintain healthy weight, manage common conditions, and avoid infections. **Clinical assessment** includes checking for medical complications that can affect nutritional status. **Physical assessment** includes measuring weight, height, Mid-Upper Arm Circumference (MUAC) and Body Mass Index (BMI). **Biochemical assessment**, including interpreting lab tests based on blood and urine, helps confirm nutritional deficiencies. **Dietary assessment** gathers information on food intake. With this combined information, health care workers can choose appropriate Nutrition Care Plans.

Purpose	Give participants the knowledge and skills to assess and classify nutritional status and select Nutrition Care Plans based on the results, with special reference to People Living with HIV (PLHIV) and TB clients.

Learning objectives

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

1. Explain the importance of nutrition assessment
2. Take and interpret anthropometric measurements accurately
3. Conduct clinical, biochemical, and dietary assessments
4. Classify nutritional status correctly based on nutrition assessment
5. Select appropriate Nutrition Care Plans based on clients' nutritional status
6. Use the Outpatient Care Action Protocol
7. Explain the importance of recording client nutrition information

Materials needed

- Flipchart and stand
- Markers and tape
- 4 sheets of white paper, cut in half lengthwise
- LCD projector
- PowerPoint
- At least 2 functioning scales (1 for adults and 1 for children)
- At least 1 height measuring device for adults
- Colour coded Adult BMI Wheels
- MUAC tapes for each participant and facilitator:
  - Colour coded MUAC tape for children 6–59 months
  - MUAC tape for children 6–17 years and adults
- **Hand-outs**
  - 2 copies each of **Table 2.7 24-Hour Dietary Recall Form** and **Table 2.8 Food Frequency Questionnaire** from the Participant Manual.
- **Participant Manual**
- **Exercises**
  - **Exercise 2. Computing BMI for Adults**
  - **Exercise 3. Client Register from Aduaba Clinic**
  - **Exercise 4. Case Study: Nortey, Narku, and Kande**

Advance preparation

- Review PowerPoint slides for Module 2 (copy the information onto a flipchart if you do not have an LCD projector).
- Review **Module 2** in the **Participant Manual**.
- Review the Case Study (**Exercise 4**) in the **Participant Manual**.
- Write each of the review questions below on a half-sheet of white paper. Crumple one of the sheets to make a ball. Then add another sheet on top and continue until all of the sheets are added and the ball looks like a cabbage with many leaves.

  1. What is undernutrition?
  2. What is overnutrition?
  3. What are the immediate causes of malnutrition?
  4. What food group do cereals, roots, and tubers belong to?
  5. What does the food group that includes pulses, nuts, and animal-origin food provide?
  6. What are two clinical features of malnutrition?
  7. Why do people need more energy if they have HIV and/or TB?
  8. What is one Critical Nutrition Action?

- Test all anthropometric equipment to make sure it is functioning and accurate.
- Practice using MUAC tapes and calculating BMI
- Make sure there is a scale and, if possible, a height measure in front of the class.

- Show Module 2 heading on **Slide 38.**

Objectives (5 minutes)

- Present the module objectives on **Slide 39.**

Review (15 minutes)

- Ask participants to stand in a circle. Show them the 'cabbage' made of the crumpled sheets of paper with review questions. Explain that the ball contains questions that will help review the content of **Module 1. Overview of Nutrition**.

- Toss the ball to one of the participants. Ask the person who catches the ball to pull off the first sheet, read the question aloud, and answer the question. Then ask that person to toss the ball to another participant, who should pull off the next sheet of paper, read the question aloud, and answer the question. Continue until all of the questions are asked and answered.

- If someone has difficulty answering a question, ask the rest of the participants to help. If no one can answer the question correctly, thank the participants for trying and explain the correct answer. Answers are shaded in the right-hand column below.

Questions	Answers
What is undernutrition?	The result of consuming less energy and nutrients than the body needs
What is overnutrition?	The result of consuming more nutrients and energy than the body needs
What are the immediate causes of malnutrition?	Inadequate dietary intake and disease
What food group do cereals, roots, and tubers belong to?	Carbohydrates, which provide energy
What does the food group that includes pulses, nuts, and animal-origin food provide?	Protein to build the body
What are two clinical features of malnutrition?	Any two are correct: wasting, hair changes, pitting oedema in both legs, kwashiorkor, marasmus
Why do people need more energy if they have HIV and/or TB?	HIV and/or TB causes weight loss and decreases the body's ability to absorb nutrients and use them to fight infection

What is one Critical Nutrition Action?	Any of the following is correct: • Get weighed regularly and have weight recorded • Eat a variety of foods three times a day with two snacks between meals • Drink plenty of clean and safe water • Avoid stress, alcohol, tobacco, and coloured and sweetened drinks • Maintain good hygiene and sanitation • Get exercise as often as possible • Prevent and seek early treatment of infections • Take medicines as your health worker advises

- Explain to participants the meaning of the following abbreviations and acronyms used in this module: SAM (Severe Acute Malnutrition), MAM (Moderate Acute Malnutrition), BMI (Body Mass Index), MUAC (Mid-Upper Arm Circumference).

- Also explain the meaning of the symbols < (less than), > (greater than), ≤ (less than or equal to), and ≥ (greater than or equal to).

2.1 Nutrition Assessment (40 minutes)

BRAINSTORM: Importance of Nutrition Assessment

- Ask participants: 'Why should health care workers do regular nutrition assessment?' Write responses on a flipchart. Compare the responses with the information on **Slide 40**.
- Explain that patients who are not identified as malnourished and treated early have longer hospital stays, slower recovery from infection and complications, and higher morbidity and mortality.

BRAINSTORM: Types of Nutritional Assessment

- Ask participants: 'How can health care workers tell whether someone is malnourished?' List responses on a flipchart.
- Show **Slide 41** and compare the participants' responses to the information on the slide. Explain that nutrition assessment includes anthropometric measurements and a physical examination, a clinical history, a review of laboratory blood and urine test results, and analysis of food intake.
- Explain that participants will learn more about all these types of assessment in this module.
- Explain that NACS are coordinated with the national HIV and/or TB care and treatment protocols and the national protocols for management of acute malnutrition. Much of nutrition assessment is done as part of broader medical assessment. NACS should be a routine part of clinical care.

2.2 Clinical Assessment (45 minutes)

- Ask participants to read **Tables 2.1 and 2.2 on How to Assess the Nutritional Status of a Child and Adult** in Session 2.2 of the Participant Manual.

- Show **Slide 42** and explain that clinical nutrition assessment includes finding out whether a client has any signs or symptoms of medical complications or is taking any medications that affect nutritional status.

- Explain that a client with any of these medical complications should be referred for further treatment and treated as an inpatient.

- 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 the therapeutic food used to treat SAM on their own and thus can be treated on an outpatient basis. If they cannot pass the appetite test, they will need to be admitted for inpatient treatment so they can be carefully monitored during treatment.

PRESENTATION: Bilateral pitting oedema

- Explain that bilateral pitting oedema is a sign of SAM. It can be used to diagnose SAM regardless of a client's BMI or MUAC.

- Define 'oedema' as the abnormal accumulation of fluid in the interstitial spaces of tissues. Either too much fluid moves from the blood vessels into the tissues or not enough fluid moves from the tissues back into the blood vessels. This fluid imbalance can cause swelling in one or more parts of the body.

- Explain that bilateral pitting oedema is oedema in both feet or legs in which pressure on the skin leaves a depression in the tissues.

> Stress that any client, adult or child, with bilateral pitting oedema should be considered as having severe acute malnutrition with medical complications, regardless of her or his anthropometric measurements.

- Refer participants to **How to Assess for Bilateral Pitting Oedema** in Session 2.2 of the Participant Manual. Explain that in the second illustration the health care worker is holding the child's heels to show the indented skin in the feet. Point out the different grades of oedema. Explain that nutritional oedema is rare in adults. Point out how oedema from other causes differs from nutritional oedema.

PRACTICAL SESSION

- Refer the groups to **How to Conduct an RUTF Appetite Test** in Session 2.2 of the Participant Manual. Ask volunteers to read each step aloud.

- Ask volunteers to repeat the amounts of RUTF clients must eat to pass the appetite test.
- Explain that if the appetite test is inconclusive, the client should always be referred to inpatient care until appetite has been restored.
- Explain that appetite should be tested on admission and at each follow-up visit.

PRESENTATION: Drug-food interactions and drug side effects

- Explain that some medications can interfere with the absorption, digestion, metabolism, and utilisation of food. In return, nutritional status and diet can affect the action of medications. Knowing what medications clients are taking allows health care workers to counsel them on how to manage drug-food interactions and drug side effects. This will be explained later in this course.

2.3 Physical Assessment (Anthropometric Measurements) (2 hours)

- Explain that physical assessment includes taking anthropometric measurements and checking for other physical signs of nutritional deficiencies.

BRAINSTORM: Physical assessment: anthropometry

- Ask participants: 'What is anthropometry?' List responses on a flipchart and compare them to the information in **Slide 43**.

BRAINSTORM: Types of anthropometric assessments

- Ask participants: 'What are the different types of anthropometric measurements?' List responses on a flipchart and compare them to the information in **Slide 44**.

PRACTICE: Measuring weight and height

- Explain that body weight is strongly correlated with the development of disease. Unintentional weight loss can mean poor health and reduce the body's ability to fight infection. Refer the groups to **Session 2.3** in the Participant Manual for information on measuring weight.

- Ask participants to form their small groups. Refer the groups to **How to Weigh a Child under 2 Years of Age using the UNISCALE** and **How to Weigh a Child over 2 Years and Adults using the UNISCALE** in **Session 2.3** of the Participant Manual. Ask volunteers to read the information aloud.

- Demonstrate how to zero the weighing scale and measure weight correctly (if participants are unfamiliar with this type of scale).

- Explain that accurate measurements are important because errors can lead to classifying a client's nutritional status incorrectly and providing the wrong care. Errors include weighing clients with too much clothing, weighing clients who are not standing straight, and using inaccurate scales.

- Ask each group to go to the weighing scale and choose a person to weigh. One group member should weigh the person while the others observe and record the weight. Watch the groups to make sure they do the exercise correctly.

- Ask the participants to find their **Participant Manual**. Explain that they will use these to record the results of practical exercises during the training and point out that the last page is for notes.

- Then ask the groups to write the name, sex, pregnancy status, and weight in kg to the nearest 100 g of the first person weighed from the group**.**

- Ask each group to weigh the rest of the group members and record their weights, as time permits. Again, one group member should weigh the person while the others observe and record the weight.

- If possible, bring children to the classroom so the groups can practice weighing them. Refer participants to **How to Weigh a Child under 2 Years of Age** in the Participant Manual. Explain that children can also be weighed on a scale on the ground. Remind the groups that they can use these job aids in their workplaces when they need to assess children's nutritional status.

- Refer participants to **How to Use a Height Board to Measure Height** in the Participant Manual and ask a volunteer to read the information aloud.

- Ask each group to go to a height board to measure the height of each person who was weighed. The other group members should observe and record the height.

- Ask the groups to discuss any problems they had measuring weight and height, including equipment (error, zeroing), clothing, reading the equipment, colleagues not standing straight for height, and so on.

BRAINSTORM: How often should clients be weighed?

- Compare the responses with the information in **Slide 45**.

PRESENTATION: BMI

- Explain that weight is a reliable index of nutritional status but only gives general information on fat stores or lean muscle mass. For more specific information on these indicators, other anthropometric measurements are needed.

- Show **Slides 46 and 47**.

- Explain that BMI is the preferred indicator of thinness for adults over 18 years old who are not pregnant or within 6 months post-partum. BMI measures body fat composition compared with that of an average healthy person. If BMI shows that body fat is below established standards, nutrition intervention is needed to slow or reverse the loss.

- Explain that BMI is not accurate in pregnant women and women up to 6 months post-partum because their weight gain is not linked to their nutritional status. Therefore, MUAC is used to measure the nutritional status of pregnant and post-partum women.

- Explain that BMI is used to assess the nutritional status of adults living with HIV because PLHIV with progressive or late-stage HIV infection can lose muscle faster than weight, and weight loss does not indicate the amount of muscle loss. High rates of muscle loss are associated with higher morbidity and mortality.

PRACTICE: Calculating BMI for adults

- Refer the groups to **Computing BMI for Adults** in **Session 2.3** in the Participant Manual and ask volunteers to read the sections aloud.

- Write the formula below on a flipchart visible to all the participants. Explain that BMI is calculated by dividing weight in kilograms by height in metres squared (BMI = kg/m^2). Point out that height measured in centimetres will have to be converted to metres.

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

- Write on a flip chart the BMI cut off points and classification as shown in the table below. Ask the participants to note the information.

BMI	Nutritional status
< 16.0	Severe malnutrition
≥ 16.0 to < 18.5	Moderate malnutrition
≥ 18.5 to < 25.0	Normal nutritional status
≥ 25.0 to < 30.0	Overweight
≥ 30.0	Obese

Source: WHO. 1995. *Physical Status: The Use and Interpretation of Anthropometry: Report of a WHO Expert Committee.* WHO Technical Report Series 854. Geneva: WHO.

- Show **Slide 49.**

- Ask participants to use the formula to compute BMI in **Exercise 2** in the Participant Manual. Participants should record the exact BMI.

- Refer the groups to an enlarged **Job Aid of the Body Mass Index Wheel**. Explain that they can use this Wheel to find BMI instead of using a calculator. Explain the colour coding if they are not familiar with it.

- Ask one or two groups to present their results. Answers are shaded in the following table.

ID	Sex	Height (cm)	Weight (kg)	BMI
1	F	184	52	**15.36**
2	F	148	40	**18.26**
3	F	178	50	**15.78**
4	M	190	68	**18.84**
5	M	176	48	**15.5**
6	F	156	102	**41.91**
7	M	160	38	**14.84**
8	M	174	84	**27.74**
9	F	180	74	**22.84**
10	M	164	66	**24.54**

- Ask the groups to discuss any difficulties they had finding BMI on the chart.

PRESENTATION: MUAC

- Explain that BMI does not account for changes in body composition including changes in PLHIV caused by ART. Therefore, MUAC is sometimes used instead of BMI to measure nutritional status in PLHIV.

- Explain again that BMI is only used to classify the nutritional status of non-pregnant and non-lactating adults. MUAC is used to measure children 6 months–17 years, pregnant and lactating women, and adults who are too sick to stand.

- Also explain that Ghana has adopted the use of MUAC only to screen and admit children 6 months–17 years of age.

PRACTICE: Measuring MUAC

- Explain that MUAC is a quick and easy way to measure nutritional status because it only requires a tape measure, but it must be done accurately. Even a ¼-inch error can mean a difference in treatment.

- Give each participant two MUAC tapes for different age groups. Point out the labels. Point out the colour coding to indicate nutritional status and the cut-offs for SAM, MAM, and normal nutritional status.

- Explain that the MUAC tape for adults is also used for children 5–17 years of age and for pregnant women and women up to 6 months post-partum.

- Wrap an adult MUAC tape around the middle of a co-facilitator's upper left arm. Find the measurement and ask the groups to identify the nutritional status by the reading.

- Refer the groups to **How to Measure Mid-Upper Arm Circumference** in **Session 2.3** of the Participant Manual. Ask volunteers to read each step aloud. Explain that the job aid

shows a person measuring the MUAC of a child, but the placement of the tape is the same as for adults.

- Ask one pair in each group to measure each other's MUAC while the other pair observes, makes suggestions (for example, how to place the tape correctly on the arm or keep the tape at eye level), and records the measurements. Give the groups 5 minutes for this activity. Observe each pair and make sure participants are measuring MUAC correctly.

- Ask the pairs to switch roles so that the other pair has a chance to measure each other's MUAC.

- Ask the groups to discuss any problems they had measuring MUAC, for example, not finding the correct mid-point of the upper arm.

- Repeat the demonstration if necessary, stressing areas that need strengthening.

- Refer the groups back to **How to Measure Mid-Upper Arm Circumference** in **Session 2.3** and explain that the Participant Manual contains detailed information on this anthropometric measurement.

- Explain to the participants the MUAC cut-off points for Ghana.

Group	Severe acute malnutrition (SAM)	Moderate acute malnutrition (MAM)	Normal
Children (6–59 months old)	< 11.5 cm	≥ 11.5 to < 12.5 cm	≥ 12.5 cm
Children (5–9 years old)	< 13.5 cm	≥ 13.5 to < 14.5 cm	≥ 14.5 cm
Children (10–14 years old)	< 16.0 cm	≥ 16.0 to < 18.5 cm	≥ 18.5 cm
Adolescents (15–17 years old)	< 17.5 cm	≥ 17.5 to < 19.5 cm	≥ 19.5 cm
Pregnant/post-partum women	< 21.0 cm	≥ 21.0 to < 23.0 cm	≥ 23.0 cm
Adults who are too sick to stand	< 19.0 cm	≥ 19.0 to < 21.0 cm	≥ 21.0 cm

Classifying Nutritional Status

PRACTICE: Classifying nutritional status

- Ask participants to refer to **Table 2.5 Algorithm for Assessing Malnutrition in Children 6 Months to 17 Years** in **Session 2.3** of the Participant Manual. Ask them to read through the columns on the first page of the job aid under 'Assess'. Explain that these are the steps health care workers should follow to find out whether children are malnourished.

- Then refer participants back to **Table 2.1 How to Assess the Nutritional Status of a Child** in **Session 2.2** of the Participant Manual. Ask volunteers to identify the four things to assess under 'EXAMINE AND MEASURE' (*Answer: Bilateral pitting oedema, medical complications, MUAC, and weight*).

- Point out the BMI cut-offs for classification of malnutrition in non-pregnant, non-post-partum adults. Pregnant, post-partum women should be measured using MUAC.

- Ask the groups to use the appropriate algorithms to classify the nutritional status of each person they weighed and measured and record it their **Participant Manual.**

BRAINSTORM: Classification of Nutrition Status

- Ask participants: 'What are the different classifications of nutritional status?' Write responses on a flipchart and compare them with the information on **Slide 51**.

- Refer the groups to **Exercise 3. Client Register from the Aduaba Clinic** in **Session 2.3** of the Participant Manual. Explain that the register contains information about 9 children and 6 adults seen at this clinic in one day. Assign each group two clients from the register.

- Ask the groups to use what they have learned about finding BMI and MUAC and classifying nutritional status to fill in the shaded column for each of their assigned clients.

- Ask one or two groups to present their results while the other groups fill in gaps as needed. Explain that if measurements contradict each other, the severer classification should be used.

Exercise 3. Client Register from the Aduaba Clinic

The table below shows the client register from Aduaba Clinic. The register contains information about 9 children and 6 adults who were seen on a clinic day. Classify the nutritional status of each client writing the classification in the column furthest to the right.

ID	Sex	Age	HIV status	Complications?	Bilateral pitting oedema	MUAC (cm or colour)	Height (cm)	Weight (kg)	Nutritional status
1	F	35 mo.	Not known (NK)	No	No	Green		12.5	**Normal**
3	M	62 mo.	-	Yes	++	Yellow		13.5	**SAM**
5	M	9 mo.	NK	No	No	12.5		6.7	**Normal**
7	F	8 mo.	NK	No	+	10.5		5.0	**SAM**
9	M	21 mo.	+	Yes	No	10.9		11.0	**SAM**
10	M	17 mo.	+	No	+	Green		12.9	**SAM**
16	M	17 yr.	+	No	No	22		62	**Normal**
17	M	16 yr.	+	No	No	20		64	**Normal**
18	M	14 yr.	+	No	No	15		54	**SAM**
19	F	27 yr.	+	Yes	Yes		166	72	**Mildly overweight**
20	M	46 yr.	+	No	No		160	80	**Obese**
21	F	19 yr.	+	Yes	No		164	50	**MAM**
22	F	31 yr.	+	No	No		162	40	**SAM**
23	F	37 yr.	+	No	No		156	42	**MAM**
24	M	26 yr.	+	Yes	No		178	84	**Mildly overweight**

2.4 Biochemical Assessment (25 minutes)

- Explain that laboratory tests are helpful but not essential parts of nutrition assessment. Health care workers can obtain nutrition information from the results of blood, urine, and stool tests.

- Show **Slide 53** on different lab tests that provide information on nutritional status. Explain that not every health facility may do all these tests, but health care workers can use any available lab results to assess the nutrition-related problems of their clients.

2.5 Dietary Assessment (1 hour)

- Explain that diet history is an essential part of nutrition assessment. It provides information on the amount and quality of food a client has eaten, eating habits, food allergies, and intolerances and reasons for inadequate food intake during illness. Health care workers should compare the information with recommended nutrient intake and counsel clients on how to improve their diets.

- Show **Slide 54** and explain that there are different ways to assess diet. One is the 24-hour dietary recall and another is the food frequency questionnaire.

- Refer the groups to **Taking a Dietary History in Session 2.5** of the Participant Manual, which explains how to use both methods.

- Explain that each group will practice using one of the methods. Groups 1, 2, and 3 will use 24-hour dietary recall, and groups 4, 5, and 6 will use the food frequency questionnaire. Ask one person in each group to volunteer to share her or his dietary history. Another group member should record the answers. Give the groups 20 minutes for this exercise. Then ask the groups to describe their experience practicing dietary assessment.

- Point out that dietary assessment has the following limitations:
  - Clients may have trouble remembering everything they eat and drink.
  - In a 24-hour dietary recall, the food eaten in one day may not represent the usual food intake.
  - Clients may over-report energy intake.

Exercise 4. Case Study: Nortey, Narku, and Kande

- Refer the groups to **Exercise 4. Case Study: Nortey, Narku, and Kande** in **Session 2.5** of the Participant Manual. Ask a volunteer to read Part 1 aloud.
- Divide the class into small groups of about 5 to 6 people. Ask the groups to continue with Exercise 4, Parts 2–7.
- Instruct the groups to use the appropriate algorithms, BMI chart, and MUAC information to classify nutritional status. Also ask the groups to list other problems in each part of the exercise.
- Ask one or two groups to present their results and compare them with the information in the box.

ANSWERS

Part 1

Nortey has moderate malnutrition but has some complications that need to be addressed otherwise he may be at risk of severe malnutrition. He has other conditions including:

- Anaemia
- Oral thrush
- Diarrhoea

Part 2

Narku is classified as having SAM (based on MUAC and oedema) with medical complications. He has other conditions including:

- Sunken eyes
- Prolonged skin pinch
- Chest in-drawing
- Finger clubbing, etc.

Part 3

Nortey is classified still as having SAM with medical complications, even though some of the medical complications have been resolved. He has some social issues in the area of worry and alcohol consumption.

Part 4

Narku is classified still as SAM with medical complications, but is steadily improving in his health status.

Part 5

Kande has SAM without medical complications.

Part 6

Narku is classified as having MAM.

Part 7

Narku is classified as normal and Kande as having MAM.

2.6 Nutrition Care Plans for PLHIV and/or TB Clients (3 hours)

Severe Acute Malnutrition (2 hours)

- Explain that the final step in nutrition assessment is to determine the correct Nutrition Care Plan for the client. There is a Nutrition Care Plan for every classification of nutritional status.

- Refer the groups to **Session 2.6 Nutrition Care Plans** in the Participant Manual. Point out that there are different Nutrition Care Plans for different classifications of nutritional status.

BRAINSTORM: Nutrition Care Plans

- Ask participants: 'What criteria classify children and adults as having severe acute malnutrition?' Write the responses on a flipchart and compare them to the information in **Slide 56**.

- Show **Slide 57** with photos of adult and children with SAM. Ask participants whether they have seen such cases in their work.

- Refer the groups to **Table 2.5 and 2.6 Algorithms for Assessing Malnutrition in Children and Adults** in **Session 2.3** of the Participant Manual. Ask them to find the criteria for the Nutrition Care Plan for SAM. Explain that it is red for 'danger' because SAM is a life-threatening condition that requires urgent treatment.

- Review **Slides 58 to 64** which provides the criteria for managing children and adults with SAM

BRAINSTORM: What nutrition care do clients with severe acute malnutrition need?

- Ask participants: 'What nutrition care do clients with severe acute malnutrition need?' Write the responses on a flipchart and compare them to the information in **Slides 65 and 66**.

GROUP WORK: Nutrition Care Plan for SAM

- Refer the groups to the **Nutrition Care Plan for Children with SAM** in **Session 2.6** in the Participant Manual. Explain that this care plan has two parts.

- The first part is the **Inpatient Care Management of Children with SAM** and medical complications and or no appetite. This care plans covers infants and children up to 17 years of age.

- The second part is the **Outpatient Care Management of SAM without Complications** and with good appetite.

- Show **Slides 58–60** on the criteria for inpatient treatment of SAM.

- Refer the groups again to the **Nutrition Care Plan for Children with SAM** in **Session 2.6** in the Participant Manual.

- Refer participants to **Slide 61**. Point out that there are three phases in inpatient care management of SAM: stabilisation, transition, and rehabilitation.

    1. **Initial treatment (stabilisation):** Life-threatening problems are identified and treated in a hospital or residential care facility, specific deficiencies are corrected, metabolic abnormalities are reversed, and feeding is begun.
    2. **Transition:** This prepares the child for outpatient care and can last up to 3 days. RUTF is gradually introduced in this phase.
    3. **Rehabilitation and follow up:** Intensive feeding is given to recover most of the lost weight, emotional and physical stimulation are increased, and, in most cases, rehabilitation will take place in outpatient care using RUTF. During rehabilitation in outpatient care, the mother and child are followed up to prevent relapse and assure the continued physical, mental, and emotional development of the child.

- Point out that inpatient care of SAM includes medical treatment and nutritional treatment with specialised food products according to a standard protocol and strict eligibility criteria. The specialised food products are F-75, F-100, and other RUTF. These are prescribed as medicine for severely malnourished clients.

- Show **Slides 63 and 64** on the criteria for outpatient treatment of SAM.

- Explain that in outpatient care management of SAM, clients are prescribed specialised food products to consume at home. They have to be counselled that the food is medicine and should not be shared with other people in the household. Health care workers should demonstrate how to prepare, eat, and store the specialised food products.

- Refer the groups again to **Exercise 4. Case Study: Nortey, Narku, and Kande** in **Session 2.5** of the Participant Manual. Ask a volunteer to read Part 2. Ask which Nutrition Care Plan the groups would use to treat the severely malnourished Narku based on what they know about his nutritional and health status (*ANSWER:* Nutrition Care Plan for inpatient care management of SAM).

- Now ask a volunteer to read Part 4 of the case study. Ask which Nutrition Care Plan the groups would use for Narku now that his medical complications have been treated and he is gaining weight (*ANSWER:* Nutrition Care Plan for outpatient care management of SAM).

- Ask the groups to use the **Nutrition Care Plan for Children with SAM** and the **Nutrition Care Plan for Adults with SAM** in **Session 2.6** of the Participant Manual to answer the questions in **Exercise 5. Nutrition Care Plan for SAM** in **Session 2.6**.

- Ask one group to present its answers and let the other groups fill in gaps as needed. The answers are provided in the box below. Facilitate discussion and answer questions as needed.

1. What nutrition and health criteria should be used to recruit clients into the Nutrition Care Plan for SAM?

   ANSWERS:
   - SAM with medical complications
   - SAM without medical complications

2. What are the eligibility criteria for specialised food under the Nutrition Care Plan for SAM?

   ANSWERS:
   - Bilateral pitting oedema for both children and adults
   - Children MAUC:
     - 6–59 months: < 11.5 cm
     - 5–9 years: < 13.5 cm
     - 10–14 years: < 16.0 cm
     - 15–17 years: < 17.5 cm
   - Adults: MUAC < 19.0 cm OR BMI < 16.0
   - Pregnant lactating women MUAC < 21 cm

3. What specialised food products are given to clients under the Nutrition Care Plan for SAM?

   ANSWER: F-75, F-100, RUTF, and fortified-blended food (FBF)

4. What quantities of specialised food should be given to the following?

   ANSWERS:
   - 3 years of age: RUTF depending on weight
   - 6 years of age: 2 sachets RUTF and 300 g FBF
   - Woman 7 months pregnant: 2 sachets RUTF plus 300 g FBF
   - Woman 38 years: 3 sachets RUTF plus 300 g FBF

5. What key messages should be given to each of the groups?
   - 3 year old with SAM and medical complications
   - 6 year old with SAM without medical complications
   - Woman 7 months pregnant
   - Woman 38 years with fever and TB

   (Refer to care plans for answers)

6. What other interventions/services are given to clients with SAM?

   ANSWERS:
   - Routine SAM medicines
   - Co-trimoxazole prophylaxis for HIV-positive clients
   - Deworming according to national guidelines
   - 200,000 IU of vitamin A if no oedema

7. How often should adults with SAM be followed up?

   ANSWER: Every 2 weeks

- Ask participants to identify challenges they might face in providing care and support to clients with SAM in their health care facilities.

Moderate Acute Malnutrition (35 minutes)

BRAINSTORM: Criteria for MAM

- Ask groups: 'What criteria classify children and adults as having moderate acute malnutrition?' Write the responses on a flipchart and compare them to the information in **Slide 68**.

- Refer the groups to **Tables 2.5 and 2.6 Algorithms for Assessing Malnutrition in Children and Adults** in **Session 2.3** in the Participant Manual. Ask them to find the criteria for the Nutrition Care Plan for MAM in the algorithms. Explain that the yellow represents 'caution' because clients with MAM can become severely malnourished if not counselled and treated. Note that one in every five PLHIV who start ART have MAM, usually associated with an opportunistic infection.

BRAINSTORM: Nutrition care for clients with MAM

- Ask groups: 'What nutrition care do clients with moderate acute malnutrition need?' Compare the responses to the information in **Slide 69**.

GROUP WORK: Nutrition Care Plan for MAM

- Ask the groups to use **Tables 2.5 and 2.6 Algorithms for Assessing Malnutrition in Children and Adults** in **Session 2.3,** and **Nutrition Care Plans for Children and Adults with MAM** in **Session 2.6** of the Participant Manual to answer the questions in **Exercise 6. Nutrition Care Plan for MAM** in **Session 2.6**.

- Ask one group to present its answers and let the other groups fill in gaps as needed. Answers are provided in the box below.

1. What eligibility criteria qualify adults and children for the Nutrition Care Plan for MAM?

   ANSWERS:
   - Adults:
     - BMI ≥ 16.0 to < 18.5 **OR**
     - MUAC ≥ 19 to < 21 cm
   - Pregnant and Lactating Women:
     - MUAC ≥ 21 to < 23 cm
     - Poor weight gain
   - Children:
     - 6–59 months: MUAC ≥ 11.5 to < 12.5 cm
     - 5–9 years: MUAC ≥ 13.5 to < 14.5 cm
     - 10–14 years: MUAC ≥ 16.0 to < 18.5 cm
     - 15–17 years: MUAC ≥ 17.5 to < 19.5 cm

     OR confirmed weight loss since the last visit

2. What specialised foods are given to clients under the Nutrition Care Plan for MAM?

   ANSWER: FBF or food supplementation (food basket)

3. What quantities of specialised foods per day do you give to the following under the Nutrition Care Plan for MAM?

   ANSWERS:
   - Child 3 years of age: 150 g FBF or food supplementation (food basket)
   - Child 6 years of age: 150 g FBF or food supplementation (food basket)
   - Woman 7 months pregnant: 300 g FBF
   - Non-pregnant/post-partum woman 38 years: 300 g FBF

4. What key messages should health care workers give an adult with HIV and/or TB who has MAM?

   ANSWERS:
   - Continue to eat three meals and two snacks every day, consuming 20% more energy from home foods.
   - Add sugar, eggs, or milk to enrich food.
   - Continue to take medicines as advised by the health care worker.
   - Get weighed every month.
   - Manage symptoms through diet.
   - Maintain good sanitation and hygiene.
   - Exercise to strengthen muscles and improve appetite.

5. How often should health care workers follow up clients with MAM?

   ANSWER: Every month.

- Refer the groups again to Part 6 of **Exercise 4. Case Study: Nortey, Narku, and Kande** in **Session 2.5** of the Participant Manual. Explain that Narku has been discharged from treatment for SAM but still has MAM. Narku was initially severely malnourished and was being treated for TB. Ask the groups what support they would give Narku based on the Nutrition Care Plan for MAM. One participant in each group should write the responses on a flipchart. Give the groups a time limit of 10 minutes. Then ask one or two groups to present their results.

- Ask participants to identify challenges they might face in providing care and support to moderately malnourished clients in their health care facilities.

Normal Nutritional Status (35 minutes)

BRAINSTORM: Normal nutrition status and people living with HIV and/or TB

- Ask groups: 'Why are a significant proportion of PLHIV not malnourished, and people with TB are?' Compare participants' responses to the information in the box.

> Most PLHIV are not malnourished because:
>
> - They are in the initial stages of HIV and still asymptomatic (they have no AIDS-related illnesses that cause appetite loss or affect other aspects of nutrition).
> - They only need 10% more energy (because of HIV infection) than HIV-negative people, which most can attain unless they are in situations of severe food insecurity.
> - Most have begun treatment, for example, PCP (*Pneumocystis carinii pneumonia*) prophylaxis and treatment of opportunistic infections.
>
> With TB disease:
>
> - Most persons are malnourished by the time of diagnosis because TB is a wasting disease and manifests with significant weight loss.
> - TB treatment in most cases leads to a significant improvement in nutritional status.

- Ask the groups to refer again to **Tables 2.5 and 2.6 Algorithms for Assessing Malnutrition in Children and Adults** in **Session 2.3** in the Participant Manual. Find what anthropometric measurements qualify children and adults as having normal nutritional status. Compare the responses to the information on **Slide 71**.

- Ask the groups to look at the right-hand column ('Treatment/Care') of **Tables 2.5 and 2.6 Algorithms for Assessing Malnutrition in Children and Adults** in **Session 2.3** and note the **Nutrition Care Plan for Normal Nutritional Status**. Explain that green represents 'OK'.

BRAINSTORM: Nutrition care for those with normal nutritional status

- Ask the groups: 'What nutrition care do clients with normal nutritional status need?' Compare the responses to the information in **Slide 72**.

GROUP WORK: Nutrition Care Plan for Normal Nutritional Status

- Ask the groups to use the **Nutrition Care Plans for Children and Adults** in **Session 2.6** in the Participant Manual to answer the questions in **Exercise 7. Nutrition Care Plan for Normal Nutritional Status**.

- Ask one group to present its answers and let the other groups fill in gaps as needed. Answers are provided in the box on the next page.

1. How much food does a healthy adult need in a day?

   ANSWER: Three balanced meals a day to provide about 2,500 kcal

2. How much food gives 10% extra energy?

   ANSWER: One snack

3. What snack can provide 10% additional energy for an asymptomatic HIV-positive or TB-infected adult?

   ANSWER: Examples are 250 ml of porridge or 1 egg or 1 banana

4. How many snacks a day should an HIV-positive or TB infected pregnant or post-partum woman eat?

   ANSWER: Three for pregnant and post-partum women

5. What can a caregiver add to porridge to increase a child's energy intake by 10%?

   ANSWER: 1 teaspoon of oil or 1 teaspoon sugar or margarine.

- Refer the groups again **Exercise 4. Case Study: Nortey, Narku, and Kande** in **Session 2.5** of the Participant Manual. Ask a volunteer to read Part 7. Ask the groups to discuss how they would care for Kande and Narku based on their nutritional and health status in Part 7. One group member should write the responses on a flipchart.

- Ask two groups to share their responses. Facilitate discussion and fill in gaps as needed.

- Ask the groups to identify challenges they might face in providing this support in their workplaces.

- Refer participants **Module 2 Key Points** in the Participant Manual.

MODULE 2 KEY POINTS

- Nutritional assessment is a crucial step in the nutritional management of an individual.
- Nutritional assessment comprises a number of components often summarized as 'ABCD' including Anthropometry (Physical), Biochemical, Clinical, and Dietary intake.
- The outcome of the nutritional assessment determines the most appropriate nutrition care plan for the individual infant, child, or adult.
- Severe Acute Malnutrition (SAM) is managed in a clinic setting if the patient has other complications, and in the community of there are no other complications.
- There are three phases in the management of inpatient SAM. The phases include initiation or stabilisation, transition, and rehabilitation or follow-up. Management of this form of malnutrition requires a 10 step process to prevent life threatening complications.
- On-going follow-up for people with both SAM and MAM is critical to promote optimal treatment outcomes.

Discussion (10 minutes)

- Allow time for questions and discuss any issues that need clarification.
- Distribute copies of the **Module 2 Evaluation Form** found in **Annex 3**. Ask participants to fill them out and give them to you before they leave.

3 Nutrition Education, Counselling, and Referral

MODULE 3. NUTRITION EDUCATION, COUNSELLING, AND REFERRAL

6 hours

Based on nutritional status and dietary and other needs, health care workers can use the GATHER approach to counsel individual clients on the eight Critical Nutrition Actions (CNAs) to improve food intake, improve practices that decrease vulnerability to infections, manage common conditions, prevent and avoid infections, and manage medication side effects. Group education on similar nutrition topics can be provided in clinic waiting rooms. Health care workers should refer clients who need further clinical assessment, treatment, or economic or social support to appropriate services and programmes in the area.

Purpose	Give participants skills to provide appropriate and effective nutrition education and counselling and to refer clients to other needed services.

Learning objectives

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

1. Define counselling and list the skills needed for effective counselling
2. List key considerations for planning a counselling session
3. Counsel on the Critical Nutrition Actions using the GATHER approach
4. Discuss Nutrition Education and Counselling Messages for PLHIV and TB clients
5. Arrange proactive linkages between clients and related services within facilities and communities

Materials needed

- Flipchart and stand
- Markers and tape
- LCD projector
- PowerPoint
- Ball
- Selection of nutrition education and counselling materials available in Ghana
- Hand soap, basin of water, and towel
- **Hand-outs**
  - One copy of **Module 3 Evaluation Form** in **Annex 3** for each participant

Materials needed

- **Participant Manual**
  - Critical Nutrition Actions with messages and explanations
  - Nutrition education topics for PLHIV
  - Conducting a nutrition counselling session
  - The GATHER approach to counselling
  - Checklist of recommended counselling techniques
  - Food and water safety and hygiene
  - Dietary management of HIV-related symptoms
  - Food and nutrition implications of HIV and tuberculosis medications
  - Community linkages
- **Participant Workbook (Exercises)**
  - Exercise 4. Case Study: Nortey, Narku, and Kande from Session 2.5
  - Bingo Sheet for Module 2 Review

Advance preparation

- Review PowerPoint slides for Module 3 (copy the information onto a flipchart if you do not have an LCD projector).
- Review Module 3 in the **Participant Manual.**
- Review the Case Study on Nortey, Narku, and Kande from Session 2.5
- If possible, find out what community services for economic strengthening, food security, home-based care, or support groups for PLHIV and TB clients are available in the area.

- Show **Slide 74**

Objectives (5 minutes)

- Present the module objectives on **Slide 75**.

Review (15–60 minutes)

*If participants have been trained in **Modules 1 and 2**, review **Module 2. Nutrition Assessment, Classification, and Care Plans**.*

- Say, 'We are going to play a game to review what we learned in **Module 2**. It will take about 10 minutes. Who is familiar with the game Bingo'?

- Ask participants to find **Bingo Sheet for Review of Module 2** at the end of Module 2 in the Participant Guide. Point out that the sheet has 9 boxes with an answer in each box.

- Ask participants to look at their sheets and check the correct answers to questions you will ask. The first participant who checks 3 boxes in a row (vertically, horizontally, or diagonally) should say 'Bingo!'
- Ask the questions in the box and pause for 10 seconds after each question to give participants time to find the answers. The answers are provided in the box below.

1. What is the MUAC cut-off for SAM in children 6–59 months old?

   ANSWER: < 11.5 cm

2. What is the criterion for admission to inpatient care management of SAM?

   ANSWER: SAM with no appetite or with medical complications

3. What specialised food product is given to clients under the Nutrition Care Plan for MAM?

   ANSWER: Fortified-Blended Food (FBF)

4. What is the nutritional status of a pregnant woman with a MUAC less than 19.0 cm?

   ANSWER: Severe acute malnutrition

5. What is the first stage in inpatient care management of SAM?

   ANSWER: Stabilisation

6. What anthropometric measure should be used for pregnant and post-partum women?

   ANSWER: MUAC

7. What are some signs of severe acute malnutrition?

   ANSWER: Bilateral pitting oedema and wasting

8. What are two signs of marasmus in children?

   ANSWER: Strong appetite and loss of fat on the buttocks and thighs

- Move on to **Session 3.1 Conducting a Nutrition Counselling Session**.

*If participants have not been trained in **Modules 1 and 2:***

- Explain the meaning of the following abbreviations and acronyms: CNAs (Critical Nutrition Actions) and SAM (Severe Acute Malnutrition).

- Health care workers who do nutrition assessment and classification of nutritional status should be trained in Module 2. If Module 3 is used for a refresher training on nutrition education and counselling, use the PowerPoint slides for **Modules 1 and 2** and **Participant Manual** to review the topics in the box below.

Module 1. Overview of Nutrition

- Causes of malnutrition: poor food availability, intake, digestion/absorption, utilisation, and excretion
- CNAs

Module 2. Nutrition Assessment, Classification, and Care Plans

- Classifications of nutritional status
- Nutrition Care Plans, especially counselling points

3.1 Conducting a Nutrition Counselling Session (45 minutes)

- Provide the participants with the definition of nutrition counselling on **Slide 76.**

BRAINSTORM: Difference between advising, educating, and counselling

- Ask participants: 'What is the difference between advice, education, and counselling?' Write the responses on a flipchart and compare them with the information in **Slide 77**.

BRAINSTORM: Skills that facilitate counselling

- Ask participants: 'What skills are needed to provide effective counselling?' Write the responses on a flipchart. Compare them with the information on **Slide 78.**
- Ask participants how they felt when someone told them to do something new or difficult (for example, giving up smoking) without discussing with them whether it was possible or asking how they felt about it.
- Emphasize that good counselling is non-judgemental, collaborative, and empathetic.
- Refer participants to **Table 3.1 Checklist for Recommended Counselling Techniques** in **Session 3.1** of the Participant Manual. Explain that the table lists counselling techniques that make clients comfortable, give them confidence to provide needed information, and help them identify feasible actions to improve their nutritional status.

BRAINSTORM: What should a counsellor think about when counselling a client?

- Ask participants: 'What should a counsellor think about when counselling a client?' Write the responses on a flipchart.
- Write the information in the box on a flipchart.

A counsellor has to keep in mind:

1. The client's problem or need
2. The client's context
3. The desired behaviour
4. The barriers to and motivations for the behaviour
5. The message to give the client
6. The encouragement the client needs to carry out and sustain the behaviour

- Compare the information in the box with the participants' responses.

- Ask participants why each point is important. Compare responses with the information in the next box and fill in gaps as needed.

Counselling considerations:

1. Clients are more receptive to counselling that addresses their real problems or felt needs than to general information.
2. Clients have to be able (economically, in the family context) to carry out recommended actions in order to change behaviour.
3. Clients need concrete recommendations (e.g., 'Eat three meals and two snacks a day') instead of general advice (e.g., 'Increase your energy intake').
4. Counsellors need to know the reasons for nutrition-related behaviours in order to help clients find realistic ways to improve them.
5. Counsellors should negotiate simple, doable actions with clients to try before the next visit.
6. Clients are unlikely to change behaviour and maintain improved practices unless they can see some benefits. Counsellors should find out what would motivate clients to change behaviour and tailor counselling to achieve that condition.

BRAINSTORM: Challenges in counselling PLHIV on nutrition

- Ask participants: 'What challenges might you face when counselling clients, including people living with HIV and/or TB clients, on nutrition?' List responses on a flipchart and compare them to the information on **Slide 79**.

BRAINSTORM: Addressing counselling challenges

- Referring to the flipchart responses just given by the participants, ask the group: 'How could you address those challenges?' Facilitate discussion for each challenge and compare participants' responses to the information on **Slide 80**.

- Refer participants to **Session 3.1 Conducting a Nutrition Counselling Session** in the Participant Manual. Explain that they can use this in the workplace to refresh their memories of the information discussed previously.

3.2 Nutrition Counselling Using the GATHER Approach
(2 hours)

BRAINSTORM: What are the steps in counselling?

- Write the letters *G A T H E R* vertically on a flipchart that all participants can see clearly. Ask participants what the initials might stand for in counselling.
- Write in the words, showing **Slide 81.**
- Refer participants to **Session 3.2 Nutrition Counselling using The GATHER Approach** in the Participant Manual. Explain that this Participant Manual contains more detailed information on the GATHER approach and steps that they can use in the workplace.

DEMONSTRATION: Counselling using the GATHER approach

- Refer participants again to **Exercise 4. Case Study: Nortey, Narku, and Kande** in **Session 2.5** of the Participant Manual. Ask one participant to read Part 3 aloud.
- With another facilitator, demonstrate counselling Nortey on his visit to the care and treatment clinic using the information in the case study and stressing the GATHER steps. Below is a suggested script for the demonstration.

Counsellor:	Hello, Nortey. Please sit down. How have you been feeling since you came here the last time?
Nortey:	I'm feeling a little better.
Counsellor:	Let's check your weight (weighs Nortey). I see you've gained 3 kg. That is good. You now weigh 47 kg. Are you still coughing?
Nortey:	No, and I haven't had any more diarrhoea.
Counsellor:	Let me examine you. I see you still have the problem with your skin. I think it's time to find out if you can start taking antiretroviral drugs, or ARVs. I'll need to ask you a few questions and do a few tests.
Nortey:	If I go on ARVs, what will I have to do?
Counsellor:	It helps the drugs work better if you eat three meals a day with foods from all the food groups and also eat two snacks a day. Of course, you shouldn't drink alcohol while you're taking ARVs.
Nortey:	That's a problem, because I don't have money to buy more food and I like to drink with my friends every day.
Counsellor:	I can help you plan some simple meals you can make with foods you can afford. Do you think you could try them?
Nortey:	Yes, I'll try.

Counsellor:	Good. When I see you again, we can talk about whether it was easy or difficult to buy and cook those foods. Now, what could you do about the drinking? Can you do other things with your friends, or maybe cut down the amount you drink?
Nortey:	My friends expect me to drink when I'm with them. Maybe I can go out with them only one night a week instead of every other night.
Counsellor:	That would be a good start. We can see how it went when you come back. I'm sure you'll see that you'll feel better if you eat a more balanced diet and drink less alcohol. Can you come back in 2 weeks?

- Ask participants what GATHER steps they observed.

ROLE-PLAY: Counselling using the GATHER approach

- Ask the participants to form their small groups and choose one person to role-play a client, one to role-play a counsellor, and one to observe the counselling.
- Make sure all participants can see the flipchart with the information in the box during this exercise.

A counsellor has to keep in mind:

1. The client's problem or need
2. The client's context
3. The desired behaviour
4. The barriers to and motivations for the behaviour
5. The message to give the client
6. The encouragement the client needs to carry out and sustain the behaviour

- Ask the observers to assess whether the 'counsellors' consider the information in this list and use the GATHER steps during the role-play.
- Refer the groups to Part 4 in **Exercise 4. Case Study: Nortey, Narku, and Kande** in **Session 2.5** of the Participant Manual. Explain that each group will role-play counselling Kande using the GATHER approach. Ask the groups to consider that Kande's son Narku is in outpatient treatment of SAM and to include any relevant CNAs in the counselling.
- Give the groups 10 minutes for the role-play. After 10 minutes, ask the group members to switch roles so that each group member has a chance to role-play as the counsellor. Set a time limit of 5 minutes for each role-play.
- Move around the groups to observe the role-plays and provide feedback as needed.

- After 30 minutes, stop the exercise and ask the observers to take 3 minutes to give feedback to the 'counsellors'.

GROUP WORK: Energiser

- Ask participants to form two lines facing each other, with about 1 m between them. Each line should have the same number of participants.
- Ask participants to hold their arms straight in front of them and overlap them by about a hand's length with the arms of the participants standing opposite them.
- Explain that one participant at a time will walk through the 'corridor' between the two lines, and the participants will raise and then lower their arms to create a 'wave' effect through which the single participant will walk.
- Ask one participant to peel off and walk down the 'corridor' between the two lines, then join in again at the end of the line. Continue until all participants have passed through the 'corridor'.
- As the group gets more confident, invite participants to walk fast and then run down the 'corridor' while the participants in the line raise their arms in time.
- To end, ask the participants to chop their arms up and down, stopping only to allow the participant through.

3.3 Nutrition Counselling Messages (1 hour)

- Explain that counsellors should not only give messages to clients but also explain the reasons for those messages. Refer participants to **Table 3.2 Critical Nutrition Actions for PLHIV and/or TB** in **Session 3.3** of the Participant Manual. Ask one volunteer to read a CNA message and another to read the explanation for the message.

GROUP WORK: RECALL GAME—Critical Nutrition Actions

- Ask participants to stand in a circle. Throw the ball to one participant. Ask her or him to name one of the CNAs and then throw the ball to another participant. That participant should give a key message related to that CNA and throw the ball to another participant.

- The next participant who catches the ball should give an explanation for that message.

- Guide participants in deciding whether the explanation conveys the benefit of the behaviour. When the message is satisfactory, ask the participant to throw the ball to another participant and continue in the same way until all the CNAs have been covered.

Explain that the participants will look more closely at counselling on the following specific CNAs.

2. Eat a variety of foods three times a day with at least two snacks between meals.
3. Drink plenty of boiled or treated water.
7. Prevent and seek early treatment of infections and advice on how to manage symptoms through diet.
8. Manage food and drug interactions and side effects through diet.

BRAINSTORM: Why should people eat a variety of foods from all food groups?

- Compare responses to the information in the box and fill in gaps as needed.

- People should eat a variety of foods from all food groups to get all the nutrients the body needs to stay strong and fight infection.
- No single food contains all the nutrients the body needs, except for breast milk for infants up to 6 months old.

BRAINSTORM: Food and water safety and hygiene

- Ask participants: 'Why are food and water safety and hygiene important, especially for people who are ill?' List responses on a flipchart and compare with the information on **Slides 84 and 85**.
- Refer participants to **Table 3.3 Food and Water Safety and Hygiene** in **Session 3.3** of the Participant Manual and ask volunteers to take turns reading the information aloud.
- Explain that hand washing is a simple action that everyone does every day but that it has to be done correctly to prevent infection. Demonstrate the correct hand washing technique using soap and a basin of water. Have another facilitator pour the water over your hands to rinse them.

BRAINSTORM: Hand washing

- Ask participants: 'When should you wash your hands?' List responses on a flipchart.

BRAINSTORM: Treating drinking water at home

- Ask participants: 'How do you treat drinking water at home?' List responses on a flipchart. Facilitate discussion about which methods (e.g., boil, filter, disinfect with water purification tablets or chlorine) clients could be counselled to use. Stress the importance of storing and serving water safely, because even boiled or treated water can become re-contaminated if it is touched by dirty hands or containers.

BRAINSTORM: Dietary management of HIV and TB-related symptoms

- Ask participants: 'What symptoms of illness do clients complain of?' Write the responses on a flipchart.
- Ask participants how they would counsel clients to manage these symptoms. Write the responses on a flipchart.
- Show **Slide 86.**
- If participants did not mention dietary management, ask them whether they think diet could help their clients relieve some of these symptoms. If so, ask for specific examples and list them on a flipchart.
- Refer participants to **Table 3.4 Dietary Management of HIV-Related Symptoms** in **Session 3.3** of the Participant Manual and compare the information with their responses.

BRAINSTORM: Food and nutrition implications of ART

- Ask participants: 'How can medications affect food intake and nutrition?' Write the responses on a flipchart.

- Ask participants what experience they have had with clients with HIV who present with side effects from ARVs or have difficulties taking ARVs with certain foods. Show **Slides 87 and 88**.

- Refer participants to **Food and Nutrition Implications of ART and TB Treatment** in **Session 3.3** of the Participant Manual. Ask participants to share any food-related problems their clients may have had with any of the medications listed in the table.

- Explain that health care workers should ask clients what medications they are taking during nutrition assessment so they can counsel them on any drug-food recommendations.

BRAINSTORM: What does 'Take this medicine on an empty stomach' mean?

- Compare responses with the correct answer: 'Take 1 hour before eating or 2 hours after eating'.

- Explain that some health care workers in Ghana tell patients to take drugs 'before eating or on an empty stomach'. Ask participants what these words mean literally in English ('Take before eating' and 'Take on an empty stomach').

- Explain that this could create a misunderstanding that could affect drug effectiveness (clients might think they should swallow the drugs and then eat immediately).

BRAINSTORM: What questions do clients have about vitamins, other supplements, or tonics that are said to improve immunity or cure diseases, even HIV or TB?

- Explain that vitamins and minerals, particularly from fruits and vegetables, can strengthen the immune system. However, advertisers of commercial supplements or herbal medicines often make false claims, and these substances can reduce the effectiveness of other medicines, including ARVs, or cause side effects.

- Show **Slides 89–92.**

3.4 Linking NACS with Community Services (1 hour)

- Introduce the aims of community outreach to improve access to NACS services by showing **Slide 93**.

BRAINSTORM: What could make it difficult for people to take advantage of facility-based NACS services?

- Ask participants: 'What could make it difficult for people to take advantage of facility-based NACS services?' Write the responses on a flipchart and compare them to the information in the box, filling in gaps as needed.

Obstacles to using NACS services

- Lack of awareness of the services
- Lack of awareness of signs of malnutrition
- Lack of knowledge of the consequences of malnutrition
- Distance to health care facilities
- Lack of nutrition knowledge among health care workers
- Negative view of health care facilities
- Poor integration of NACS into reproductive and child health, outpatient care management, and care and support services within DOTS centres and ART clinics
- Stigma associated with HIV and TB

- Show **Slide 94.**

BRAINSTORM: Addressing obstacles

- Ask participants: 'How can these obstacles be addressed?' Write the responses on a flipchart and compare them to the information in the box. Facilitate discussion.

Ways to increase uptake of nutrition services

1. Health education
2. Home visits and counselling/food demonstrations by community health workers, for example, in home-based care
3. Information provided to local leaders and media
4. Health and nutrition education materials (posters, brochures) about signs and risks of malnutrition
5. Improved integration of NACS into routine health care services at key contact points
6. Improved coordination with other primary health care programmes
7. Community outreach

- Show **Slide 95.**

DISCUSSION

- Facilitate discussion about communication and referrals between clinic services and community programmes and services. Do the participants ever refer clients to community services or receive referrals from community programmes? Have these linkages improved their clients' outcomes? What problems have participants found in such referrals, if any?

- Ask participants which community groups could help with nutrition screening and referral to clinic services. Compare responses to the information on **Slide 96**.

BRAINSTORM: Community case finding

- Ask participants: 'What is community case-finding for severe acute malnutrition?' Write responses on a flipchart and compare with the information in the box.

> Community case-finding is finding people with SAM in the community and referring them to treatment before they become so ill that they require expensive inpatient care.

BRAINSTORM: Home-based care

- Ask participants: 'What is home-based care?' Write responses on a flipchart and compare with the information in the box.

> Home-based care provides care and support outside the hospital to people with prolonged illness and their families.

- Explain that home-based care is part of the continuum of care for PLHIV and can be provided through clinics, Nongovernmental Organisations (NGOs), community support groups, or social welfare services.

BRAINSTORM: Nutrition services during home-based care

- Ask participants: 'What nutrition interventions can home-based care providers provide?' Write responses on a flipchart and compare them to the information on **Slide 97**.

- Orphans and Vulnerable Children (OVC) are vulnerable because of poor economic circumstances or exposure to HIV in their families or communities. They may or may not be HIV-positive.

BRAINSTORM: Nutrition services for OVC

- Ask participants: 'What nutrition interventions can be provided as part of care of most vulnerable children?' Write responses on a flipchart and compare them to the information on **Slide 98.**

BRAINSTORM: Clinical and community linkages

- Ask participants: 'How can health care workers help people in the community improve their nutritional status and link clinical NACS services with community services?' Write responses on a flipchart and compare them to the information in the box.

  - Learn about services for PLHIV and TB in the community
  - Refer clients to community health workers
  - Provide NACS information to clients in waiting rooms and examination rooms

- Refer participants to the last page of Module 3 in the Participant Manual, which outlines key points.

MODULE 3: KEY POINTS

- Nutrition education, advice and counselling are each different and are used in combination in providing in the management of PLHIV or TB.
- Being mindful of factors such as environment, client experience and expectations, as well as addressing other challenges is important in providing good nutritional counselling.
- The GATHER approach is one form of counselling commonly used in the nutrition management of people living with HIV or TB.
- The eight CNA are:
  1. Get weighed regularly and have weight recorded.
  2. Eat more and varied foods (especially foods rich in energy) 3 times a day with at least 2 snacks between meals.
  3. Drink plenty of clean and safe water.
  4. Live positively: Avoid stressful situations, alcohol, tobacco, recreational drugs, and coloured and sweetened drinks.
  5. Maintain good hygiene and sanitation.
  6. Engage in physical activity (exercise) as often as possible.
  7. Prevent and seek early treatment for infections. Seek dietary advice on managing symptoms.
  8. Take medicines and food as advised by your health care provider.
- Establishing linkages between clinical and community-based services is important in establishing continuum of care in the on-going management of PLHIV or TB.

Discussion (10 minutes)

- Allow time for questions and discuss any issues that need clarification.
- Give each participant a copy of the Module 3 Evaluation Form found in **Annex 3**. Ask participants to fill them out and give them to you before they leave.

4 Specialised Food Products to Treat Acute Malnutrition

MODULE 4. SPECIALISED FOOD PRODUCTS TO TREAT ACUTE MALNUTRITION

9 hours

Some malnourished clients can improve their nutritional status through the food-based approach—eating a better and more varied diet. SAM clients, however, need treatment with specially designed Ready-to-Use Therapeutic Food (RUTF) and supplementary food such as Fortified-Blended Food (FBF). For moderately malnourished clients, the food-based approach can be combined with prescription of supplementary food. Health care workers need to know the clinical and anthropometric entry and exit criteria for nutrition therapy with these products and the duration of treatment. They also need to know how to collect and report data on specialised food products so that health care facilities can order needed quantities and avoid stock-outs.

Purpose	Introduce participants to the purpose, use, and management of specialised food products for clinically malnourished clients, including determining client eligibility and duration of treatment and managing commodities.

Learning objectives	By the end of this module, participants will be able to: 1. Describe the importance of nutrition therapy for acutely malnourished clients 2. Describe the purpose and types of specialised food products 3. Discuss NACS client flow and integration of services 4. State entry and exit criteria for specialised food products 5. Describe the purpose of a health logistics system 6. List the primary activities in the management of health commodities 7. Describe the importance of the Logistics Management Information System (LMIS) in the logistics cycle 8. Identify the logistics data which is used in the Worksheet for Setting Maximum Stock and Reorder Quantities 9. Identify the time period for completing the Worksheet 10. Determine the maximum stock and reorder quantities, and the emergency order point quantity for health commodities in their store 11. Apply the calculated stock quantities in the inventory management of health commodities 12. Distribute the Worksheet to the appropriate levels 13. Determine quantities to be ordered in order to reach the maximum

Learning objectives

14. Determine whether to place an order or not
15. Prepare a report on monthly consumption
16. Correctly complete specialised food product forms and registers
17. Order and handle specialised food products for health care facilities

Materials needed

- Flipchart and stand
- Markers and tape
- LCD projector
- PowerPoint
- At least 10 packets each of RUTF and FBF used in Ghana
- Utensils and cooker to demonstrate preparation of the FBF
- Bottles of clean (boiled or treated) water for participants to drink
- Ball
- **Hand-outs**
  - Specialised Food Products Monthly Consumption Report form (6 copies)
  - Worksheet for Setting Maximum Stock and Reorder Quantities
  - One copy of **Module 4 Evaluation Form** in **Annex 3** for each participant
  - Job Aid: NACS Protocol
- **Participant Manual**
  - How to Conduct an RUTF Appetite Test (Session 2.2)
  - Nutrition Care Plans 1 and 2 for Children and Adults with SAM (Session 2.6)
  - Nutrition Care Plans 3 and 4 for Children and Adults with MAM (Session 2.6)
  - Nutrition Care Plans 5 and 6 for Children and Adults with Normal Nutritional Status (Session 2.6)
  - NACS Services
  - Specialised Food Products in Ghana
  - Admission and Discharge Criteria for NACS in Ghana
- **Participant Manual Exercises**
  - Exercise 4. Case Study: Nortey, Narku, and Kande (Session 2.5)
  - Exercise 8. Client Flow, Staff Roles, and Integration of Services
  - Exercise 9. Specialised Food Products for NACS

Advance preparation

- Review PowerPoint slides for Module 4 (copy the information onto a flipchart if you do not have an LCD projector)
- Review **Participant Manual, Module 4**
- Review Exercise 4. Case Study: Nortey, Narku, and Kande

- Show **Slide 99**.

Objectives (5 minutes)

- Present the module objectives on **Slide 100.**

Review (15–60 minutes)

*If participants have been trained in **Modules 1 to 3**, review **Module 3. Nutrition Education, Counselling, and Referral**:*

- 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, then throw the ball back to you. Continue throwing the ball until participants have named all the steps in the GATHER approach.

- Next throw the ball to a participant and ask, 'What is one Critical Nutrition Action?' As soon as the participant answers, ask her or him to throw the ball to another participant quickly and ask, 'What is another Critical Nutrition Action?' Ask the participants to continue until all eight CNAs have been named. Participants who do not know the answers are 'out' and should cross their arms and keep them crossed.

- Go directly to **Session 4.1 NACS Services** in the Facilitator Guide and Participant Manual.

*If participants have not been trained in **Modules 1 to 3**:*

- Explain that this module is for health care workers who manage specialised food products and that the review of the content of Modules 1 to 3 is not a substitute for training in those modules.

- Explain the meaning of the following abbreviations and acronyms: NACS (Nutrition, Assessment, Counselling, and Support), CNAs (Critical Nutrition Actions), SAM (severe Acute Malnutrition), MAM (Moderate Acute Malnutrition), BMI (Body Mass Index), MUAC (Mid-Upper Arm Circumference), RUTF (Ready-to-Use Therapeutic Food), and FBF (Fortified-Blended Food).

- Use the PowerPoint slides for **Modules 1 to 3** and the **Participant Manual** to review the topics in the following box.

Module 1. Overview of Nutrition

- Causes of malnutrition: poor food availability, intake, digestion/absorption, utilisation, and excretion
- CNAs

Module 2. Nutrition Assessment, Classifications, and Care Plans

- Classification of nutritional status
- Nutrition Care Plans, especially counselling points

Module 3. Nutrition Education, Counselling, and Referral

- Definition of counselling
- Counselling skills
- The GATHER approach to counselling
- A balanced diet
- Food and water safety and hygiene

4.1 NACS Services (30 minutes)

PRESENTATION

- Slow **Slide 101** to explain the components of NACS services.

- Refer participants to **Session 4.1 NACS Services** in the Participant Manual. Ask volunteers to read the NACS activities aloud. Facilitate discussion about why each component is important to promote good nutrition and prevent and treat acute malnutrition.

BRAINSTORM: NACS Target Groups

- Ask participants: 'What clients does NACS target?' List responses on a flipchart. Compare the responses with the information on **Slides 102 and 103**.

4.2 NACS Client Flow and Staff Roles (1 hour)

GROUP WORK

- Distribute one set of index cards to each group.
- Assign three groups to work on reproductive and child health/PMTCT services and three groups to work on DOTS services and ART clinic services.
- Ask the groups to identify the steps a client goes through in their clinics, write each step on a separate card, and number the steps in order. Give a time limit of 10 minutes.
- After 10 minutes, ask the groups to tape their cards on a flipchart in front of the room. Once all of the cards are posted in order, facilitate discussion about whether all of the steps are relevant and in the right sequence. The steps and sequence may differ from one facility to another.
- Next, ask the groups to identify a NACS activity that might be provided at each step (e.g., nutrition assessment, dietary assessment, clinical assessment, prescription of specialised food products). They should write these interventions on cards. Give a time limit of 10 minutes.
- After 10 minutes, ask the groups to tape the NACS intervention cards on the flipchart under the relevant steps. Once all the cards are posted in order, facilitate discussion about whether all of the actions are appropriate and in the right sequence.
- Next, ask the groups to write the titles of the staff responsible for each intervention on cards. Give a time limit of 10 minutes.
- After 10 minutes, ask the groups to tape the NACS staff cards on the flipchart, with the titles under the relevant activities. Once all of the cards are posted in order, facilitate discussion about challenges participants face or would face in their workplaces in conducting the nutrition care activities.
- Ask the groups to draw the arrangement of their cards in the Participant Manual under **Exercise 8. Client Flow, Staff Roles, and Integration of Services** in **Session 4.2**. Remind them to include the NACS activities and staff titles for each step. Give 10 minutes for this activity. Then ask each group to present its results.
- Explain that this module focuses on prescribing, monitoring, and recording specialised food products to manage SAM and MAM.

4.3 Purpose and Types of Specialised Food Products to Manage Acute Malnutrition (2 hours)

PRESENTATION

- Show **Slide 105** on specialised food products for acutely malnourished people. Ask a volunteer to read aloud the last point on the slide. Stress that specialised food products are **prescribed as medicine** according to a standard protocol and strict eligibility criteria to treat a serious medical condition and are not intended to supplement a family's diet.
- Refer participants to **Specialised Food Products in Ghana** in **Session 4.3** in the Participant Manual. Ask volunteers to take turns reading each section aloud.
- Show **Slide 106** to explain specialised food products.
- Facilitate discussion about how specialised food products can improve adherence to medication (they can improve nutrition to make medicines more effective and be an incentive for clients to return for follow-up visits).
- Facilitate discussion about how specialised food products can improve birth outcomes and child survival (a well-nourished woman has a lower chance of giving birth to a low-birth-weight infant, and children with SAM can be treated and their caregivers counselled to maintain their improved nutritional status).
- Reinforce the message that therapeutic and supplementary foods are not appropriate for infants under 6 months old.

BRAINSTORM: How NACS differs from other food supplementation

- Ask participants: 'How are specialised food products different from other food support?' List responses on a flipchart and compare them to the information on **Slide 107.** Stress that specialised food products are special formulations prescribed as medicine according to a standard protocol and have strict eligibility criteria for individual clients to treat acute malnutrition, while food support is usually staple foods given to households to improve food security. Facilitate discussion.
- Show **Slide 108** on the specialised food products used in NACS services in Ghana.

GROUP WORK

- Distribute one packet of RUTF and one packet of FBF to each group. Also distribute a cooker, pot, spoons, and water to each group.
- Ask the groups to open their packets of RUTF. Instruct **all participants** to taste the food. Ask them to consider the flavour, taste, texture, and whether or not they like the food.

- Then ask the groups to prepare the FBF, reading aloud the directions on the packet. Move around the groups to make sure the food is prepared correctly. After the food is prepared, give each participant a taste. Again, ask them to consider the flavour, taste, texture, and whether or not they like the food. **All participants must taste the food**.

- Refer the groups to **Exercise 9. Specialised Food Products for NACS** in **Session 4.3** of the Participant Manual. Ask the groups to fill out the matrix by referring to the food packages and to answer the three questions at the bottom of the page. Give the groups 10 minutes for this activity.

- After 10 minutes, ask one group to present its results. The answers to the questions in the matrix are shaded below. The others will have different responses based on each participant's experience.

Exercise 9. Specialised Food Products for NACS

Question	RUTF	FBF
1. Name of the food	Plumpy'Nut®	(depends on brand)
2. Number of grams in the packet	92	300
3. Total calories per packet	500	1,350 (450 kcal per 100 g)
4. Micronutrients	23 (13 vitamins and 10 minerals)	24 (12 vitamins and 12 minerals)
5. Level of Recommended Dietary Allowance (RDA) of most of the micronutrients	Approximately 1	Between 0.5 and 1.2
6. Is water needed for preparation?	No	Yes
7. Is water needed for consumption?	Yes	No
8. Taste, consistency, and texture	(up to each participant)	(up to each participant)
9. Expiry date	(depends on the package)	(depends on the package)

- Ask volunteers to read their answers to the three questions under the table in Exercise 9.

- Facilitate discussion about challenges clients might face in preparing and eating specialised food products. Fill in gaps as needed with the points in the box.

- Clients may not have access to clean, safe (boiled or treated) water to drink with the RUTF or use to prepare the FBF.
- Clients may not like the taste or texture and may not want to eat the entire ration.
- Clients may want to share their rations with others in the family, depriving themselves of the required nutrients to treat their malnutrition.

GROUP WORK: ENERGISER

- Ask participants to stand up and form a circle. Teach the participants to chant the words 'Sagidi sagidi sapopo'. Let them practice three or four times. Join the circle. Explain that you will do different actions as the group chants 'Sagidi sagidi sapopo'. The person to your left should copy your action and the person to her or his left should follow and so on until you change actions. Ask the participants to start chanting. Snap your fingers, clap your hands, whistle or stomp your feet to the rhythm of the chant, allowing enough time for at least half the circle to copy the action before changing.

4.4 Admission and Discharge Criteria for NACS in Ghana

(45 minutes)

REVIEW: Classification of nutritional status

- Remind the groups that bilateral pitting oedema, weight, height, BMI, and MUAC are used to assess nutritional status.
- Review the classifications of nutritional status: SAM with or without medical complications, MAM, normal nutritional status, and overweight and obesity.

GROUP WORK

- Refer the groups to **Session 4.4 Admission and Discharge Criteria for NACS in Ghana** in the Participant Manual.
- Ask volunteers to read the admission criteria (cut-offs) for each group of clients.
- **Stress that any client, adult or child, with bilateral pitting oedema should be classified automatically as having SAM with medical complications, regardless of anthropometric measurements**.
- Assign the following NACS target groups to each of the participant groups:
  - Groups 1 and 2: Acutely malnourished children
  - Groups 3 and 4: Acutely malnourished non-pregnant, non-lactating adults
  - Groups 5 and 6: Acutely malnourished pregnant/post-partum women
- Ask each group to identify any challenges they might find in using the entry criteria (e.g., clients who do not know their age or pregnancy status) and ways to address these challenges. Give the groups a time limit of 20 minutes. Then ask each group to present its results.
- Facilitate discussion and answer questions as needed.

4.5 Managing Clients on Specialised Food Products (2.5 hours)

- Show **Slide 111** on the steps to follow for prescribing and monitoring specialised food products. Keep this slide in view.

- Point out bullet 1 on **Slide 111**: 'Classify the client's nutritional status'

BRAINSTORM: Classifying nutritional status

- Ask participants: 'What anthropometric measurements and indices can be used to classify a client's nutritional status?' Write responses on a flipchart and compare to the information in the box. Fill in gaps as needed.

  - Weight
  - Height
  - MUAC for children 6 months to 14 years of age, adolescents 15–17 years age, and pregnant and post-partum women
  - BMI for non-pregnant/post-partum adults

- Point out bullet 2 on **Slide 111**: 'Conduct a medical assessment'

PRESENTATION: Medical assessment

- Explain that clients with SAM should receive a medical assessment. The medical assessment consists of a medical history and physical examination.

- Explain that taking a medical history should include asking about breastfeeding history (for children up to 6 months of age), immunisation status, foods and fluids taken in the past few days, and duration and frequency of vomiting or diarrhoea.

- Explain that the physical examination includes assessing the client for bilateral pitting oedema and other medical complications and doing an appetite test.

BRAINSTORM: Medical assessment

- Ask participants: 'What medical complications should health care workers look for in severely malnourished clients?' Write responses on a flipchart and compare with the information in the box.

- Bilateral pitting oedema
- Wasting
- Anorexia or poor appetite
- Persistent diarrhoea
- Nausea or vomiting
- Severe dehydration
- High fever (> 38.5° C)
- Difficult or rapid breathing or increased pulse rate
- Convulsions
- Severe anaemia
- Mouth sores, thrush, or difficulty swallowing
- HIV
- Hypothermia (temperature < 35° C)
- Hypoglycaemia
- Lethargy or unconsciousness
- Extreme weakness
- Opportunistic infections
- Extensive skin lesions
- Eye signs of Vitamin A deficiency

- Explain that health care workers can ask the client or caregiver about medical complications or refer to the client's medical records.

BRAINSTORM: Appetite test

- Ask participants: 'Why should clients be given an appetite test?' Compare responses with the information in the box.

Severe acute malnutrition, infections, and some medications can cause loss of appetite. Clients with SAM must be given an appetite test to find out whether they are able to eat RUTF and can be treated on an outpatient basis. If not, they have to be treated in inpatient care.

- Refer participants to **How to Conduct an RUTF Appetite Test** in **Session 2.2** of the Participant Manual. Ask volunteers to read each step aloud.
- Ask volunteers to repeat the amounts of RUTF clients must eat to pass the appetite test.
- Explain that if the appetite test is inconclusive, the client should always be referred to inpatient care until appetite has been restored.
- Explain that appetite should be tested on admission and at each follow-up visit.

PRESENTATION: Classifying malnutrition

- Point out bullet 3 on **Slide 111**: 'Decide whether to treat the client as an outpatient or refer to inpatient care'

- Explain that a client with SAM and with medical complications and no appetite should be referred automatically to inpatient care management of SAM. Inpatient care management is done in a health facility that provides 24-hour care. Inpatient care management is provided according to the Interim National Guidelines for CMAM and the Ghana Training Course on Inpatient Management of SAM.

- Explain that a client with SAM and no medical complications who passes the appetite test can be managed as an outpatient. Generally, fewer than 20% of children with SAM have medical complications that need inpatient care. Most clients with SAM are treated as outpatients.

GROUP WORK

- Refer the groups to **Exercise 4. Case Study: Nortey, Narku, and Kande** in **Session 2.5** of the Participant Manual. Ask the groups to fill out three copies of the **NACS Client Management Form** in **Session 5.2**—one for Nortey on his first clinic visit (Part 1), one for Narku on his first clinic visit (Part 2) and the third for Kande on her first visit (Part 5). Encourage the groups to use **Tables 2.5 and 2.6 Algorithms for Assessing Malnutrition in Children and Adults** and the **Nutrition Care Plans** in **Module 2** of the Participant Manual to find the information.

- Explain that the case study does not include enough information to fill in all the columns for these three clients.

- Move among the groups to make sure the forms are filled in correctly.

- Ask one group to present its results and ask the other groups to make corrections as needed.

GROUP WORK

- Refer the groups to **Session 4.4 Admission and Discharge Criteria for NACS in Ghana** and to **Session 2.6 Nutrition Care Plans for PLHIV and/or TB Clients** in the Participant Manual. Assign to each group Nutrition Care Plans as follows:
  - Groups 1 and 2: Nutrition Care Plan for SAM with medical complications
  - Group 3 and 4: Nutrition Care Plan for SAM with no medical complications
  - Group 5: Nutrition Care Plan for MAM
  - Group 6: Nutrition Care Plan for adults and children with normal nutritional status

- Ask the groups to find the amounts of specialised food products to prescribe to clients on entry in each Nutrition Care Plan.

- Ask a participant from each group to write the name of its Nutrition Care Plan on a flipchart and the amount of specialised food products to prescribe to clients (the group with Nutrition Care Plans 5 and 6 should write 'None').

ROLE-PLAY: Counselling the client or caregiver on how to use specialised food products

- Refer the groups to the job aid in **Annex 2. RUTF Look-up Tables and Key Messages** in the Participant Manual (**Annex 6 in this Facilitator's Guide**).
- Ask each group to use the job aid to role-play counselling a caregiver on how to feed RUTF to a child who has been prescribed RUTF for outpatient treatment of SAM. One group member should role-play the client, another should role-play the counsellor, and the others should observe and comment on the counselling. Give the groups 10 minutes for this activity. Then ask one group to share its experience with the role-play.
- Ask participants whether they have any questions about the information or pictures on the job aid.
- Refer the groups to the participants' manual session **4.3. Purpose and Types of Specialised Food Products to Manage Acute Malnutrition**. Refer participants on the **Fortified-Blended Flour** and ask them to read the box silently. Ask participants whether they have any questions about the information.
- Refer the groups to **NACS Environmental Issues** in **Session 4.5** of the Participant Manual.
- Ask each group to use the information on **NACS Environmental Issues** in **Session 4.5** to role-play counselling a caregiver on how to store and dispose of specialised food product packets. One group member should role-play the client, another should role-play the counsellor and the others should observe and comment on the counselling. Give the groups 10 minutes for this activity. Then ask one group to share its experience with the role-play.
- Ask participants whether they have any questions.

BRAINSTORM: What should clients do with empty specialised food product packages?

- Explain that the plastic packaging of specialised food products is not biodegradable and will pollute the environment if not disposed of appropriately or recycled. Point out the text in **Session 4.5** for **NACS Environmental Issues** in of the Participant Manual that asks clients to bring back the empty packets when they return to pick up their next prescription. The health care facility should dispose of the empty packets in the incinerator or recycle them.
- Point out **Slide 112**.

GROUP WORK

- Divide the participants into small groups of about 5–6 people.
- Ask the groups to refer again to **Exercise 4. Case Study: Nortey, Narku, and Kande** in **Session 2.5** of the Participant Manual and read Part 7. Based on the information in the case study, ask: 'Can Narku exit from specialised food products? If not, why not? If yes, why?' (ANSWER: Yes, because he is now 57 months old and his MUAC is 12.9 cm, which falls in the green section in **Table 2.5 Algorithm for Assessing Malnutrition in Children** in **Session 2.3** in the Participant Manual.
- Ask: 'Can Kande exit from specialised food products? If not, why not? If yes, why?' (ANSWER: No, because her MUAC is now 21.5 cm, which falls in the moderate category for pregnant/lactating women in **Table 2.6 Algorithm for Assessing Malnutrition in Adults** in **Session 2.3** in the Participant Manual.

REVIEW

- Hand out the job aid **Nutrition Assessment, Counselling, and Support (NACS) Protocol**. Go over the steps for managing clients in outpatient treatment of SAM or MAM using specialised food products.

4.6 NACS Commodity Management (1 hour)

- Show **Slides 113** and **114** on NACS Commodity Management.

PRESENTATION: Purpose of a logistics system

- Explain that in this session, participants will be learning about the purpose of the logistics system and the activities in logistics management.

- Comment that looking at a chop bar or a restaurant will give us a good understanding of a logistics system.

BRAINSTORM: The 'chop house'

- Show participants the diagram in **Slide 115** showing the kitchen, a waiter carrying a tray of food, and a table with customers. Ask participants in what way do they think a chop bar is like a logistics system? Comment that in a chop bar the kitchen serves as the **central warehouse**, the waiters and waitresses are the **transportation**, and the tables are the **service delivery points**.

- A chop bar logistics system has specific purposes—not only do customers expect certain things from a chop bar, but the chop bar owners understand these expectations. Consequently, they make every effort to ensure that not only do their customers receive the things they expect, but that the customers want to return again to the same chop bar (customer service).

- Ask participants to think back to the experiences they have had eating in chop bars. Ask for examples of the types of things they expected from their chop bar experiences and write their ideas on a flip chart. Examples will probably include the following: good quality food, fast and efficient service, friendly service, reasonable price, food served within reasonable length of time, and fresh food.

- Ask participants how these same expectations relate to the logistics system for public health commodities. Discuss briefly and then explain that the purpose of a logistics system can be summed up by the 'Six Rights'. Show **Slide 116.**

- Comment that they will now begin studying logistics systems. Logistics systems vary in size, some vertical systems handle only a few products while larger integrated systems may manage 300 items or more, including contraceptives and essential drugs. Briefly discuss the number and types of products managed in the Ghana system. Summarize by noting that a logistics system ensures that the clients have access to the products they want and need.

PRESENTATION: Logistics cycle

- Comment that, over the years, international logistics experts have developed a systematic approach to describe the activities of a logistics system. It is called the **Logistics Cycle**. Display the **Logistics Cycle** on **Slide 117** and outline that participants may be familiar with other diagrams that show the components of a logistics system. Comment that this cycle is applicable to logistics systems no matter what products or how many products are managed.

- Ask participants what they notice about the cycle. Point out that 'Serving Customers' is at the top of the cycle because it is the ultimate purpose of all logistics activities. Briefly review the other activities in the cycle with participants.

- Mention that this training will concentrate on the Logistics Management Information System (LMIS) component of the logistics cycle, but make a quick reference to 'Quality Monitoring', 'Policy', and 'Adaptability' of the logistics cycle.

  - Quality monitoring is an essential function at all stages of the logistics cycle. Constant corrective action based on current, accurate information is the key to success.
  - Point out how the logistics cycle works within a policy environment. Different policies may affect the whole functioning of the logistics system, or a part of the system. Ask participants to name a policy that would affect the logistics system. Review each box and discuss the effect of policies on them.
  - Explain the concept of adaptability—that the entire logistics system has the ability to successfully adapt to changes. This is the capability to obtain necessary resources, either internally or externally, to supply growing demand.
  - The LMIS is shown at the centre of the cycle because it is the engine which drives the logistics system. The information the LMIS gathers allows managers to make decisions. Every function in the logistics cycle needs accurate information in order to work. Without a properly functioning LMIS, the distribution system cannot work properly.

- Mention that the other components—inventory, distribution, customer service, etc.—are important, but they will not be addressed in the training. This module will be concentrating on the LMIS which is the engine that runs the logistics system.

- **Show Slide 118** and explain that since much of this workshop will focus on the LMIS they will now spend a few minutes focusing on this important component of the logistics cycle.

GROUP WORK

- Ask participants to take out a piece of paper and start listing the decisions that they make when managing health commodities. Tell them they have 2 minutes. Call time after 2 minutes and ask participants to share some of the decisions they make with the

group. Note answers on the flip chart. Types of decisions might include how much to order? When to order? Do I need to take any action? How can I improve the system?

- Explain that the purpose of the LMIS is not to generate paper but to improve management decisions that govern the logistics system. Explain that the only information that should be gathered is information which supports the specific decisions which need to be made. Tell participants that to make these decisions an LMIS must collect three essentials data items.

PRESENTATION: Essential data items

- Show **Slides 118–121.**

- Emphasize that the following are the three MINIMAL and ESSENTIAL items that need to be collected to run any supply system.

  - Stock on Hand: Quantities of usable commodities during a point in time.
  - Rate of Consumption: The average quantity of commodities dispensed to users during a particular time period.
  - Losses/Adjustments: Losses are the quantity of commodities removed from the distribution system for any reason other than consumption by clients (e.g., losses, expiry, damage). Adjustments may include receipt or issue of supplies to/from one facility to another at the same level (e.g., a transfer) or a correction for an error in counting. Losses/adjustments may therefore be a negative or positive number.

- Briefly discuss each and relate them to the types of decisions participants shared. Especially note that losses/adjustments may be positive. Note that adjustments are used to avoid double-counting, such as when a clinic issues supplies to transfer to another clinic, these should not be counted under consumption.

- Tell participants that they will see how these data items are used when they learn to complete the three forms they will be learning in the workshop.

- Mention that information is the engine that drives the logistics management—without information, the logistics system would not run smoothly. Emphasize the relevance of the use of logistics data for making decisions about activities within the logistics cycle.

- Conclude by saying that logistics data are collected and analysed daily to assess stock status, analysed and used monthly or quarterly to determine resupply or order quantities, and used annually to conduct quantification exercises. Ultimately, logistics data is needed to make informed decisions that will improve customer service.

PRESENTATION: Inventory control/management system

- Inform participants that in order to ensure that service delivery points have enough commodities on hand to meet their client needs, facilities must complete a variety of

're-supply activities' on a regular basis. One important task is to set and maintain maximum and reorder levels.

- Tell participants that the Maximum Stock Level is the maximum quantity of a product a facility should have (facility should not stock beyond this level). The Reorder Level is the quantity that is used to determine if an order needs to be placed or not. The Maximum and Reorder Levels are based on recent consumption. A worksheet is provided to calculate the Maximum Stock and Reorder Levels.

- The **Worksheet for Setting Maximum Stock and Reorder Quantities** is used to determine the quantities of stock to have on hand (the Maximum Stock Level) and the point when a commodity needs to be ordered (the Reorder Level). Maximum Stock and Reorder Levels are calculated for each product the facility keeps and is expressed in units (sachets of Plumpy'Nut®, FBF, etc.). The worksheet shows all of the information that is needed to calculate these quantities.

- Explain that the Worksheet they will be learning provides commodity managers with important information to help ensure that they always have the right quantities of commodities on hand. Point out that the Worksheet helps them determine three items:

  – Maximum Stock Quantity
  – Reorder Quantity
  – Emergency Order Point

- Explain the meaning of the above terms as stated below:

  – Maximum Stock Quantity is the highest quantity of stock a facility should have on hand at any time.
  – Reorder Quantity is the quantity that is used to determine if an order needs to be placed or not.
  – Emergency Order Point is the point that triggers the need for an emergency order should any product reach this quantity any time during the month.

- Tell the participants they are now going to learn how to complete the Worksheet and determine the Maximum, Reorder, and Emergency Order Quantities. Note that although this activity focuses at the health facility level, the same skills are used when doing this same task at the Regional Medical Store (RMS) level.

GROUP WORK: Completing the worksheet

- Ask participants to turn to **Table 4.2 Job Aid for Completing the Worksheet** in **Session 4.6** in the Participant Manual. Explain that they will be using the **Worksheet for Setting Maximum Stock and Reorder Quantities** in **Session 4.6** in their Participant Manual, which has information on assumed consumption.

- Show **Slide 122** and show the actual Worksheet. Note that when participants first start using the system they should complete the Worksheet, and they should complete a new Worksheet again every six months.

- Ask a volunteer to start reading aloud the steps in the job aid for completing the worksheet. Explain that steps 1 and 2 have been completed in their Worksheet.

- Demonstrate how to complete the Worksheet by having a participant read aloud the remaining steps in the job aid for completing the Worksheet while making the calculations to complete the Worksheet (the completed worksheet is on the next page). Ask the other participants to do this along with you.

- Ask participants if they understood the steps for completing the worksheet. Tell participants that the determined quantities must be written on the corresponding bin card. Discuss briefly.

Worksheet for Setting Maximum Stock and Reorder Quantities (*to be completed every 6 months*)

Facility Name: **Fortuna Health Centre** District: **Manya Krobo** Region: **Eastern**

Product	A Total Dispensed Past 6 Months (smallest unit of package)	B Average Monthly Consumption (A / 6)	C Maximum Stock Quantity (B x 3)	D Reorder Quantity (C / 2)	E Emergency Order Point (D / 3)
Ready-to-Use Therapeutic Food (RUTF)	**8050**	**1342**	**4026**	**2013**	**671**
Fortified-Blended Flour (FBF)	**7200**	**1200**	**3600**	**1800**	**600**
Combined Mineral and Vitamin Mix (CMV)	**5600**	**933**	**2799**	**1400**	**467**
Therapeutic Milk for Treatment of SAM (F-75)	**1450**	**242**	**726**	**363**	**121**
Therapeutic Milk for Treatment of SAM (F-100)	**8460**	**1410**	**4230**	**2115**	**705**
Rehydration Solution for Malnutrition (ReSoMal)	**5800**	**967**	**2901**	**1451**	**484**

Copy the Maximum Stock Quantity; Reorder Quantity, and Emergency Order Point in the appropriate box on the Bin Card for each product

Completed by: _____ Title: _____ Date: _____

Verified by: _____ Title: _____ Date: _____

NB: The worksheet must be reviewed by the District Supervisor.

REVIEW: District worksheet

- Explain that the next step after completing the Worksheet and noting the quantities on the Bin Cards is to have the district or facility supervisor review the Worksheet with you.

- Ask participants what they think the supervisor should be looking for. Their answers should include:

  - Accuracy of the math
  - Completeness of the Worksheet
  - Timeliness of the Worksheet (when was the last time it was completed; schedule the next time it is due)
  - Anything that may seem unusual about the consumption numbers

- Now ask for volunteers to take turns reading the remaining steps in the job aid.

- Answer any questions participants might have. Then ask them the following questions as a review.

  - 'How many copies of the Worksheet need to be completed and what happens to the copies?'

    ANSWER: Two; one stays with the health facility, one stays with the district.

  - 'What happens if they have to place an emergency order in two consecutive months?'

    ANSWER: They must redo the Worksheet to recalculate their Maximum Stock Quantity, Reorder Quantity, and Emergency Order Point.

  - 'How many months of data are used to calculate the Average Monthly Consumption and where does that data come from?'

    ANSWER: 6 months of data if you have it, or as many months as you have; from the issues on the Bin Card.

- Emphasize the importance that they should always use the latest 6 months of data. Answer any remaining questions.

PRESENTATION: Deciding to place an order

- Tell participants that they will next be learning about the process of ordering commodities. Tell participants that the decision to place an order or not is dependent on whether the **usable stock on hand at the end of the month is *more than*, *equal to*, or *less than* the reorder quantity** determined earlier when the worksheet was prepared.

- If the usable stock on hand is ***more than*** the reorder quantity, then the commodity does not need to be ordered.
- If the usable stock on hand balance is ***equal to*** or ***less than*** the reorder quantity, then the commodity needs to be ordered.

PRESENTATION: Determining quantities to reach maximum stock

- For each product you need to order, subtract the usable stock on hand from the maximum stock quantity. This information can be found from the Bin Card for each commodity. The difference between the usable stock on hand from the maximum stock quantity is the quantity that must be ordered to reach maximum stock. Indicate that at all times, facilities must order quantities that will enable them reach the determined maximum stock level.
- Tell participants that once quantities to be ordered are determined, the person responsible for placing orders must use the appropriate form to make a requisition.
- The agreed form for requisitioning is the Report, Requisition, Issue and Receipt Voucher (RRIRV) which is a combined form that a health facility uses to report stock status and consumption and to order products from the RMS.
- Because the RRIRV is used for both reporting and ordering, every facility should complete and submit the RRIRV every month, even if no products are actually being ordered. The RMS will need the reported data to inform its re-supply decisions and ensure that it has enough commodities on hand to meet the needs of the health facilities.
- In addition, facilities must complete the NACS Monthly Reporting Form (discussed in Module 5) for submission to the Nutrition Department of GHS at the end of every month.

BRAINSTORM: Ordering Specialized Food Products

- Ask participants: 'How can health care facilities know how much ready-to-use therapeutic food or fortified-blended food to order?' Write responses on a flipchart and compare with the information in the box.

  - By multiplying the number of clients by age and nutritional status during the time period by the approximate amounts of specialised food products given per client
  - By estimating from the prescriptions written during the period
  - By using monthly reports

- Refer participants to the **Specialised Food Products Monthly Consumption Report (MCR)** in **Session 4.5** of the Participant Manual and show **Slide 123**. Explain that the site pharmacist will fill this form out at the end of every month to send to the Medical Stores Department (MSD) to order specialised food products for the following month.

PRACTICE: Using the Specialised Food Products Monthly Consumption Report (MCR) Form

- Ask participants to take turns reading the column headings in the **Specialised Food Products Monthly Consumption Report (MCR)** aloud.
- Explain that you will give the groups information to write in their forms. Read aloud the numbers in the white spaces on the sample form **Specialised Food Products Monthly Consumption Report (MCR)** on the next page and ask the groups to record them on their forms. Then ask them to calculate the amounts for columns C, G, and H. Give the groups 15 minutes for this exercise. Move among the groups to answer questions as needed.
- At the end of 15 minutes, ask one group to read its figures for RUTF and another group to read its figures for FBF.
- Check the totals against the figures in the spaces of columns C, G, and H in the example form on the next page and make corrections as needed.
- Ask the groups to discuss challenges they might face in completing this form and how they could address each challenge.

Exercise 10a: Specialised Food Products Monthly Consumption Report (MCR)

Site: _____ **Month:** _____ **Year** 20[__][__]

	# of patients on specialised foods	Quantity brought forward (A)	Quantity received this month (B)	Total A+B (C)	Quantity consumed (D)	Quantity damaged (E)	Quantity expired (F)**	Total of D+E+F (G)	Balance C–G (H)	Orders***
FBF	118	81	2,700	2,781	1,062	0	0	1,062	1,719	
RUTF	12	610	4,500	5,110	1,080	0	0	1,080	4,030	

INSTRUCTIONS

** Expiry: Amount of products that will expire within the next 2 months and will, as a result, likely go to waste.

*** Orders should be submitted as need arises; give a 2-week lead time.

Quantity: For all food apart from RUTF, quantity is in bags. Quantity for RUTF is sachets. 1 bag of any of the following products (First Food, Foundation Plus, or Advantage) is allowed for demonstrations.

COMMENTS

PREPARED BY: dispensing officer (nutritionist/nurse/pharmacist)

Name: _____ Signature: _____ Date: _____

- Hand out another copy of the **Specialised Food Products Monthly Consumption Report (MCR)** to the groups. Ask them to complete **Exercise 10b. Filling Out the MCR** in **Session 4.6** in the Participant Manual.

- Review the following points with the participants.

Exercise 10b. Filling out the Specialised Food Products Monthly Consumption Report

The following data are summarised from the Aduaba Clinic for each day adult clients received NACS services.

1. There were 4 cartons (each carton contains 150 sachets) and 10 sachets of RUTF (Plumpy'Nut®) and 9 bags of FBF at the site at the end of February.
   EXPLANATION: (4 x 150 = 600) + 10 = 610 sachets of RUTF and 81 kg of FBF.

2. In March, the site saw 106 clients with MAM and 12 clients with SAM.
   EXPLANATION: RUTF is only for clients with SAM. Each client with SAM needs 3 sachets of RUTF and 300 g of FBF per day, which is the equivalent of 90 sachets of RUTF and 9kg of FBF per client per month. Each client with MAM needs 300 g of FBF per day, the equivalent of 9 kg per client per month.

3. At the end of February the site ordered 2,700 kg (300 bags) of FBF and 4,500 sachets (30 cartons) of Plumpy'Nut® to last to the end of May (assume no damages or expired products during the month).

4. On March 9, the site received 300 bags of FBF and 30 cartons of Plumpy'Nut® to last until the end of May. Will the current supply last until the end of May? Why or why not?
   EXPLANATION:
   - *The site saw 12 clients with SAM and 106 clients with MAM per month. For the MAM clients, the site needs 954 kg (106 bags) of FBF. For the SAM clients, the site needs 1,080 sachets of RUTF (90 x 12) and 108 kg (12 bags) of FBF.*
   - *The total amount of specialised food products needed for 1 month is therefore 1,080 sachets of RUTF and 1062 kg (118 bags) of FBF.*
   - *The total amount needed for 3 months, assuming the same number of clients, is 3,240 sachets of RUTF and 3186 kg (354 bags) of FBF.*
   - *Yes, the current supply will last until the end of May. In March the site has 5,110 sachets (610 + 4,500, or 150 x 30) of RUTF and 2,781 kg (309 bags) of FBF. If 3,240 sachets of RUTF and 3,186 kg (354 bags) of FBF are needed for 3 months, the site will have more RUTF than needed but possibly a small deficit (50 bags) of FBF.*

Discussion (10 minutes)

- Discuss differences and similarities of NACS commodity management with that of other commodities (e.g., ARVs and anti-TB drugs) at the facility level.
- Allow time for questions and discuss any issues that need clarification.
- Distribute copies of the **Module 4 Evaluation Form** found in **Annex 3**. Ask participants to fill it out and give it to you before they leave.

5 NACS Monitoring and Reporting

MODULE 5. NACS MONITORING AND REPORTING

7 hours

Monitoring nutrition data can inform and improve the implementation and quality of NACS interventions and their integration into health care services. Monitoring can also assess the impact of services and policy and inform resource allocation. Health care workers should regularly record information on clients' nutritional status and the amount of specialised food products disbursed to acutely malnourished clients using standardized forms. Health facilities should report NACS information monthly to the district level. District health managers/officers should combine the information from all facilities implementing NACS to send to the National AIDS/STI Control Programme (NACP), National Tuberculosis Control Programme (NTP), and the Nutrition Department of GHS. The Nutrition Department will then help the Medical Stores Department (MSD) plan distribution of NACS commodities for the following month.

Purpose	Introduce participants to collecting, monitoring, and reporting NACS data and give them the opportunity to practice nutrition assessment, counselling, and NACS data collection in a health care facility.

Learning objectives	By the end of this module, participants will be able to: 1. Explain the purpose of NACS data collection and integrating NACS into the routine HIV and TB monitoring and evaluation system 2. Complete NACS data collection tools accurately 3. Identify and address challenges of data collection 4. Assess the quality of NACS services 5. Practice data collection in a nearby health facility

Materials needed	• Flipchart and stand • Markers and tape • LCD projector • PowerPoint • 24 folded pieces of paper • At least 10 sets of Paediatric and Adult HIV Client Folders that include nutrition indicators

Materials needed

- At least 10 sets of TB paediatric and adult treatment cards
- Copies of the NACP ART Data Form with the nutrition indicators included
- If participants have not been trained in Module 2. Nutrition Assessment, Classification, and Care Plans, 6 of each of the following MUAC tapes:
  - Adult measuring device
  - Colour-coded child MUAC tape
- **Hand-outs** (one copy for each participant)
  - NACS Client Management Form
  - NACS Client Register Form
  - Specialised Food Products Monthly Consumption Report Form
  - NACS Monthly Report Form
  - NACP ART Data form
  - Module Evaluation for Module 5 (in Annex 3)
  - Final Course Evaluation Form (in Annex 3)
  - Course Certificates

Advance preparation

- Review PowerPoint slides for Module 5.
- Review **Module 5** in the Participant Manual and **Session 2.3** on Weight.
- If possible, review data collection forms used in paediatric wards and reproductive and child health, PMTCT, care and treatment centre, and home-based care services.
- Make preparations for the site practice visit, following the guidelines in **Annex 7. Site Practice Visit Planning Guide**.
- Fill in and sign a course certificate for each participant.

- Show **Slide 125.**

Objectives (5 minutes)

- Present the module objectives on **Slide 126**.

Review (20 minutes)

*If participants have been trained in **Modules 1 to 4**, review **Module 4**:*

- Give each participant a folded piece of paper. Ask each participant to write a question about specialised food products for malnourished clients that a person might ask who does not understand what they are and what they are used for. Instruct the participants to turn the cards over so the questions cannot be seen and pass them to someone else.

- Ask the participants to continue passing the cards in random fashion until you say 'Stop!' (after about 15 seconds). Make sure everyone has a card.

- Ask one participant to read the question on the card. Ask the participants who know the answer to raise their hands. Call on participants until someone gives the correct answer. If no one gives the correct answer, answer the question. Then select another participant to read another question until questions are asked and answered.

*If participants have not been trained in **Modules 1 to 4:***

- Review the components of the NACS approach (**Session 4.1**).

- Review the target groups for NACS (**Session 4.1**).

- Tell participants that they will visit a health care facility later in the day to practice the nutrition assessment and counselling skills learned in **Modules 2 and 3**. If participants have not already been trained in these modules, explain that there will be refresher training before the site practice visit.

5.1 Purpose of NACS Data Collection, Indicators, and Integrating the Indicators into the HIV and/or TB Monitoring and Evaluation System (30 minutes)

BRAINSTORM: Purpose of Recording NACS Data

- Ask participants: 'Why is it important to record NACS data? How can health care facilities use NACS data?' Compare the responses to the information on **Slide 127**.

BRAINSTORM: NACS Indicators and Integration into the HIV and/or TB Monitoring and Evaluation System

- Ask participants to define 'indicators'. Compare the responses to the information on **Slide 128.**
- Explain each of the NACS indicators by taking the participants through **Slides 129–131**.
- Facilitate discussion with participants on the feasibility of collecting the indicators through the existing health system.
- Ask participants: 'What nutrition information should be reported to the Ghana Health Service (GHS, Nutrition Department, NACP, and NTP) on NACS clients?' List responses on a flipchart.
- Explain that to facilitate data collection and reporting, nutrition indicators have been integrated into the HIV and TB monitoring and evaluation system and should be reported through the systems.
- Show **Slide 132** on integration of NACS indicators into the HIV and TB monitoring and evaluation system. Explain to participants the importance of ensuring that NACS is part of routine HIV and TB health service delivery.

5.2 NACS Data Collection Tools and Forms (2 hours)

- Show **Slide 133.**

- Explain that health care workers should keep regular records on individual NACS clients to monitor their progress and to track clients between different services.

BRAINSTORM: Where does this information come from? Who fills it out?

- Give each participant a copy of the **NACS Client Management Form** (also in **Session 5.2** of the Participant Manual). Remind participants that that this form is used to assess and record clients' nutritional status and manage their follow-up in NACS services.

- Explain that health care workers should fill out the form for each client on the initial assessment and for every follow-up visit. The form is kept in the client's file. Also tell the participants that they will take these forms with them on the site practice visit later in the day to fill out for each client they work with.

- Ask participants where they would get the information for this form and who would fill out the form. Compare responses to the correct answer. *(ANSWER: The information comes from nutrition assessment of each client, and clinicians or nurses fill out the forms.)*

- Ask participants to refer to the **NACS Client Register** in **Session 5.2** of the Participant Manual.
- Explain that the information comes from all of the **NACS Client Management Forms** and is filled out at the facility by the facility's NACS focal person. Facilitate discussion and answer questions as needed.

- Ask participants to turn to the **NACS Monthly Report** in **Session 5.2**.

- Ask participants to discuss aloud where they would get the information for this form and who fills out the form. Compare responses to the correct answer. *(ANSWER: The information comes from all of the **NACS Client Registers** and the **NACS Client Management Forms**. Usually the facility's NACS focal person fills it out.)*

NACS Client Management Form

Client Folder No. [__][__][__][__]

Visit no.	Date	Weight *(kg)*	MUAC *(cm)*	BMI	Medical complications? *Y/N*	Appetite? *Y/N*	Bilateral pitting oedema? *Y/N*	Pregnant? *Y/N or N/A*	Counselled on diet? *Y/N*	Nutritional status					Food Support Provided				Exit reason ☐				
										SAM Inpatient	SAM Outpatient	MAM	Normal	Overweight/ Obese	RUTF (sachets)	FBF (kg)	Enabler's Package	Food Support	Graduated/ Recovered (G)	Defaulted (D)	Died (X)	Referred (R)	Non-recovered
1																							
2																							
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							

Graduated/Recovered (G) = Has attained the target weight or BMI
Defaulted (D) = Is absent for two consecutive visits (on the third visit)
Died (D) = Died while receiving NACS treatment
Referred (R) = Referred to continue treatment in another facility
Non-Recovered (NR) = Has failed to attain the discharge criteria

NACS Client Register

Site name _____ (Facility/Department) **Month: ……20……**

ID	NAME OF Client	New or Old Case	M/F	Age (Months or Years)	Date Assessed	MUAC (cm)	Oedema status (+, ++, +++)	Weight (kg)	Height (cm)*	BMI (adult)	Classification (SAM, MAM, Normal, Overweight/ Obese)	Counselled (Yes or No)	Food Support**	Date & Exit from Specialised Food Support***
1														
2														
3														
4														
5														
6														
7														
8														
9														
10														

* Measure adults' height only on the first visit. Do not take height or length of children, only MUAC and weight.

** N/A if no food support is provided, RUTF if on therapeutic foods, FBF if on supplementary foods and RUTF/FBF if on both.

*** Graduated/Recovered **(G),** Defaulted **(D),** Died **(X),** Referred **(R),** or Non-recovered **(NR).**

BRAINSTORM: Integrated NACS Data Collection Tools

- Hand-out to the participants the **HIV paediatric and adult client folder and TB adult and paediatric client card**.

- Ask participants to turn to the initial assessment form of the **HIV paediatric and adult client folder**. Highlight to participants where the nutrition indicators—assessment of weight, height, MUAC, and BMI, and classification of SAM, MAM, normal, overweight/obese, nutrition counselling etc.—should be completed.

- Refer participants to the follow up assessment form of the **HIV paediatric and adult client folder**. Also highlight where nutrition indicators—assessment of weight, height, MUAC, and BMI, and classification of SAM, MAM, normal, overweight/obese, nutrition counselling etc.—should be completed.

- Ensure that the participants practice completing nutrition indicators in the HIV and TB client folder/card.

- Ask participants to refer to the **NACP ART Data Form** in **Session 5.2** of the Participant Manual. Explain to the participants that nutrition indicators have been included in the HIV monthly report. It is important to ensure that the data is captured in the report for HIV services.

- Explain the **Food Security Analysis Form Questionnaire**, **Food Commodity Distribution Report,** and **the Monthly Distribution Report** in **Session 5.2** of the Participant Manual. Ask participants to spend time reviewing these as homework.

GROUP WORK

- Ask the participants to form small groups based on their workplaces or regions or by counting off numbers. Give each group a copy of the **NACS Monthly Report Form**.

- Refer the groups to **Exercise 3. Client Register from the Aduaba Clinic** in **Session 2.3** of the Participant Manual. Ask them to use this information collected in one health care facility over a month to fill in the **NACS Monthly Report Form.**

- Give 20 minutes for this exercise. Then ask volunteers to share their results. The answers are shown in the copy of the **NACS Monthly Report Form** on the next page. Make corrections and fill in gaps as needed and facilitate discussion.

NACS Monthly Report

Region/District:……/…… Facility/Site Name: …… Month: ……..20……

INDICATOR		Age Category						
Number (of)	**Gender**	**0–<6 months**	**6–59 months**	**5–9 years**	**10–14 years**	**15–17 years**	**18 years & above**	**Total**
SAM at the start of the month								
MAM at the start of the month								
Old cases assessed & counselled	**M**							
	F							
New cases—SAM	M							
	F							
New cases—MAM	M							
	F							
New cases—Normal	M							
	F							
New cases—Overweight/Obese	M							
	F							
TOTAL NEW CASES								
Recovered—SAM (A1)								
Recovered—MAM (A2)								
Default (Lost to follow-up)—SAM (B1)								
Default (Lost to follow-up)—MAM (B2)								
Death—SAM (C1)								
Death—MAM (C2)								
Non-recovered—SAM (D1)								
Non-recovered—MAM (D2)								
Referred—SAM (E1)								
Referred—MAM (E2)								
TOTAL EXITS SAM = (A1+B1+C1+D1+E1)								
TOTAL EXITS MAM = (A2+B2+C2+D2+E2)								

Name and signature of health care worker: ……/……..

Contact for health care worker (telephone and email) ……/……

BRAINSTORM: Challenges of data collection

- Ask participants: 'What challenges might you face collecting and reporting NACS data?' List responses on a flipchart and compare them to the information in **Slide 134**. Fill in gaps as needed and record constructive ideas from participants to add in future training.

BRAINSTORM: Addressing data collection challenges

- Ask participants: 'How could these challenges be addressed?' List responses on a flipchart and compare them to the information in **Slide 135**.

GROUP WORK

- Refer the groups to the **NACP ART Data Form** in **Session 5.2** of the Participant Manual. Ask them to discuss how data on each indicator might be collected in their health care facilities (e.g., through NACS registers) and who could collect and report the data. Give the groups 10 minutes for this exercise. Then ask two groups to share their results.

- When the participants are finished, ask them to complete **Exercise 11. NACS Data Collection, Monitoring, and Reporting** in **Session 5.2** of the Participant Manual in their groups. Discuss responses together after they complete the exercise.

BRAINSTORM: NACS Site Quality Assurance Checklist

- With the participants, review the **NACS Site Quality Assurance Checklist** in **Session 5.2** of the Participant Manual. Discuss how the tool can be used in their facilities.

5.3 Site Practice Visit (3 hours)

- Explain that participants will have a chance to practice what they have learned about nutrition assessment, counselling, and data collection in visits to actual health care facilities. Participants will measure weight and height, find BMI, and measure MUAC and complete a **NACS Client Management Form** for each client they see.

- Refer participants to the **Site Practice Visit Report** in **Session 5.3** of the Participant Manual. Explain that each participant should fill out this form during the site practice visit.

- Review each item on the form for participants to observe and report on. Show **Slide 137.**

- Discuss the sites the participants will visit and explain the reason for choosing those sites, the length of the visit, and the group leaders, if appropriate.

- Divide participants into small groups depending on the number of sites to visit.

REVIEW: If the participants have not been trained in **Modules 2 and 3**, they will need training in the topics in the boxes below.

Measuring Weight and Height

- Refer participants to **How to Weigh Adults and Children** in **Session 2.3** of the Participant Manual. Ask volunteers to read the information aloud.
- Refer participants to **How to Measure Height** in **Session 2.3** of the Participant Manual, and ask a volunteer to read the information aloud.

Measuring BMI

- Hand out the job aid: **Body Mass Index Wheel**. Explain the colour coding.

Measuring MUAC

- Refer the groups to **How to Measure Mid-Upper Arm Circumference** n **Session 2.3** of the Participant Manual. Ask volunteers to read each step aloud. Explain that the job aid shows a person measuring the MUAC of a child, but the placement of the tape is the same as for adults.
- Distribute a set of MUAC tapes to each group to use to measure clients during the field visits.

- Show the adult MUAC tapes and colour-coded child MUAC tapes.
- Demonstrate measuring MUAC on a co-facilitator. Find the measurement and ask the groups to identify the nutritional status by colour.

Counselling using the GATHER Approach

- Review **Session 3.2 Nutrition Counselling using The GATHER Approach** in the Participant Manual.
- With another facilitator, demonstrate counselling a client on the importance of monthly weighing to monitor nutritional status.

SITE PRACTICE VISIT

- Accompany participants on the site visits to introduce them to health facility staff and help them practice nutrition assessment, counselling, and use of NACS forms.
- Ask participants to be respectful of the health care workers and managers they will observe, as well as of the clients in the site. They should express any criticism back in the classroom rather than during the site practice visit.
- Explain that participants will be called on back in the classroom to present their observations.

GROUP WORK: Energiser

- If participants need re-energising when they return from the site visit, have them stand in two circles. Instruct the participants in each circle to count out loud around the circle. Each participant who gets a multiple of 3 (3, 6, 9, 12, etc.) or a number that ends with 3 (13, 23, 33, etc.) must say 'Boom!' instead of the number. The next participant should continue the normal sequence of numbers. Anyone who does not say 'Boom!' or makes a mistake with the number that follows has to sit down. The last two participants left are the winners.

DISCUSSION: Site practice visit

- Ask volunteers to read their answers to the questions on the **Site Practice Visit Report** in **Session 5.3** of the Participant Manual, and share observations and experiences during the field visit. Facilitate discussion.
- Refer participants to **NACS Site Quality Assurance Checklist** in **Session 5.2** of the Participant Manual. Explain that NACS focal persons will use this checklist to assess the readiness of health care facilities to implement NACS services and to do continuous quality improvement. The assessment should be done quarterly.

5.4 Declaration of Commitment (25 minutes)

GROUP WORK

- Ask participants to reform their small groups. Ask each group to think about what they learned in this training and write a statement of what they will do to improve the quality of nutrition care in their workplaces. They can also add what support they will need from managers of their facilities, from GHS/Ghana AIDS Commission or from district and regional health authorities, to help them implement what they have learned.
- Ask one or two groups to present their statements. Facilitate discussion.
- Ask each facility represented to take a copy of this statement to share with the managers of their facility.
- Explain that the participants need to practice the new skills and knowledge they have learned in the course as soon as they go back to their workplaces in order to gain confidence and proficiency. They also need to learn how to apply what they have learned in their workplaces.
- Explain that a regional or national NACS trainer will follow up with the trained health care workers 1–3 months after the training to assess their experience applying NACS knowledge and skills.

Discussion (10 minutes)

- Allow time for questions and discuss any issues that need clarification.
- Distribute copies of the **Module 5 Evaluation Form** found in **Annex 3**. Ask participants to fill it out and give it to you before they leave.

Post-Test (15 minutes)

- Give each participant a copy of the test in **Annex 1. Pre-/Post-Test**. Ask participants to write their positions, titles, or professions and the date at the top of the sheet. Give 10 minutes to complete the post-test.
- After 10 minutes, collect the post-tests. Correct them immediately using **Annex 2. Pre-/Post-Test Answer Key**. Tally the scores according to the table below. Write the results on a flipchart that all participants can see clearly.

Score	**Pre-test** *(number of participants)*	**Post-test** *(number of participants)*
Under 50%		
50%–74%		
75% and over		
Total Average Score		

- Share the results with the participants. Explain again that a regional or national NACS trainer will visit the participants in 1–3 months to follow up on the training and give participants a chance to discuss any problems they have had using the knowledge and skills gained in this course.

- Thank the participants for their contributions during the course and wish them well back in their workplaces.

- Give each participant a certificate of completion.

Final Course Evaluation (15 minutes)

- Give each participant a copy of the **Final Course Evaluation Form** in **Annex 3**. Ask participants to complete this form and give it to you before leaving.

RESOURCES

Generic Guidelines and Job Aids for Community-Based Management of Acute Malnutrition (CMAM) (Food and Nutrition Technical Assistance II Project [FANTA-2] 2010)

A Guide to Monitoring and Evaluation of Nutrition Assessment, Education and Counseling of People Living with HIV (Castleman, Deitchler, and Tumilowicz 2008)

Guide to Screening for Food and Nutrition Services among Adolescents and Adults Living with HIV (Tumilowicz 2010)

Guidelines for Antiretroviral Therapy in Ghana (Ghana Ministry of Health and Ghana Health Service 2010)

Guidelines for the Clinical Management of TB and HIV Co-Infection in Ghana (Ghana Ministry of Health and Ghana Health Service 2007)

Guidelines for HIV Testing and Counselling in Clinical Settings (Ghana Health Service, National AIDS/STI Control Programme 2008)

Guidelines on Nutritional Care and Support for People Living with HIV and AIDS (Ghana Health Service 2006)

HIV/AIDS: A Guide for Nutritional Care and Support (Food and Nutrition Technical Assistance [FANTA] Project 2004)

HIV Sentinel Survey 2011 Report (Ghana Health Service, National AIDS/STI Control Programme 2012)

Integrated Management of Neonatal and Childhood Illness (IMNCI) Chart Booklet (Ghana Ministry of Health 2011)

Interim National Guidelines for Community-Based Management of Severe Acute Malnutrition in Ghana (Ghana Health Service 2010)

Logistics Management of Public Health Commodities in Ghana, Standard Operating Procedures, Trainers' Manual (Ghana Health Service March 2008). A manual prepared with funding from the U.S. Agency for International Development as part of the USAID | DELIVER PROJECT Technical Assistance support to the Ghana Health Service to strengthen logistics management for essential public health commodities.

Logistics Management of Public Health Commodities in Ghana, Standard Operating Procedures Manual, Regional Medical Stores to Service Delivery Points (Ghana Health Service, revised June 2010). A manual prepared with funding from the U.S. Agency for International Development as part of the USAID | DELIVER PROJECT Technical Assistance support to the Ghana Health Service to strengthen logistics management for essential public health commodities.

Management of Severe Malnutrition: A Manual for Physicians and Other Senior Health Workers (World Health Organisation 1999)

National HIV Prevalence and AIDS Estimates Report 2011 (Ghana Health Service, National AIDS/STI Control Programme 2011)

National Strategic Plan 2011–2015 (Ghana AIDS Commission 2011)

Nutrient Requirements for People Living with HIV/AIDS: Report of a Technical Consultation, 13–15 May, 2003 (World Health Organisation 2004)

Nutritional Care and Support for People Living with HIV/AIDS: A Training Course (World Health Organisation 2009)

Protein and Amino Acid Requirements in Human Nutrition; Report of a Joint WHO/FAO/UNU Expert Consultation (WHO, FAO, and United Nations University 2007)

Standard Treatment Guidelines, Sixth Edition. (Ghana Ministry of Health 2010)

Training Course on Inpatient Management of Severe Acute Malnutrition (Ghana Ministry of Health and Ghana Health Service 2012)

Training Manual on Anaemia Control during Pregnancy (Ghana Health Service 2004)

Training Manual on Logistics Management (Ghana Ministry of Health 2012)

WHO Child Growth Standards and the Identification of Severe Acute Malnutrition in Infants and Children: A Joint Statement by WHO and UNICEF (WHO and UNICEF 2009)

ANNEX 1. PRE-/POST-TEST

Date: _____ Position/Title: _____

Place of work (e.g., Antenatal Care [ANC], Antiretroviral Therapy [ART] Clinic, Maternity Ward, Prevention of Mother-to-Child Transmission of HIV [PMTCT] Clinic, or Directly Observed Treatment, Short Course [DOTS] Clinic): _____

Circle the correct answer.

1. Telling a client what to do is the surest way to change his or her behaviour.

   a) True b) False

2. People Living with HIV (PLHIV) and/or Tuberculosis (TB) are more vulnerable to malnutrition than other people.

   a) True b) False

3. HIV and/or TB and frequent infections decrease the body's energy and nutrient levels.

   a) True b) False

4. You can assess a client's nutritional status just by weighing him or her.

   a) True b) False

5. Which of the following nutrients do PLHIV and/or TB clients need most?

   a) Carbohydrates b) Protein c) Vitamins and minerals d) All of these

6. When does nutrition support have the greatest impact?

   a) In the early stage of HIV b) In the late stage of HIV c) At all stages of HIV

7. PLHIV and/or TB clients need to consume more energy every day than uninfected people of the same age, gender, and level of physical activity.

   a) True b) False

8. Fermentation improves food quality because it aids digestion and absorption.

   a) True b) False

9. An HIV-positive mother should never breastfeed her child.

   a) True b) False

10. HIV-related symptoms can be managed only with medicines.

    a) True b) False

11. Body Mass Index (BMI) is the best indicator of the nutritional status of pregnant women.

    a) True b) False

12. People with oral thrush (candidiasis) should avoid spices and sugar.

    a) True b) False

13. Which statement is false?

    a) A person with diarrhoea should drink plenty of water.
    b) A person with constipation should eat more refined foods.
    c) A person with nausea should eat small, frequent meals.
    d) Green leafy vegetables are a source of iron.

14. What is the recommended energy intake for HIV-positive adults with secondary infections?

    a) 5%–10% more than the recommended daily intake
    b) 20% more than the recommended daily intake
    c) 50%–100% more than the recommended daily intake
    d) Same as recommended daily intake

15. What are the additional energy requirements of HIV-positive children who have symptoms and are losing weight?

    a) 5%–10% more than the recommended daily intake
    b) 20% more than the recommended daily intake
    c) 50%–100% more than the recommended daily intake
    d) Same as recommended daily intake

16. All PLHIV who qualify for Antiretroviral Therapy (ART) and have a BMI less than 16 should begin Fortified-Blended Food (FBF)/Ready-to-use Therapeutic Food (RUTF) immediately.

    a) True b) False

17. Eating large meals only a few times a day can help manage symptoms of nausea or vomiting.

    a) True b) False

18. According to the World Health Organisation (WHO), there is not enough evidence to support PLHIV and/or TB clients eating more protein than uninfected people.

    a) True b) False

19. Ready-to-Use Therapeutic Food (RUTF) is an energy-dense food designed to treat people with severe acute malnutrition.

    a) True b) False

20. A child with a Mid-Upper Arm Circumference (MUAC) less than 11.5 cm has severe acute malnutrition.

    a) True b) False

21. HIV infection or TB can interfere with the body's absorption and utilisation of nutrients.

    a) True b) False

22. An HIV-positive woman's nutritional status can affect her risk of transmitting HIV to her infant.

    a) True b) False

23. Pregnant women need more energy than post-partum women.

    a) True b) False

24. The aim of Nutrition Assessment, Counselling, and Support (NACS) is to improve household food security.

    a) True b) False

25. Dietary intervention is not important in TB cough management.

    a) True b) False

ANNEX 2. PRE-/POST-TEST ANSWER KEY

Highlighted answers are correct.

1. Telling a client what to do is the surest way to change her or his behaviour.

   a) True **b) False**

2. People Living with HIV (PLHIV) and/or TB are more vulnerable to malnutrition than other people.

   a) True b) False

3. HIV and/or TB and frequent infections decrease the body's energy and nutrient levels.

   a) True b) False

4. You can assess a client's nutritional status just by weighing her or him.

   a) True **b) False**

5. Which of the following nutrients do PLHIV and/or TB clients need most?

   a) Carbohydrates b) Protein c) Vitamins and minerals **d) All of these**

6. When does nutrition support have the greatest impact?

   a) In the early stage of HIV b) In the late stage of HIV **c) At all stages of HIV**

7. People with HIV/or TB clients need to consume more energy than uninfected people of the same age, gender, and level of physical activity.

   a) True b) False

8. Fermentation improves the nutritional value of food because it helps digestion and absorption.

   a) True b) False

9. An HIV-positive mother should never breastfeed her child.

   a) True **b) False**

10. HIV-related symptoms can be managed only with medicines.

    a) True b) False

11. Body Mass Index (BMI) is the best indicator of the nutritional status of pregnant women.

    a) True b) False

12. People with oral thrush (candidiasis) should avoid eating spices and sugar.

    a) True b) False

13. Which statement is false?

    a) A person with diarrhoea should drink plenty of water.
    b) A person who is constipated should eat more refined foods.
    c) A person who has nausea should eat small, frequent meals.
    d) Green leafy vegetables are a source of iron.

14. What is the recommended energy intake for HIV-positive adults with secondary infections?

    a) 5%–10%more than the recommended daily intake
    b) 20% more than the recommended daily intake
    c) 50%–100% more than the recommended daily intake
    d) Same as recommended daily intake

15. What are the additional energy requirements of HIV-positive children who have symptoms and are losing?

    a) 5%–10% more than the recommended daily intake
    b) 20% more than the recommended daily intake
    c) 50%–100% more than the recommended daily intake
    d) Same as recommended daily intake

16. All PLHIV who qualify for Antiretroviral Therapy (ART) and have a BMI less than 16 should begin Fortified-Blended Food (FBF)/Ready-to-use Therapeutic Food (RUTF) immediately.

    a) True b) False

17. Eating large meals only a few times a day can help manage symptoms of nausea or vomiting.

    a) True b) False

18. According to the World Health Organisation (WHO), there is not enough evidence to support PLHIV and/or TB clients eating more protein than uninfected people.

    a) True b) False

19. Ready-to-Use Therapeutic Food (RUTF) is an energy-dense food designed to treat people with severe acute malnutrition.

    a) True b) False

20. A child with a Mid-Upper Arm Circumference (MUAC) less than 11.5 cm has severe acute malnutrition.

    a) True b) False

21. HIV infection or TB can interfere with the body's absorption and utilisation of nutrients.

    a) True b) False

22. An HIV-positive woman's nutritional status can affect her risk of transmitting HIV to her infant.

    a) True b) False

23. Pregnant women need more energy than post-partum women.

    a) True b) False

24. The aim of Nutrition Assessment, Counselling, and Support (NACS) is to improve household food security.

    a) True b) False

25. Dietary intervention is not important in TB cough management.

    a) True b) False

ANNEX 3. MODULE EVALUATION FORMS

INTRODUCTORY EVALUATION FORM

Date: _____ Health facility: _____

Please rate each topic in the table using the scoring system below.

1 = Good 2 = Average 3 = Poor

	Length	Relevance to my work	Presentation	Support from facilitators	Materials	Comments
INTRODUCTORY SESSION						
0.1 Introductions and Training Overview						
0.2 Pre-test						
0.3 Objectives and Expectations						
0.4 Participant Roles						

General comments:

Were your expectations for this module met? (Circle one) Yes No

What additional information would help you in your work?

MODULE 1 EVALUATION FORM

Date: _____ Health facility: _____

Please rate each topic in the table using the scoring system below.

1 = Good 2 = Average 3 = Poor

	Length	Relevance to my work	Presentation	Support from facilitators	Materials	Comments
MODULE 1. OVERVIEW OF NUTRITION						
1.1 Definition of Basic Nutrition Terms						
Importance of Nutrition for Good Health						
1.2 Nutritional Requirements						
Effects of Infection on Nutrient Requirements						
1.3 Causes of Malnutrition						
1.4 Clinical Symptoms and Signs of Malnutrition						
1.5 Consequences of Malnutrition in PLHIV and TB Clients						
1.6 Preventing and Managing Malnutrition						

General comments:

Were your expectations for this module met? (Circle one) Yes No

What additional information would help you in your work?

MODULE 2 EVALUATION FORM

Date: _____ Health facility: _____

Please rate each topic in the table using the scoring system below.

1 = Good 2 = Average 3 = Poor

	Length	Relevance to my work	Presentation	Support from facilitators	Materials	Comments
MODULE 2. NUTRITION ASSESSMENT, CLASSIFICATION, AND CARE PLANS						
2.1 Nutrition Assessment						
2.2 Clinical Assessment						
2.3 Physical Assessment (Anthropometric Measurements)						
2.4 Biochemical Assessment						
2.5 Dietary Assessment						
2.6 Nutrition Care Plans for PLHIV and TB Clients						
Nutrition Care Plan for Severe Acute Malnutrition						
Nutrition Care Plan for Moderate Acute Malnutrition						
Nutrition Care Plan for Normal Nutritional Status						

General comments:

Were your expectations for this module met? (Circle one) Yes No

What additional information would help you in your work?

MODULE 3 EVALUATION FORM

Date: _____ Health facility: _____

Please rate each topic in the table using the scoring system below.

1 = Good 2 = Average 3 = Poor

	Length	Relevance to my work	Presentation	Support from facilitators	Materials	Comments
MODULE 3. NUTRITION EDUCATION, COUNSELLING, AND REFERRAL						
3.1 Conducting a Nutrition Counselling Session						
3.2 Nutrition Counselling Using the GATHER Approach						
3.3 Nutrition Counselling Messages						
3.4 Linking NACS with Community Services						

General comments:

Were your expectations for this module met? (Circle one) Yes No

What additional information would help you in your work?

MODULE 4 EVALUATION FORM

Date: _____ Health facility: _____

Please rate each topic in the table using the scoring system below.

1 = Good 2 = Average 3 = Poor

	Length	Relevance to my work	Presentation	Support from facilitators	Materials	Comments
MODULE 4. SPECIALISED FOOD PRODUCTS TO TREAT ACUTE MALNUTRITION						
4.1 NACS Services						
4.2 NACS Client Flow and Staff Roles						
4.3 Purpose and Types of Specialised Food Products to Manage Acute Malnutrition						
4.4 Admission and Discharge Criteria for NACS in Ghana						
4.5 Managing Clients on Specialised Food Products						
4.6 NACS Commodity Management						

General comments:

Were your expectations for this module met? (Circle one) Yes No

What additional information would help you in your work?

MODULE 5 EVALUATION FORM

Date: _____ Health facility: _____

Please rate each topic in the table using the scoring system below.

1 = Good 2 = Average 3 = Poor

	Length	Relevance to my work	Presentation	Support from facilitators	Materials	Comments
MODULE 5. NACS MONITORING AND REPORTING						
5.1 Purpose of NACS Data Collection, Indicators, and Integrating the Indicators into the HIV and/or TB Monitoring and Evaluation System						
5.2 NACS Data Collection Tools and Forms						
5.3 Site Practice Visit						
5.4 Declaration of Commitment						

General comments:

Were your expectations for this module met? (Circle one) Yes No

What additional information would help you in your work?

FINAL COURSE EVALUATION FORM

Please answer the questions below.

1. Were your personal expectations of the course met? (Circle one) Yes No

If not, what expectations were not met?

2. What would you recommend to improve the *delivery* of the course?

3. What would you recommend to improve the *logistics and administration* of the course?

4. What do you think about the length of the course? (Circle one)
   a) Just right
   b) Too short (how many days would you recommend?)
   c) Too long (how many days would you recommend?)

5. What useful skills, knowledge and attitudes did you acquire in this course?

   I learned:

   I realised (about myself):

   I was surprised that:

   I was disappointed that:

6. Which topics should have included more information or been given more time and why?

7. Which topics should have included less information or been given less time and why?

8. How will you use the knowledge, skills, or materials provided during this course in your workplace?

Fill out the table below, rating each criterion by giving a score and comment.

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

Criterion	Score	Comments/suggestions
1. I received timely and adequate information about the course beforehand.		
2. The course venue was appropriate.		
3. The teaching methods and materials were appropriate for nutrition and HIV information.		
4. The course was logical and flowed well.		
5. The facilitators were knowledgeable and communicated the information well.		
6. The practical sessions were interesting and useful.		
7. My questions were answered to my satisfaction.		
8. The course content was practical for my work and not too theoretical.		
9. I have acquired skills that will improve my performance and quality of work.		
10. I would recommend this course to someone else working with People Living with HIV (PLHIV).		

ANNEX 4. ICEBREAKER/ENERGISER EXAMPLES

ICEBREAKER

1. Throw the ball to one participant. Ask that person to introduce themself, giving his or her name, job, place of work, and one thing they like about nutrition. Then ask that person to throw the ball to another participant, who then introduces themself 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.

OR

2. Give each participant a piece of paper. Ask each participant to write their name, position, place of work, and favourite food on the paper and then fold the paper to make a paper airplane. When all participants have made their airplanes, ask them to 'fly' them across the room to other participants. Ask each participant to read the information on the paper airplane they picked up and then shake hands with the person who sent the airplane.

OR

3. Ask participants to form two large circles, one inside the other, with the same number of participants in each circle. Have the people in the inside circle face the people in the outside circle. Ask each participant to introduce themself to the person facing them, giving their name, job, and place of work. Then ask the participants in the inside circle to move one step to the right. The participants now facing each other should introduce each other. Continue so that each participant can meet each new person as the circle continues to move.

ANNEX 5. GLOSSARY OF KEY TERMS

Acceptable, Feasible, Affordable, Sustainable, and Safe (AFASS) refers to criteria that should be met if replacement feeds are to be given safely to infants.

Acquired Immunodeficiency Syndrome (AIDS) is an advanced stage of HIV, clinically defined by the presence of HIV infection and a low level of white blood cells or T-cells.

Acute malnutrition is a form of undernutrition. It is caused by a decrease in food consumption and/or illness, resulting in bilateral pitting oedema or sudden weight loss. It is defined by the presence of bilateral pitting oedema or wasting (low mid-upper arm circumference or low weight-for-height). Acute malnutrition is classified as either severe (SAM) or moderate (MAM).

Anaemia is a condition in which the haemoglobin (Hb) concentration in the blood is below a defined level (non-pregnant women of reproductive age: < 12 g/dl; pregnant women: < 11 g/dl; children 0–59 months: < 11 g/dl). This results in a reduced oxygen-carrying capacity of red blood cells. Pregnant women, infants, and young children are particularly vulnerable to anaemia. Anaemia of all severities increases risk of maternal and perinatal mortality, preterm birth, and low birth weight, impaired cognitive development in children, and reduced adult work productivity.

Anorexia is the loss of appetite or the inability to eat.

Antenatal care is care provided to a mother and child immediately following birth through 6 months of age.

Anthropometry is the measurement of the human body. It is used to assess the nutritional status of individuals to screen for medical conditions and as entry criteria for nutrition support programs. Common nutrition-related anthropometric measures are height, weight, and mid-upper arm circumference.

Appetite test is the decisive criteria for participation in the outpatient care service of Community-Based Management of Acute Malnutrition. The test is done at admission and during all follow-up sessions to ensure that the patient can eat ready-to-use therapeutic food. If the patient has no appetite, he/she must be treated in inpatient care.

Bilateral pitting oedema—also known as nutritional oedema, kwashiorkor, or oedematous malnutrition—is a sign of severe acute malnutrition. It is caused by an abnormal infiltration and excess accumulation of serous fluid in connective tissue or in serous cavities. Bilateral pitting oedema is verified when thumb pressure applied on top of both feet for 3 seconds leaves a pit (indentation) in the foot after the thumb is lifted.

Body Mass Index (BMI) is a calculation made to assess adult nutritional status and identifies body thinness as a result of weight loss or failure to gain weight. BMI is not accurate in

pregnant women and women up to 6 months post-partum. BMI is calculated by dividing weight in kilograms by height in metres squared (BMI = kg/m^2).

Caregiver is someone, male or female, who cares for a child and makes decisions on the child's treatment if he or she is ill. This person could be a mother, father, or grandparent, or could be external to the family, depending on the situation.

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.

Clients refer to individuals who receive health-related commodities or services.

Community-Based Management of Acute Malnutrition (CMAM) is and approach that involves (1) inpatient care for the management of severe acute malnutrition (SAM) with medical complications and for all infants under six months with acute malnutrition, (2) outpatient care for the management of SAM without medical complications, and (3) community outreach for active case-finding and referral and follow-up of problem cases.

Corn-Soya Blend (CSB) is a naturally wholesome blended food containing 69.5% cornmeal, 21.8% soy flour, a premix of 3.0% minerals and vitamin antioxidant, and 5.5% soy oil. It is highly nutritious and precooked for ease in use and handling.

Critical Nutrition Actions (CNAs) are a set of eight interventions that promote nutrition and child survival.

Exclusive breastfeeding is the feeding of an infant only with breast milk and *no other* liquids or solids except vitamins, mineral supplements, or medicines in drop or syrup form. Exclusive breastfeeding is recommended until the infant reaches 6 months of age.

Food is anything that provides the body with nutrients.

Food access means having adequate resources to obtain appropriate foods for a nutritious diet, which depends on available income, distribution of income in the household, and food prices.

Food availability is having sufficient quantities of food from household production, other domestic output, commercial imports, or food assistance.

Food by Prescription (FBP) is a component of nutrition assessment, counselling, and support. Specifically, FBP refers to the provision of specialized food product based on the established eligibility and exit criteria.

Food groups refer to categories of food based on the type of nourishment they supply. The three categories are (1) energy giving foods: supply the body with carbohydrate for energy, (2) body building foods: important for growth and repair of the body, and (3) protective foods: important sources of vitamins and minerals.

Food security, as defined by the U.S. Agency for International Development, exists when all people at all times have both physical and economic access to sufficient food to meet their

dietary needs for a productive and healthy life. Food security is attained when the following three components are fully realized: food availability, food access, and food utilisation/ consumption.

Food utilisation/consumption is the proper biological use of food, requiring a diet with sufficient energy and essential nutrients, potable water, and adequate sanitation, as well as knowledge of food storage, processing, basic nutrition, and child care and illness management.

Formula 75 (F-75) (75 kcal/100 ml) is the milk-based diet recommended by the World Health Organisation for the stabilisation of children with severe acute malnutrition (with medical complications) in inpatient care.

Formula 100 (F-100) (100 kcal/100 ml) was the milk-based diet recommended by the World Health Organisation for the nutritional rehabilitation of children with severe acute malnutrition (SAM) after stabilisation, before ready-to-use therapeutic food (RUTF) was available. Its main use currently is for children with SAM and severe mouth lesions who cannot swallow (RUTF) and who are in inpatient care. F-100 Diluted is used for the stabilisation and rehabilitation of infants in inpatient care.

Global Acute Malnutrition (GAM) is a population-level indicator referring to overall acute malnutrition defined by the presence of bilateral pitting oedema or wasting defined by weight-for-height < −2 z-score (WHO growth standards). GAM is the combination of moderate and severe acute malnutrition (GAM = MAM + SAM).

Growth faltering occurs when a child fails to gain adequate weight, compared to the amount of weight he or she would be expected to gain during a specified time period, based on international references. Growth faltering is measured by weighing children at regular intervals and comparing their weight gain to adequate weight gain tables, or growth curves.

Health care is the prevention, treatment, and management of illness and the preservation of mental and physical well-being through the services offered by health care providers. Health care embraces all the goods and services designed to promote health, including preventive, curative, and palliative interventions, whether directed to individuals or to populations.

Height-for-Age (HFA) is an index used to assess stunting. It reveals how a child's height compares to the height of a child of the same age and sex in the National Center for Health Statistics references or World Health Organisation standards. It reflects a child's past nutrition history rather than his or her current nutritional status.

Human Immunodeficiency Virus (HIV) attacks the immune system. It is spread through sexual contact, direct inoculation with contaminated needles, or blood transfusion. It can also be spread from mother to child during pregnancy, birth, or breastfeeding. Left untreated, HIV compromises immune system function, leaving the infected person susceptible to a variety of opportunistic infections, including AIDS.

Low birth weight is when an infant weighs less than 2,500 g (5.5 pounds) at birth. Low birth weight is an outcome of intrauterine growth retardation and/or premature birth.

Nutrients are chemical substances in food that can be metabolised to provide energy to maintain, repair, or build body tissues. They include macronutrients and micronutrients.

Nutrition is the body's process of taking in and digesting food; using it for growth, reproduction, immunity, breathing, work and health; and storing nutrients and energy in appropriate parts of the body.

Nutritional status is the balance between the intake of nutrients by an organism and the expenditure of these in the processes of growth, reproduction, and health maintenance.

Macronutrient includes substances that are required by the body in large amounts for the proper growth, maintenance, and repair of body processes and tissues. They include carbohydrates, protein, water, and fat.

Malnutrition occurs when food intake does not match dietary needs. Malnutrition includes both undernutrition and overnutrition.

Micronutrient includes substances that are required by the body in small amounts, including vitamins and minerals. Absence of these substances in the diet will lead to deficiency diseases.

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.

Mid-Upper Arm Circumference (MUAC) is measured using a MUAC tape on a straight left arm (in right handed people), midway between the tip of the shoulder and the tip of the elbow. Low MUAC is an indicator for wasting, used for a child 6 months to 17 years.

Moderate Acute Malnutrition (MAM) is identified in Ghana as follows:
Children 6–59 months: MUAC ≥ 11.5 to < 12.5 cm
Children 5–9 years: MUAC ≥ 13.5 to < 14.5 cm
Children 10–14 years: MUAC ≥ 16.0 to < 18.5 cm
Children 15 – 17 years: MUAC ≥ 17.5 to < 19.5 cm
Adults: MUAC ≥ 19 to < 21.0 cm, or BMI ≥ 16 to < 18.5
Pregnant/post-partum women: MUAC ≥ 21 to < 23 cm

Opportunistic Infection (OI) is an illness caused by various organisms, some of which usually do not cause disease in people with normal immune systems. People living with advanced HIV infection suffer OIs of the lungs, brain, eyes, and other organs. OIs common in people diagnosed with AIDS include *Pneumocystis carinii* pneumonia; Kaposi's Sarcoma; cryptosporidiosis; histoplasmosis; other parasitic, viral, and fungal infections; and some types of cancers.

Overnutrition is a result of excessive intake of nutrients, leading to overweight or obesity.

Ready-to-Use Therapeutic Food (RUTF) is an energy-dense, mineral- and vitamin-enriched food specifically designed to treat severe acute malnutrition. RUTF has a similar nutrient composition to F-100. RUTF is a soft crushable food that can be consumed easily by children

from the age of 6 months without adding water. Unlike F-100, RUTF is not water-based, meaning that bacteria cannot grow in it and that it can be used safely at home without refrigeration and in areas where hygiene conditions are not optimal. It does not require preparation before consumption.

Recommended Daily Intake (RDI) is the minimum amount of macronutrients and micronutrients required by an individual to prevent the development of micronutrient deficiencies or undernutrition.

Severe Acute Malnutrition (SAM) is identified in Ghana as follows (a child with SAM is highly vulnerable to illness and has a high mortality risk):
Infants < 6 months: severe visible wasting, and/or bilateral pitting oedema
Children 6–59 months: MUAC < 11.5 cm, and/or bilateral pitting oedema
Children 5–9 years: MUAC < 13.5 cm, and/or bilateral pitting oedema
Children 10–14 years: MUAC < 16.0 cm, and/or bilateral pitting oedema
Children 15–17 years: MUAC < 17.5 cm, and/or bilateral pitting oedema
Adults: MUAC < 19 cm, or BMI < 16, and/or bilateral pitting oedema
Pregnant/post-partum women: MUAC < 21 cm

Training of Trainers (TOT) is a process in which an experienced trainer expands the knowledge and skills of health care providers already experienced in the subject matter and trains them in adult training. The trained health providers then, in turn, pass on that expanded knowledge and skills to practitioners with less experience and expertise in the subject matter, perhaps in multiple trainings.

Tuberculosis (TB) is a bacterial infection caused by Mycobacterium tuberculosis. TB bacteria are spread by airborne droplets expelled from the lungs when a person with active TB coughs, sneezes, or speaks. Exposure to these droplets can lead to infection in the air sacs of the lungs. TB is seen with increasing frequency among HIV-infected people. Most cases of TB occur in the lungs (pulmonary TB), however, the disease may also occur in the larynx, lymph nodes, brain, kidneys, or bones (extrapulmonary TB).

Undernutrition is a lack of nutrients caused by inadequate dietary intake and/or disease. It encompasses a range of conditions, including acute malnutrition, chronic malnutrition, and micronutrient deficiency.

Wasting is defined by low mid-upper arm circumference or low weight-for-height z-score.

Weight-for-age is used to assess underweight. It shows how a child's weight compares to the weight of a child of the same age and sex according to World Health Organisation standards. The index reflects a child's long-term growth pattern and current nutritional status.

Weight-for-height is used to assess wasting. It shows how a child's weight compares to the weight of a child of the same length/height and sex according to World Health Organisation standards. The index reflects a child's current nutritional status.

ANNEX 6. RUTF LOOK-UP TABLES AND KEY MESSAGES FOR OUTPATIENT CARE

Look-up table for amounts of RUTF to give to a child per day or week based on 92 g packets containing 500 kcal

Weight of Child (kg)	Packets per Week	Packets per Day
3.5–3.9	11	1.5
4.0–4.9	14	2
5.0–6.9	18	2.5
7.0–8.4	21	3
8.5–9.4	25	3.5
9.5–10.4	28	4
10.5–11.9	32	4.5
≥ 12	35	5

RUTF Key Messages

Key messages at first visit:

- RUTF is a food and medicine for very thin children only. It should not be shared.
- Sick children often do not like to eat. Give small regular meals of RUTF and encourage the child to eat often (if possible, 8 meals a day). Your child should have ___ packets a day.
- RUTF is the only food sick/thin children need to recover during their time in outpatient care (however, breastfeeding should continue).
- For young children, continue to breastfeed regularly.
- Always offer the child plenty of clean water to drink or breast milk while he or she is eating RUTF.
- Wash children's hands and face with soap before feeding if possible.
- Keep food clean and covered.
- Sick children get cold quickly. Always keep the child covered and warm.
- When a child has diarrhoea, never stop feeding. Continue to feed RUTF and (if applicable) breast milk.

ANNEX 7. SITE PRACTICE VISIT PLANNING GUIDE

1–4 weeks before	
Request and organise a visit to a health care facility that provides NACS services.	• Write the facility manager requesting permission for the visit. Include a brief description of the training, participants, objectives, proposed date, and length of the visit. • Contact as many staff as possible with whom the participants will interact.
Send a confirmation letter 1–4 weeks before the visit.	• Write a confirmation letter reminding/informing the staff of the date and length of the visit, objectives, number of participants, departments to visit, and what participants will observe.
Week of the visit	
Confirm the visit.	• Telephone or write another letter to confirm. Also confirm the number of participants.
Select a team leader, prepare name tags, and set a time for debriefing.	• Have at least one trainer accompany each group of participants. Groups may select a team leader. • Ask participants to wear their name tags. • Remind participants of the return time.
At the site	
Pay a courtesy call to the facility manager and brief the health care workers.	• Explain the purpose of the visit and introduce the participants. • Ask the health care workers to explain what they do. • Remind participants to ask their prepared questions and make their planned observations.
Thank the health care workers.	• Thank each health care worker at the end of each observation. • Thank the manager at the end of the visit, if appropriate.
Back in plenary	
Debrief.	• Ask participants to discuss the challenges they saw in providing NACS services and options to address these challenges. • Discuss services and activities the participants think they could implement in their own facilities. • Discuss what could be improved.
1 week after the visit	
Send a thank-you note.	• Write the facilities to express your appreciation.