Government of Malawi
Ministry of Health

NUTRITION CARE, SUPPORT, AND TREATMENT (NCST) FOR ADOLESCENTS AND ADULTS

Training for Facility-Based Service Providers

Facilitators Guide

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Contents

ABBREVIATIONS AND ACRONYMS

>	greater than
≥	greater than or equal to
<	less than
AIDS	acquired immunodeficiency syndrome
ANC	antenatal care
ART	antiretroviral therapy
ARV	antiretroviral drug
BMI	body mass index
BUN	blood urea nitrogen
cm	centimetre(s)
CMV	combined mineral and vitamin mix
CNA	Critical Nutrition Actions
CMAM	community-based management of acute malnutrition
CSB	corn-soya blend
dL	decilitre(s)
ES/L/FS	economic strengthening/livelihood/food security
FANTA	Food and Nutrition Technical Assistance III Project
FAO	Food and Agriculture Organization of the United Nations
g	gram(s)
Hb	haemoglobin
HIV	human immunodeficiency virus
HTS	HIV Testing Services
IU	international unit(s)
kcal	kilocalorie(s)
kg	kilogram(s)
L	litre(s)
µg	microgram(s)
mcL	microlitre(s)
mg	milligram(s)
ml	millilitre(s)
mm	millimetre(s)
MOH	Ministry of Health
MUAC	mid-upper arm circumference
NCST	nutrition care, support, and treatment
OPD	outpatient department
PDSA	plan-do-study-act
PLHIV	person or people living with HIV
PMTCT	prevention of mother-to-child transmission of HIV
QA	quality assurance
QI	quality improvement
RDA	recommended daily allowance
RUTF	ready-to-use therapeutic food
TB	tuberculosis
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 on nutrition care, support, and treatment (NCST). The guide supports implementation of the National Guidelines on NCST for Adolescents and Adults and complements related training in HIV and AIDS, tuberculosis (TB), prevention of mother-to-child transmission of HIV (PMTCT), infant and young child feeding (IYCF), and community-based management of acute malnutrition (CMAM).

B. Training Learning Objectives

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

- Understand the role of nutrition in the care and treatment of PLHIV and TB patients
- Assess and classify the nutritional status of clients
- Provide nutrition counselling to clients
- Select an appropriate nutrition care plan for a client based on his/her nutritional status
- Prescribe therapeutic and supplementary foods for undernourished clients
- Collect information on, monitor, and report on NCST services
- Manage the quality of NCST services at the facility level

C. Course Format

The course is divided into six independent modules that can be taught separately or be combined into 7-day nutrition training and 3-day quality improvement training. The six modules are listed below.

Module	Topic	Audience
1	Introduction to Nutrition	Clinicians, nurses, nutritionist, medical clerks, health surveillance assistants (HSAs), home craft workers
2	Nutrition Assessment and Classification	Clinicians, nurses, nutritionists, medical clerks, HSAs, home craft workers Nutrition assessment only: Ward attendants, expert clients, and volunteers
3	Nutrition Counselling and Education	Clinicians, nurses, nutritionists, pharmacists/pharmacy technicians, HSAs, home craft workers
4	Nutrition Care Plans and Support	Clinicians, nurses, nutritionists, pharmacists/pharmacy technicians, HSAs, home craft workers
5	NCST Monitoring and Reporting	Clinicians, nurses, nutritionists, pharmacists/pharmacy technicians, medical clerks, data officers, HSAs
6	Managing the Quality of NCST Services	Clinicians, nurses, nutritionists, pharmacists/pharmacy technicians, medical clerks, HSAs, home craft workers, ward attendants, expert clients, volunteers

There are three reasons for the modular format. First, if facility-based health care workers are unable to leave their workplaces for a full 10 days of nutrition and quality improvement training, the modules can be taught separately over a longer period. Second, service providers who are new to NCST can learn how to implement a few components of NCST at a time. When knowledge and skills are mastered in those components, they can move on to learn the next components. Finally, different types of service providers need different NCST knowledge and skills. For example, it is important for clinicians, nurses, and health surveillance assistants (HSAs) to know how to assess nutritional status (Module 2), while it is important for medical clerks and data officers to know how to record and manage NCST data (Module 5).

D. Duration

With the exception of the modules on nutrition counselling and education and on managing the quality of NCST services, which take 3 days, each module takes approximately 1 day. It takes 10 days in total, including a site visit at a nearby health facility. The modules can be given consecutively or spread out over a longer period. It is also possible to use individual modules as 'stand-alone' components of in-service training or as components of other training packages in HIV and TB treatment and care.

E. Facilitators

The course requires at least three facilitators for a class of a maximum of 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 clinical background. One facilitator should be the course coordinator. All facilitators should have been trained as NCST facilitators and should have the following knowledge and skills:

- Knowledge of nutrition
- Familiarity with the health care system and relevant service delivery protocols
- Experience in maternal 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 NCST training course for facility-based health care providers is aimed at doctors, clinical officers, medical assistants, nurses, nutritionists, pharmacists, pharmacy technicians, medical clerks, HSAs, home craft workers, expert clients, and data officers and clerks working in outpatient departments (OPDs), antiretroviral therapy (ART) clinics, antenatal/PMTCT clinics, and TB clinics in Malawi.

G. Venue

The training should be conducted in the district where the participants work and at a location accessible to participants from multiple health care facilities. The venue should be comfortable and have enough space to post the flipcharts, project slides onto a white screen or wall, and allow participants to work in small groups of no more than six people.

H. Training Materials

1. The **Facilitator's Guide** contains information that course coordinators need to plan the course and that facilitators need to lead participants through the training, including:
   - Instructions on how to facilitate each module
   - A sample timetable for each module
   - A pre-/post-test and the pre-/post-test answer key
   - Module evaluation forms for participants
   - Instructions for preparing for the practical sessions
   - A list of NCST competencies that service providers are expected to demonstrate after the course

2. The **Participant Manual** contains the learning objectives for each module, expected competencies at the end of training, and worksheets and case studies for participants to use during the practical sessions and exercises. The **Participant Manual** also contains reference material for participants to use during the course and to refer to at their workplace after the training.

3. The **Job Aids** are practical tools to help participants implement standardized nutrition care, support, and treatment in their workplaces.

4. The **PowerPoint** slides on a CD or USB flash drive are used to help the facilitators present the content.

5. The **NCST data collection and reporting forms and registers** are used to record, track, and report nutrition information at the facility level.

6. **Handouts** for participants include the required NCST competencies and standards, the pre/post-test given to participants before and after training, and module/course evaluation forms.

I. Supplies and Equipment

☑ Course Checklist

- ☐ One copy of the **Facilitator's Guide** for each facilitator
- ☐ One copy of the course schedule for each participant and facilitator
- ☐ Two copies of **Reference 0.1 Pre-/Post-Test** in the **Facilitator's Guide** for each participant
- ☐ One copy of **Reference 0.2 Pre-/Post-Test Answer Key** from the **Facilitator's Guide**
- ☐ One copy of the **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** (posters, flipcharts, BMI wheels, and A4 booklets)
- ☐ One copy of the *National Guidelines on Nutrition Care, Support, and Treatment for Adolescents and Adults* (2017) for each facilitator
- ☐ One copy of the NCST Counselling and Education Flip Chart (2017)
- ☐ Copies of other relevant national guidelines and job aids:
  - ☐ Clinical Management of HIV in Children and Adults—Malawi Integrated Guidelines for Providing HIV Services (2016)
  - ☐ Malawi National Tuberculosis Control Manual (2016)
  - ☐ Malawi National CMAM Guidelines (2016)
  - ☐ SUN 1,000 Special Days—Maternal Nutrition and Breastfeeding Counselling Materials
- ☐ NCST training PowerPoint on a CD or USB flash drive
- ☐ Flipcharts and stands
- ☐ Markers
- ☐ 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 pads or notepads for facilitators and participants
- ☐ Pens and pencils for all participants
- ☐ Paper for printing or photocopying
- ☐ At least four functioning scales that can weigh an adolescent or adult
- ☐ At least four height boards or height measuring devices for adolescents/adults
- ☐ At least six MUAC tapes that measure adolescents (age 15–18) and adults (age 19 and older)
- ☐ Any other materials listed in the introduction sections of the modules
- ☐ 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:

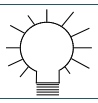
- Create a supportive learning environment by making participants feel confident that their contributions will be received respectfully.
- Build trust by showing commitment to the course and willingness to share your experience.
- Explain how you know what you know.
- Build teamwork by encouraging active 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 the following training methods:

- 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.
4. Read the Facilitator's Guide through to familiarise yourself with the information before leading a training.
5. Print or photocopy needed handouts before each session.
6. Make preparations for the site visit at a nearby health facility.

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 day, interact at least once with each participant and encourage participants to interact with one another.

4. Always administer a **pre-test** before the introductory session and a **post-test** at the end of the training. If the training does not cover all of the modules, administer a pre-test and post-test for the modules that are covered. The pre-test is the same as the post-test. The results will give you feedback on how well the participants understood the content and which points to stress during future trainings or mentoring visits.
5. 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, but preferably by 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. After the review, **give a brief overview of the module** for that day.
6. Distribute copies of the **Module Evaluation Forms** to all participants and collect completed forms at the end of each module.
7. **Adjust the time** of each module as needed.
8. **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 one another.
9. **Use energisers** to recharge the group after lunch or a long session.
10. **Divide participants into small groups** from the same health care facilities or districts, if possible, so they can help one another apply the skills learned in the training when they are back in their workplaces. During group work, each facilitator should **support no more than two groups at a time**.
11. **Be available after each session to answer questions** and discuss concerns. Instead of talking with the other facilitators during breaks, talk with the participants.
12. **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 day's sessions. Praise what the other facilitators did well and discuss any problems with the training content, methods, or timing.

N. After the Training

- With the district NCST coaches (nutritionist/nutrition coordinator, HIV coordinator, PMTCT coordinator, and TB coordinator), review the results of the participant evaluations to discuss how to improve the course in the future.
- With the district NCST coaches, plan post-training mentorship and follow-up of the trained participants at their respective health facilities. Review the NCST competencies and make sure the district team follows up within the first month after the training to assess and reinforce NCST skills learnt and to build the confidence of service providers.

0. Course Schedule

Module	Description	Duration
	Introductory Session	1 Hour
Module 1	Introduction to Nutrition	4 Hours
Module 2	Nutrition Assessment and Classification	6 Hours
Module 3	Nutrition Counselling and Education	18 Hours
Module 4	Nutrition Care Plans and Support	12 Hours
Module 5	NCST Monitoring and Reporting	8 Hours
Module 6	Managing the Quality of NCST Services	16 Hours
Site Visit	Practice assessing and classifying the nutritional status of clients, and observing how clients flow through the health centre	5 Hours

Introductory Session

1 hour

#	Description	Duration
0.1	**Introduction and Training Overview**	**20 minutes**
0.2	**Pre-Test**	**15 minutes**
0.3	**NCST Course Structure and Methods**	**20 minutes**
0.4	**Discussion**	**5 minutes**

Learning objectives

By the end of the session, participants will:

1. Discuss expectations and relate them to the course objectives
2. Take a pre-test to assess knowledge on NCST
3. Outline the required NCST competency standards

Materials needed

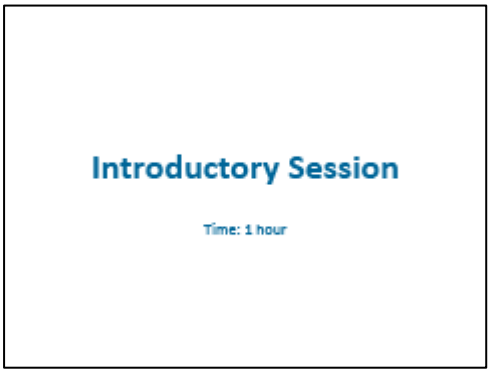
- Flipchart or PowerPoint with the course objectives
- Name tags for all participants
- Writing pads or notepads for all participants
- Pens and pencils for all participants
- Course timetable
- **PowerPoint for Module 0**
- **Handouts**
  1. One copy of **Reference 0.1 Pre-/Post-Test** for each participant
  2. One copy of the course timetable for each participant
  3. One copy of **Reference 0.3 NCST Competencies and Standards** for each participant
- **Participant Manual** for each facilitator and participant

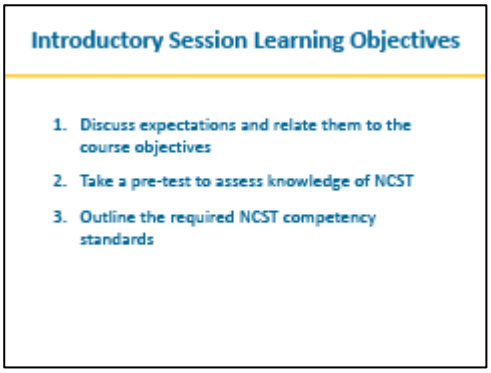
Advance preparation

- Review course timetable
- Review **Reference 0.1 Pre-/Post-Test** and **Reference 0.2 Pre-/Post-Test Answer Key**
- Review **PowerPoint** slides for **Module 0**
- 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)

- Ask each participant to write his or her name on a folded A4 paper and display it on the table.
- Write the acronym 'NCST' on a flipchart and ask the participants to explain the meaning of the acronym.
- Show **Slide 0.2** followed by **Slide 0.3**, which provides the objectives of the introductory session.





- 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. This exercise introduces the participants to one another, encourages them to learn about one another, 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 (see box below).

Housekeeping

- Refer participants to the **course schedule handout**. Explain what time to arrive each day and when the sessions will end.
- Discuss arrangements for **accommodations** (if the training is residential), meals, and reimbursement of travel and other expenses.
- Explain what **materials** to bring to class every day, including a pen, notebook, and the **Participant Manual** and **Job Aids.**
- **Encourage all participants to contribute** their experience to discussions and explain that no answers will be criticised.
- 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 one another'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.

Participant Roles

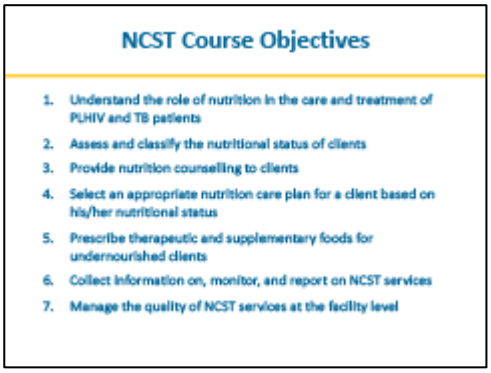
- Ask participants to assign the following roles for small group discussions. Participants should switch roles throughout the day.

  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)

- 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.

Expectations and Course Objectives

- 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 NCST course objectives on **Slide 0.4** and compare them to the expectations of the participants or review their expectations later.
- Ensure that you keep the course objectives and participants' expectations in view during the rest of the training.

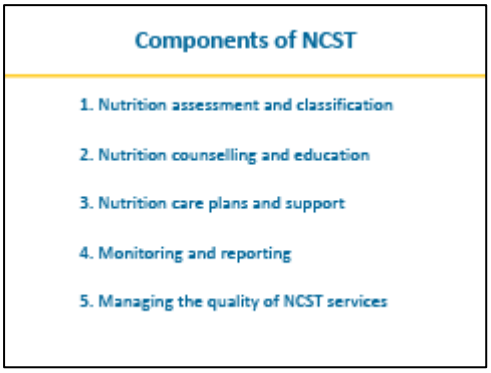


0.2 Pre-Test (15 minutes)

- Give each participant a copy of the pre-test from **Reference 0.1**. Ask participants to write their name, position, health facility, title, or profession and the date at the top of the sheet. Give them 15 minutes to complete the pre-test. If the training covers selected modules, select pre-test questions that relate to the training.
- After 15 minutes, collect the pre-tests. Facilitators should correct them immediately using the answer key in **Reference 0.2**, calculate the scores, and tabulate the results to identify topics that need emphasis during the training.

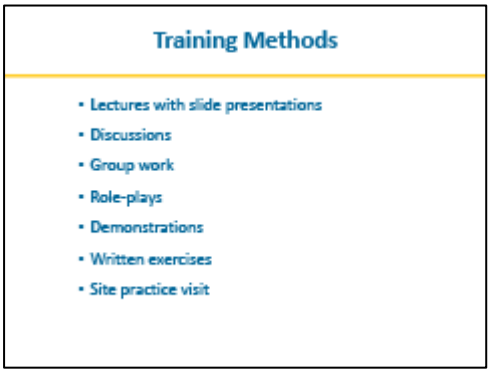
0.3 NCST Course Structure and Methods (20 minutes)

- Give each participant a copy of the **Participant Manual**. Explain that the manual contains the following:
  - Learning objectives for each module
  - Expected competencies at the end of training
  - Worksheets and case studies for participants to use during practical sessions
  - Reference material for participants to use during the course and at the workplace after the training
- Ask participants what activities are included in NCST. Allow at least five volunteers to give answers as you write the responses on a flipchart.
- Show **Slide 0.5** and explain to the participants each of the components of NCST that will be covered later in this course.



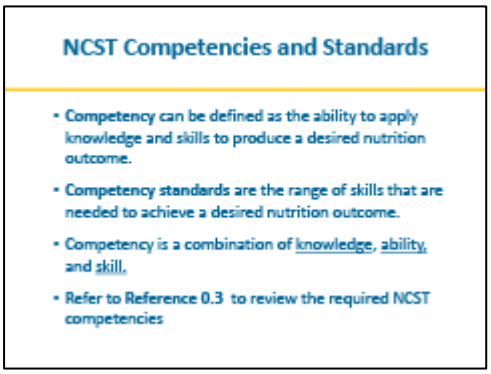
- Explain that this training supports implementation of the *National Guidelines on Nutrition, Care, Support, and Treatment for Adolescents and Adults (December 2014)*. The training is divided in six modules, an introduction to nutrition and five modules each covering a component of NCST. At each workshop, participants will learn selected modules, after which they will practice what they learned in their facilities. Once they have mastered the required skills, participants will reconvene for training on additional modules.

- Show **Slide 0.6** and explain to the participants that this training will use various methods: lectures using slide presentations, discussions, group work, role plays, demonstrations, written exercises, and a site practice visit.



NCST Competency Standards

- Show **Slide 0.7** and explain that it is essential for service providers to know and be able to perform all of the listed competencies and standards in order to provide high quality NCST services. The focus of this training is on learning the required knowledge and skills.



- Describe to participants the meaning of competencies and competency standards (see below).

> - **Competence** can be defined as the ability to apply knowledge and skills to produce a required nutrition outcome.
> - **Competency standards** are the range of skills that are needed to achieve a desired nutrition outcome.
> - Competency is a combination of knowledge, ability, and skill.

- Refer participants to **Reference 0.3**, which provides a list of the required competency standards in NCST service delivery (also see below). Explain that each competency also has verification criteria used to determine if a service provider has mastered the skill.

Reference 0.1: Pre- and Post-Test

Module 1: Introduction to Nutrition

Write down the answer. Where multiple choices are provided, circle the correct answer.

Total: 5 marks

Question	Answer
1. Define the term 'malnutrition'. (1 mark)	Malnutrition:
2. Compared to an HIV-negative person, how much energy do PLHIV need to consume during the following stages: (2 marks)	Early stages of the infection (i.e., asymptomatic stage)?
	Late stage of the HIV infection (i.e., symptomatic stage)?
3. Name two reasons a client might be losing weight. (2 marks)	

Module 2: Nutrition Assessment and Classification

Write down the answer. Where multiple choices are provided, circle the correct answer.

Total: 11 marks

Question	Answer
1. List the four types of nutrition assessment methods. (2 marks)	
2. Chifundo is age 19 and weighs 42.5 kg. Her height is 163.2 cm. Calculate Chifundo's body mass index (BMI). (1 mark)	
3. What is your classification of Chifundo's nutritional status? (1 mark)	

4. David Banda is age 15. He weighs 33.6 kg, and his height is 145.1 cm. What is his BMI-for-age z-score? (1 mark)	
5. What is your classification of David Banda's nutritional status? (1 mark)	
6. What is the minimum amount of weight a healthy woman should gain per month of pregnancy? (1 mark)	
7. Describe the signs of bilateral pitting oedema ++. (1 mark)	
8. A client weighed 60 kg at his first visit but now weighs 55 kg. What percentage of his weight has he lost? (1 mark)	
9. What measurement should be used to determine the nutritional status of a pregnant woman? (2 marks)	

Module 3: Nutrition Counselling and Education

Write down the answer. Where multiple choices are provided, circle the correct answer.

Total: 8 marks

Question	Answer
1. Name 2 differences between counseling and giving information (2 marks)	
2. Select one word that is not part of good counselling (1 mark)	a. __Interactive b. __Empathy c. __Judgment d. __Action

3. What are 3 things counsellors should always ask about? (3 marks)	
4. What is not one of the 4 core needs? (1 mark)	a. __ Drug adherence b. __ Exercise c. __ Adequate diet d. __ Clinic visits
5. Can you apply the same key principles of ALIDRAA when doing group education? Yes/NO (1 mark)	

Module 4: Nutrition Care Plans and Support

Write down the answer. Where multiple choices are provided, circle the correct answer.

Total: 5 marks

Question	Answer
1. What are the criteria used to determine if adolescent and adult clients are eligible for the overweight and obesity nutrition care plan? (1 mark)	
2. What nutrition support should be provided to a client who has normal nutritional status? (1 mark)	
3. Mr. Mathews is 35 years of age and his BMI is 15.9. What nutrition support should he receive and how much per day? (1 mark)	
4. How often should Mr. Mathews come to the facility for nutrition monitoring? (1 mark)	
5. Clients should be referred for economic strengthening, livelihood, and food security support only if they are severely undernourished. (Tick the correct answer.) (1 mark)	_____True _____False

Module 5: Monitoring and Reporting

Write down the answer. Where multiple choices are provided, circle the correct answer.

Total: 5 marks

Question	Answer
1. In which documents should routine nutrition assessment data be recorded? (1 mark)	
2. (Total who receive nutrition assessment during the month) – Total assessed and classified (Normal + MAM + SAM + overweight/obese) = (1 mark)	
3. What data sources are used when compiling the health facility NCST monthly report? (1 mark)	
4. Why is important to monitor and report NCST services? (2 marks)	

Module 6: Managing the Quality of NCST Services

Write down the answer. Where multiple choices are provided, circle the correct answer.

Total: 8 marks

1. Name five features of high-quality health care services. (2 marks)	
2. List four steps in the model for improvement. (4 marks)	
3. Name two ways in which a problem with quality of services could be identified. (2 marks)	

Reference 0.2: Pre- and Post-Test Answer Key

Module 1: Introduction to Nutrition

Write down the answer. Where multiple choices are provided, circle the correct answer.
Total: 5 marks

Question	Answer
1. Define the term 'malnutrition'. (1 mark)	Malnutrition: Malnutrition occurs when energy and nutrient intake do not match dietary needs. Malnutrition can either be undernutrition or overnutrition.
2. Compared to an HIV-negative person, how much energy do PLHIV need to consume during the following stages: (2 marks)	Early stages of the infection (i.e., asymptomatic stage)? 10%
	Late stage of the HIV infection (i.e., symptomatic stage)? 20%
3. Name two reasons a client might be losing weight. (2 marks)	Infection such as diarrhoea, HIV/AIDS, TB. Inadequate food intake.

Module 2: Nutrition Assessment and Classification

Write down the answer. Where multiple choices are provided, circle the correct answer.
Total: 11 marks

Question	Answer
1. List the four types of nutrition assessment methods. (2 marks)	1) Anthropometry 2) Biochemical 3) Clinical 4) Dietary
2. Chifundo is age 19 and weighs 42.5 kg. Her height is 163.2 cm. Calculate Chifundo's body mass index (BMI). (1 mark)	16.0 (calculation after rounding off) 16.2 (BMI chart) 16.0 (BMI wheel)
3. What is your classification of Chifundo's nutritional status? (1 mark)	Moderate undernutrition if chart or wheel used
4. David Banda is age 15. He weighs 33.6 kg, and his height is 145.1 cm. What is his BMI-for-age z-score? (1 mark)	16.2 (BMI chart) 16 (BMI wheel) 15.9 (calculation)
5. What is your classification of David Banda's nutritional status? (1 mark)	Normal Moderate malnutrition if had 15.9 from calculation
6. What is the minimum amount of weight a healthy woman should gain per month of pregnancy? (1 mark)	1 kg
7. Describe the signs of bilateral pitting oedema ++. (1 mark)	Oedema of both feet plus lower legs, hands, and/or lower arms
8. A client weighed 60 kg at his first visit but now weighs 55 kg. What	8.3%

	percentage of his weight has he lost? (1 mark)	
9.	What measurement should be used to determine the nutritional status of a pregnant woman? (2 marks)	MUAC Weight

Module 3: Nutrition Counselling and Education

Write down the answer. Where multiple choices are provided, circle the correct answer.

Total: 8 marks

Question	Answer
1. Name 2 differences between counseling and giving information (2 marks)	• Counseling involves listening to a person's problems before offering suggestions to solve problems but counseling is a 2 way exchange and information is given one way • Counseling always involves communication but Information may not be understood
2. Select one word that is not part of good counselling (1 mark)	e. __Interactive f. __Empathy **g. _x_Judgment** h. __Action
3. What are 3 things counsellors should always ask about? (3 marks)	• Symptoms, • ART adherence • Barriers to recommended practices • Supportive resources • Diet • Goals • Possible action steps
4. What is not one of the 4 core needs? (1 mark)	e. __ Drug adherence **f. _x_ Exercise** g. __ Adequate diet h. __ Clinic visits
5. Can you apply the same key principles of ALIDRAA when doing group education? Yes/NO? (1 mark)	Yes

Module 4: Nutrition Care Plans and Support

Write down the answer. Where multiple choices are provided, circle the correct answer.

Total: 5 marks

Question	Answer
1. What are the criteria used to determine if adolescent and adult clients are eligible for the overweight and obesity nutrition care plan? (1 mark)	Adolescents 15–18 years (non-pregnant and non-post-partum): BMI-for-age: • Overweight: ≥ +1 to < +2 • Obese: ≥ +2 Adults ≥ 19 (non-pregnant and non-post-partum): BMI: • Overweight: 25.0 to 29.9 • Obese: ≥ 30.0 Pregnant women and lactating women up to 6 months post-partum: MUAC: • Overweight/obese: ≥ 300 mm
2. What nutrition support should be provided to a client who has normal nutritional status? (1 mark)	• Praise the client for good nutrition practices and explain the need to maintain those practices to avoid becoming undernourished or overnourished. • Review the client's nutrition records and address issues of concern. • Provide tailored counselling, explaining the need for adherence to medication; regular clinic visits; adequate diet; and water, sanitation, and hygiene (WASH) actions.
3. Mr. Mathews is 35 years of age and his BMI is 15.9. What nutrition support should he receive and how much per day? (1 mark)	Severe undernutrition without medical complications • RUTF: Three sachets per day (42 sachets for 2 weeks) • CSB+: 300g per day (4.5 kg for 2 weeks)
4. How often should Mr. Mathews come to the facility for nutrition monitoring? (1 mark)	Every 2 weeks
5. Clients should be referred for economic strengthening, livelihood, and food security support only if they are severely undernourished. (Tick the correct answer.) (1 mark)	_____True __x__ **False**

Module 5: Monitoring and Reporting

Write down the answer. Where multiple choices are provided, circle the correct answer.

Question	Answer
5. In which documents should routine nutrition assessment data be recorded? (1 mark)	NCST Adolescent and Adult Register
6. (Total who receive nutrition assessment during the month) – Total assessed and classified (Normal + MAM + SAM + overweight/obese) = (1 mark)	Zero
7. What data sources are used when compiling the health facility NCST monthly report? (1 mark)	• ART, ANC/PMTCT, and TB register • NCST register • NCST undernourished client management form
8. Why is important to monitor and report NCST services? (2 marks)	• Assess the effectiveness and outcome of nutrition care, support, and treatment interventions • Inform and improve the design of service delivery • Provide timely results to district and national authorities and partners • Identify successful approaches • Advocate for support, resource allocation, and expansion of activities • Monitor availability and use of therapeutic and supplementary food supplies

Module 6: Managing the Quality of NCST Services

Write down the answer. Where multiple choices are provided, circle the correct answer.
Total: 8 marks

1. Name five features of high-quality health care services. (2 marks)	1) Safe 2) Effective 3) Patient-centred 4) Equitable 5) Efficient
2. List four steps in the model for improvement. (4 marks)	1) Identify the problem 2) Analyse the problem 3) Develop changes 4) Test and implement changes/solutions
3. Name two ways in which a problem with quality of services could be identified. (2 marks)	1) Defining a problem and how frequently a problem occurs 2) Defining what effect the problem has on the clients, communities, and service delivery

Reference 0.3: NCST Competencies and Standards

Competency	Minimum Standards
Use anthropometric methods to assess and classify nutritional status	Measure weight
	Measure height
	Calculate BMI
	Look up BMI using reference tables or BMI wheel
	Look up BMI-for-age of an adolescent using reference tables or BMI wheel
	Measure MUAC
Use biochemical methods to assess and classify nutritional status	Interpret blood haemoglobin results
	Take the needed action based on results
Use clinical methods to assess and classify nutritional status	Identify medical conditions and complications that can affect nutritional status
	Conduct RUTF appetite test for a client who is severely undernourished
	Identify physical signs of wasting
	Assess and classify bilateral pitting oedema
Use dietary methods to assess food intake and respond to nutritional status	Use a 24-hour recall to assess a client's food intake
	Use findings of the dietary assessment to address nutrition-related problems
Use the ALIDRAA checklist to counsel a client on nutrition (ALIDRAA: Ask, listen, identify, discuss, recommend, agree, appointment)	Establish rapport with a client
	Ask questions about the client's nutritional status, food intake, and nutrition problems and concerns
	Listen and learn from the client
	Identify nutrition-related problems
	Discuss with the client different options to overcome a problem
	Recommend and negotiate doable actions with the client
	Agree with the client to try one or more options to overcome a problem
	Make an appointment for a follow-up visit
Conduct a nutrition education session	Plan for a nutrition education session
	Deliver a nutrition education session to adolescent and adult clients
Provide nutrition support to an adolescent or adult with normal nutritional status	Identify normal nutritional status in adolescents, adults, pregnant and lactating women (up to 6 months post-partum)
	Provide medical care and support to a client
	Provide nutrition care and support to a client
	Refer and follow up a client
Provide nutrition support to an adolescent or adult with moderate undernutrition	Identify moderate undernutrition in adolescents, adults, pregnant and lactating women (up to 6 months post-partum)
	Provide medical care and support to a client
	Provide nutrition care and support to a client
	Refer and follow up a client
	Transition a client from the care plan for moderate undernutrition to normal nutritional status
Provide nutrition support to an adolescent or adult with severe undernutrition	Identify severe undernutrition without medical complications in adolescents, adults, and pregnant and lactating women (up to 6 months post-partum)
	Provide medical care and support to a client
	Provide nutrition care and support to a client
	Refer and follow up a client

without medical complications	Transition a client from the care plan for severe undernutrition without medical complications to moderate undernutrition
Provide nutrition care and support to an adolescent or adult with severe undernutrition with medical complications	Identify severe undernutrition with medical complications in adolescents, adults, and pregnant and lactating women (up to 6 months post-partum)
	Provide medical care and support to a client
	Provide nutrition care during the initial phase of inpatient care
	Transition a client from the initial phase to rehabilitation phase
	Refer and follow up a client from inpatient to outpatient care
Provide nutrition support to an adolescent or adult who is overweight or obese	Identify overweight and obesity in adolescents, adults, and pregnant and lactating women (up to 6 months post-partum)
	Provide medical care and support to a client
	Provide nutrition care and support to a client
	Refer and follow up a client
Monitor and report on adolescents and adults receiving nutrition assessment, counselling, and support	Record client data in the adult and adolescent nutrition register
	Monitor severely and moderately undernourished clients using the client management forms
	Prepare and submit NCST monthly report
Use the 'model for improvement' method to improve quality of NCST service delivery	Identify a problem that needs to be addressed
	Analyse available information on how the problem occurs, its causes, and its effects
	Develop improvement ideas
	Test and implement change ideas using the PDSA cycle
	Monitor quality improvement activities

0.4 Discussion (5 minutes)

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

MODULE 1

Introduction to Nutrition

4 hours

#	Description	Duration
1.0	Module Objectives	5 minutes
1.1	Nutrition for Good Health	30 minutes
1.2	The Link between Nutrition and Infection	2.5 hours
1.3	Integrating Service Delivery to Prevent and Manage Malnutrition	45 minutes
1.4	Discussion and Module Evaluation	10 minutes

Learning objectives

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

4. Explain the importance of nutrition for good health
5. Describe the link between nutrition and infection
6. Explain the keys to food and water safety and good hygiene
7. Assist clients with dietary management of symptoms and ART side effects
8. List interventions that can prevent and manage malnutrition

Materials needed

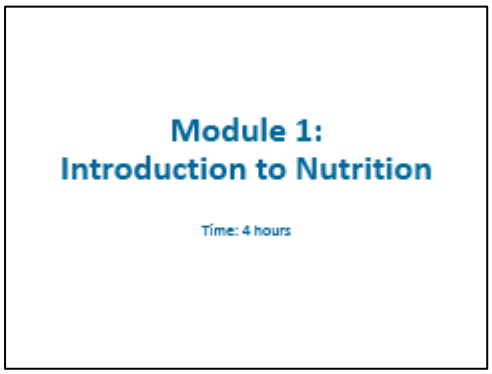
- Flipchart and stand
- Markers and tape
- LCD projector
- Module 1 PowerPoint slides
- Copy of Module 1 Evaluation Form for each participant
- Participant Manual—Module 1

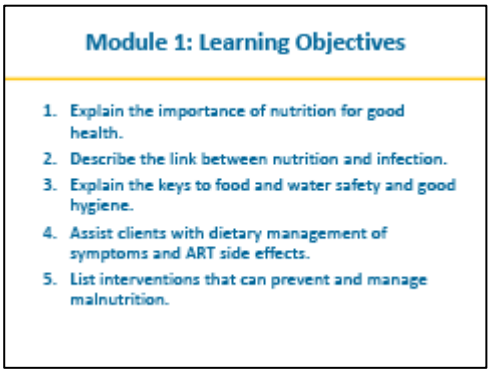
Advance preparation

- Review **PowerPoint** slides for **Module 1**.
- Review Module 1 of the **Participant Manual**.

1.0. Module Objectives (5 minutes)

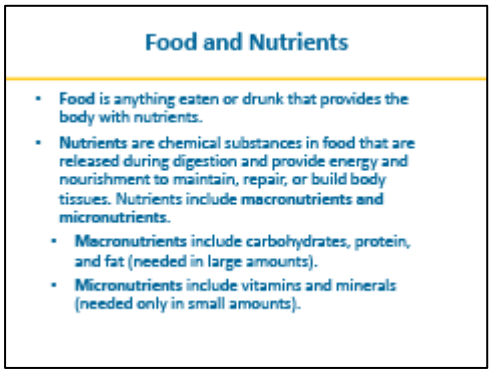
- Show **Slide 1.1** and then present the Module 1 learning objectives on **Slide 1.2**.



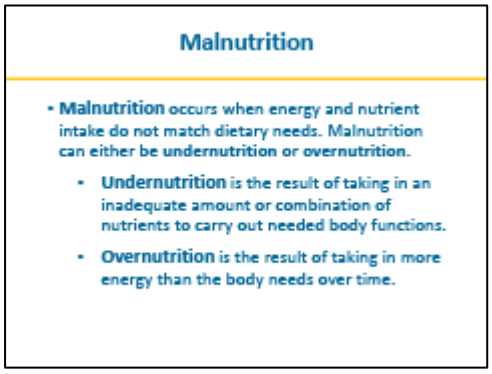


1.1. Nutrition for Good Health (30 minutes)

- Ask participants, 'What is the difference between **"food"** and **"nutrients"**?' List responses on a flipchart. Compare them with the information on **Slide 1.3.**



- Ask participants, 'What is your understanding of the term **"malnutrition"**?' List responses on a flipchart. Compare them with the information on **Slide 1.4.**

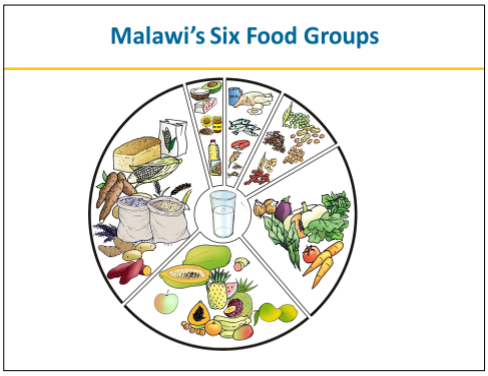


- Explain that in this course, the term 'malnutrition' will be used to refer to both 'undernutrition' and 'overnutrition'. Explain that it is common for people to use the term malnutrition to refer to undernutrition, although overweight and obesity are also forms of malnutrition and put people at risk of diabetes, hypertension, and other health problems.

- Refer participants to **Reference 1.1: Key Nutrition Terms** in the **Participant Manual** and ask the participants to review the reference later.
- Explain that for good nutrition, people need to eat the 'right variety' and the 'right quantity' of food.
- Ask participants why they think good nutrition is important for health. Write responses on a flipchart.
- Compare responses with **Slide 1.5**.

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

- Explain that the **right variety of food** includes many different foods from each of the six food groups: vegetables, fruits, legumes and nuts, animal-source foods, fats, and staple foods provide the body with the nutrients it requires for good health.
- Explain that eating a variety of foods from each good group helps ensure that all micronutrient (vitamin and mineral), protein, and fat requirements for good health are met.
- Show the six food groups on **Slide 1.6** and ask participants if they have any comments on the various foods presented in each group**.**



- Explain that people should eat food from all six groups every day. Tell participants that **Reference 1.2: Examples of Foods from the Six Food Groups** in the **Participant Manual** has additional information on Malawi's six food groups that they can review later.

- Ask: 'When might you want to talk to patients about diversifying the foods they eat?' Ensure the following answers are mentioned:
  - As part of group health or nutrition education talks at the clinic or in the community
  - If a patient is having trouble eating or digesting certain foods
  - If a client shows clinical signs of a nutrient deficiency, such as lethargy, difficulty seeing, hair loss, pale skin, or wasting
  - If laboratory results indicate a micronutrient deficiency
  - When clients have higher-than-normal micronutrient needs, including young children and pregnant and lactating women
- Explain that eating a variety of foods is particularly important for pregnant and lactating women, who have higher-than-normal protein and micronutrient requirements. Explain that micronutrient deficiency is the most common type of malnutrition in pregnant women.
- Ask: 'What are some of the common nutrient deficiencies in pregnant and lactating women and in their diets? What do you do to help correct those deficiencies?' Complete participants' answers with the information in the box below.

Common Nutrient Deficiencies during Pregnancy and Lactation and How to Address Them

The best way to reduce micronutrient deficiencies is to eat a balanced diet with a variety of foods from all of the food groups.

Iron: Counsel women to be sure to take their supplements. Eat iron-rich foods, such as meat and beans, as often as possible.

Folate: Counsel women to be sure to take their iron/folate supplements. Eat green vegetables and beans.

Vitamin A: Eat leafy green vegetables and yellow fruits and vegetables, such as mangoes, carrots, and pumpkins.

Calcium: Eat dairy products such as milk, yoghurt, and cheese.

Healthy fats: Eat nuts and seeds, avocados, and fish. Cook with vegetable oil.

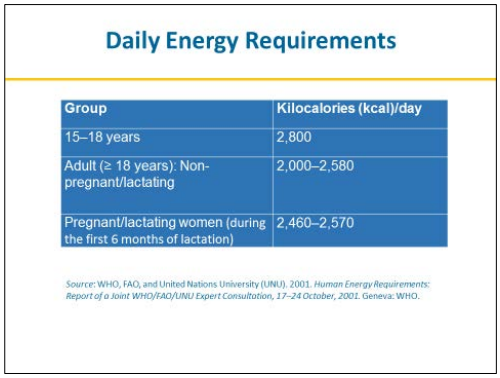
Iodine: Use iodized salt.

- Explain that, in addition to eating a good variety of foods, pregnant/lactating women must also supplement their diets with iron/folate tablets to ensure their needs are met. All pregnant women are supposed to take iron/folate supplements every day throughout pregnancy.

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

- Explain that energy (commonly referred to as 'kilocalories' or 'calories') comes from carbohydrates, proteins, and fats. Energy is needed for growth, physical activity, pregnancy, lactation, fighting infection, and maintaining basic body functions, such as breathing.

- Show **Slide 1.7** and explain that WHO has estimated daily energy requirements for males and females in different age groups.



- Explain that these requirements increase in adolescence and due to special needs, such as pregnancy and lactation and can change according to activity level, body composition, and the presence of infections.
- Explain that while some clients might not be eating the right variety of foods, other clients might have a problem with the quantity of food they eat; they could be eating too much energy (kcal) or not enough energy (kcal). Explain that a client is getting the right amount of kcal/energy if he/she is maintaining a healthy weight. Eating too many kcal will cause weight gain, and eating too few will cause weight loss.
- Refer participants to **Table 1** in **Reference 1.3: Nutrition Requirements for HIV-Negative Adolescents and Adults** in the **Participant Manual** (see below). Point out the second column on the table, which provides the energy requirements for **healthy** HIV-negative individuals.

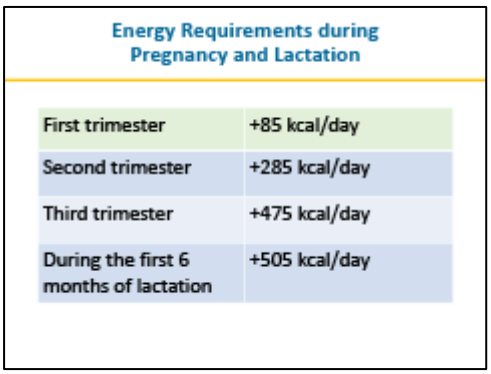
Table 1. Energy Requirements for HIV-Negative Adolescents and Adults

Age group	Requirement (kcal/day)
15–18 years	**2,800**
Adult (≥ 18 years): Non-pregnant/lactating	**2,000–2,580**
Pregnant/lactating women (during the first 6 months of lactation)	**2,460–2,570**

Source: WHO, FAO, and United Nations University (UNU). 2001. *Human Energy Requirements: Report of a Joint WHO/FAO/UNU Expert Consultation, 17–24 October 2001*. Geneva: WHO.

- Ask: 'What are two different ways a person could increase the amount of kcal they get from food each day?'
- Explain: The number of kcal obtained from food per day can be increased by increasing the amount/volume of food eaten or by eating foods that have higher energy content. Oily foods such as vegetable oils, avocados, and nuts are higher in energy, whereas foods with high water and fibre content, such as vegetables, have less energy. A client's nutrition-related problems might be resolved by addressing issues of both food variety and quantity.

- Explain: The daily energy requirements for pregnant and lactating women are higher than the requirements for other adults.
- Show **Slide 1.8** and review the requirements for additional energy during pregnancy and lactation.



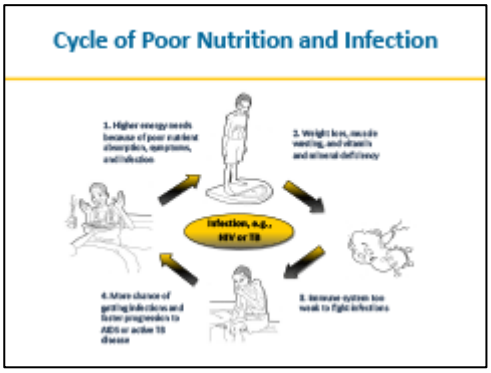
- Explain that the extra energy is used for growth of the foetus and placenta, to build fat reserves for lactation, and to preserve the woman's own nutritional status while she provides nutrition to her baby.
- Ask participants to go to **Exercise 1.1** in the **Participant Manual**. Ask them to take a few minutes to estimate how many kilocalories are in each of the foods listed.
- After finishing the exercise, ask volunteers to share their answers. Review the answers from the table below with the entire class.

Exercise 1.1: Energy Content of Common Foods

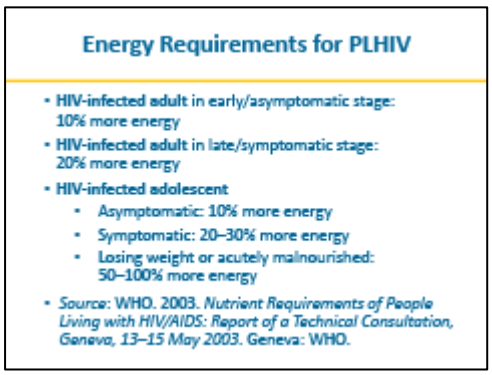
Quantity and Name of Common Food	Kilocalories
One cup of whole milk	150
One banana	105
One avocado	280
A handful of groundnuts	160
An ear of roasted maize	75
Two slices of white bread	160
One roasted chicken thigh	245
Tablespoon of oil	124
One egg	70
One potato	120
One mandasi/vitumbua (homemade doughnut)	128
One medium-size roasted or boiled sweet potato	100

1.2. The Link between Nutrition and Infection (2 ½ hours)

- Explain that infections, including HIV and TB, affect the way that the body uses the nutrients from food.
- Show **Slide 1.9** and follow the arrows to explain the cycle of poor nutrition and infection:
  - Infections such as HIV and TB increase energy needs for a variety of reasons: The body needs more energy to mount an immune response; an infected person doesn't absorb or metabolize nutrients as efficiently as a healthy person; and symptoms such as diarrhoea and vomiting increase nutrient losses (step 1).



  - At the same time, it can be difficult to meet these increased energy needs due to loss of appetite, poor food access, or symptoms such as mouth sores that make it difficult to eat or swallow.
  - As a result, people with infections often experience weight loss, muscle wasting, and micronutrient deficiencies (step 2), making it more difficult for the body to mount a good immune response to disease (step 3).
  - Due to a weakened immune system, people become more vulnerable to more infections or faster progression to AIDS or active TB (step 4). It is therefore easy to get caught in a cycle of poor nutrition and worsening infection.
- Explain that for an HIV-infected person to maintain the same body weight he/she had before becoming infected, he/she must consume more energy/kcal every day than an uninfected person.
- Show **Slide 1.10** and explain that energy requirements for maintaining weight are greater for adolescents and adults with HIV. Point out that energy requirements differ depending on the presence of HIV-related symptoms such appetite loss, diarrhoea, nausea, and weight loss, and of other opportunistic infections.



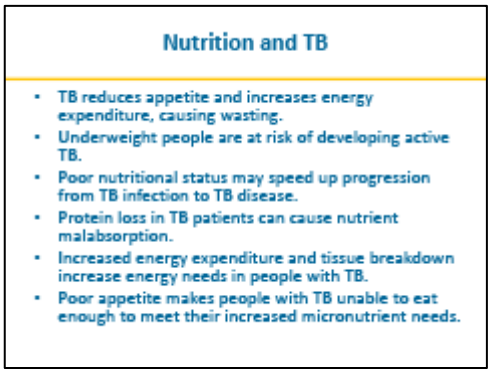
- Explain that, unless specific nutrient deficiencies are identified, PLHIV have the same nutrient (protein and micronutrient) requirements as uninfected people.
- Refer participants to Table 1 in Reference 1.4: Nutrition Requirements for HIV-Positive Adolescents and Adults. The information is provided in the table below.

Table 1. Energy Requirements for PLHIV (kcal/day)

Group	Healthy	HIV-infected	
		Asymptomatic	Symptomatic
		10% more energy	20% more energy
Adolescents 15–18 years	2,800	**+ 280**	**+ 560**
Adults			
Non-pregnant/lactating	2,000–2,580	**+ 200 to 257**	**+ 400 to 514**
Pregnant/lactating women (during the first 6 months of lactation)	2,460–2,570*		

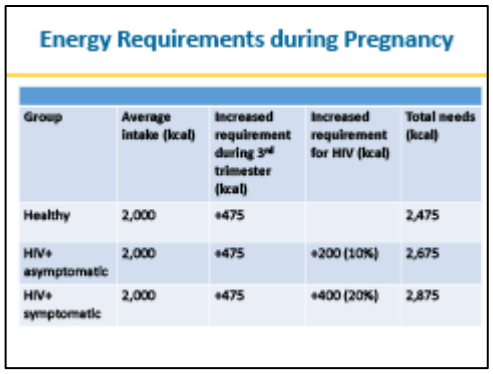
* Source: WHO, FAO, and United Nations University (UNU). 2001. *Human Energy Requirements: Report of a Joint WHO/FAO/UNU Expert Consultation, 17–24 October, 2001.* Geneva: WHO.

- Show **Slide 1.11** on nutrition and TB. Explain that similar to HIV, TB reduces appetite and increases the body's use of energy, which increases the risk of wasting. Underweight people have a higher risk of becoming infected with TB and of developing active TB.



- Explain: When you are talking to a patient, it is not helpful to tell him/her to increase energy intake by 10 or 20 percent because most people do not know how to do that. Rather, it is important to encourage the patient to eat larger portions of locally available health food or eat more healthy snacks.
- Explain that while HIV and TB infections increase the amount of energy needed to maintain weight, not all clients will need to gain weight. Some clients will be overweight or obese and could benefit from counselling to safely lose weight through exercising more, reducing intake of sugary beverages and sweets, and replacing those foods with fruits and vegetables.

- Explain: As a health care provider, your goal should be to help all clients achieve and maintain a healthy weight. In Module 2, we will talk more about how to determine if a client has a healthy weight.
- Explain that for pregnant women, maintaining a healthy weight includes gaining adequate weight to support a healthy pregnancy and baby.
- Explain: Remember that HIV-positive women already have increased energy needs (10% if asymptomatic and 20% if symptomatic), so when they become pregnant, it becomes more difficult to get enough energy every day to stay healthy and support a health pregnancy. Show **Slide 1.12** and review the information.



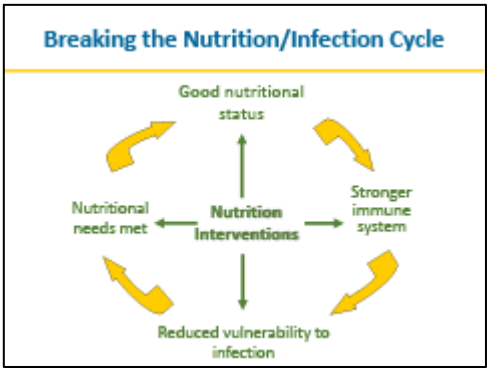
Energy Requirements during Pregnancy

Group	Average intake (kcal)	Increased requirement during 3rd trimester (kcal)	Increased requirement for HIV (kcal)	Total needs (kcal)
Healthy	2,000	+475		2,475
HIV+ asymptomatic	2,000	+475	+200 (10%)	2,675
HIV+ symptomatic	2,000	+475	+400 (20%)	2,875

- Ask participants: What are some suggestions you could give to an HIV-positive mother to help her gain adequate weight during her pregnancy? Complete participant answers with the following suggestions:
  - Add convenient snacks between meals
  - Take a larger portion at each meal
  - Add some high-energy food to your meal, such as groundnuts, oil, or avocado
  - Drink something with energy with or between your meals, such as milk or Toboa
  - Take your ARV every day, as prescribed
- Ask: How could taking ART help a mother to gain enough weight during pregnancy? Complete participant responses with the following information:
  - For women with advanced HIV, starting ART often increases appetite and reduces infections that lead to nutrient losses through diarrhoea or vomiting.
  - For women who still feel healthy, ART will help ensure that their HIV disease does not progress further during pregnancy and lead to other problems.
  - Ensuring that HIV-positive women adhere to ART during pregnancy is a key intervention for ensuring good pregnancy outcomes and preventing mother-to-child transmission of HIV.

PRESENTATION: Breaking the nutrition/infection cycle

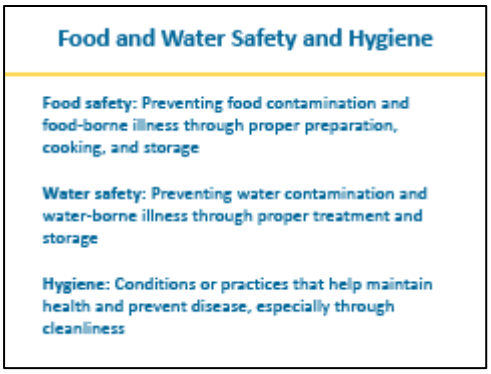
- Show **Slide 1.13** and explain that good nutrition strengthens the immune system so the body can prevent and fight infection.



- Explain that there are many interventions that can help break the cycle of worsening nutritional status and infection, including:
  - Reducing the risk of illnesses that cause vomiting, diarrhoea, appetite loss, or other symptoms that are likely to lead to weight loss
  - Improving food and water safety and hygiene practices, which can significantly reduce risk of those types of illnesses
  - Managing symptoms and drug side effects

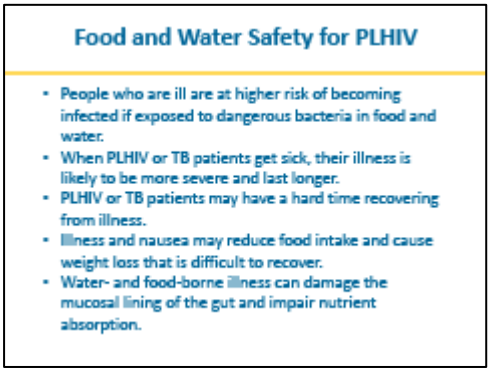
PRESENTATION: Breaking the nutrition/infection cycle—Food and water safety and hygiene

- Ask: What are 'food safety' and 'water safety'? What is 'hygiene'?
- **Show Slide 1.14** to complete participants' answers.



- Explain that food- and water-borne illnesses are caused by microorganisms, such as bacteria, viruses, and parasites. Common water-borne illnesses include cholera and typhoid.
- Explain: Sometimes you can tell that food has been contaminated because it smells or looks bad or grows mould. However, **many dangerous microorganisms cannot be detected by looking at or smelling food**.

- Ask: What are the most common symptoms of food- or water-borne disease? Participants should say:
  - Stomach pains
  - Vomiting
  - Diarrhoea
- Explain that symptoms depend on the cause of the disease. Symptoms may occur very quickly after eating the food or may take days or even weeks to appear. For most food-borne diseases, symptoms occur 6 to 72 hours after the food has been eaten.
- Show **Slide 1.15** and explain why safe food and water are especially important for PLHIV.



- Explain: Vulnerable people should get medical treatment for diarrhoea if it lasts more than 3 days or when the diarrhoea is bloody.
- Refer participants to **Reference 1.5: Food and Water Safety and Hygiene Messages** (see below) and review the information with the class.

Reference 1.5: Food and Water Safety and Hygiene Messages

1. Use treated water for drinking and store it safely.

- Treat water to make it safe to drink using one of these options:
  - Hypochlorite (chlorine) solution
  - Boiling
  - Commercial filter
- Store treated water in a covered container with a narrow neck and a tap if possible.
- Do not touch the water in the container with your hands. Pour it into a clean pitcher to serve it or hang a ladle on the wall to dip the water to serve it.

2. Wash hands properly.

- Handwashing with soap prevents infection from spreading from person to person.
- Rinsing hands is not enough—use soap or ash every time you wash your hands.
- Wash your hands under poured or flowing water to remove dirt and germs. Do not wash your hands in a basin of water that many people use to wash their hands in. The water becomes dirty, and washing your hands in this water does not prevent infection.
- Wash your hands **before** you handle, prepare, or eat food; before you feed someone or give them medicines; and often while you are preparing food.
- Wash your hands **after** you go to the toilet, clean someone who has defecated, blow your nose, cough, sneeze, or handle an animal or animal waste.
- Wash your hands **both before and after** you take care of someone who is sick.

3. Always use a latrine.

- Keep latrines as far away from houses or cooking areas as possible.
- Upgrade pit latrines with cleanable platforms, covers over the pits, housing that provides privacy, and nearby handwashing stations.
- Clear the path to the latrine by removing stones and branches and filling in holes.
- Keep the latrine platform, seat, walls, and other surfaces clean and free of faeces. Keep all anal cleaning materials in the latrine. Put a scoop of lime or ash in the latrine after defecating to reduce odour and keep flies away.
- Add supports (e.g., poles, ropes, stools) for children or weak household members so that they can use the latrine comfortably.
- If you do not have a latrine, put a bedside commode or bedpan next to the bed of children or weak household members and empty it regularly.
- Always wash your hands after defecating.
- If you do not have a latrine, bury faeces away from your house.

4. Keep food preparation areas clean.

- Wash all surfaces and equipment used to prepare or serve food with soap and water (and bleach, if possible).
- Protect food from insects and animals by covering it with netting or cloth or keeping it in containers.

5. Separate raw and cooked food.

- Keep raw eggs, meat, poultry, fish, and seafood away from other foods because they can contain bacteria that cause illness.
- Use separate knives and cutting boards for raw animal foods.
- Store food in covered containers to avoid contact between raw and cooked foods.

6. Cook food thoroughly.

- Cook meat, poultry, eggs, fish, and seafood until they are well done. For meat and poultry, cook until the juice is clear, not pink.
- Bring soups and stews to a boil, at least until you see the first big bubbles.
- Reheat already cooked food thoroughly by bringing it to a boil or heating it until it is too hot to touch. Stir the food while reheating it.

7. Keep foods at safe temperatures.

- Do not leave cooked food out at room temperature for more than 2 hours.
- Reheat already cooked food before serving it.
- Do not store food in a refrigerator for more than 2 days.
- Do not thaw frozen food at room temperature.

8. Eat safe foods.

- Buy only fresh and healthy foods.
- Do not use food beyond its expiry date.
- Use pasteurised milk or boil fresh milk before use.
- Wash raw vegetables and fruits with treated water or peel the skin before eating.

PRESENTATION: Breaking the nutrition/infection cycle—Dietary management of symptoms

- Explain that an important part of breaking the nutrition/infection cycle is to address symptoms and nutrition-related problems as soon as they begin. Nutrition-related problems are sometimes due to HIV or opportunistic infections, side effects caused by ART, or other factors, such as food insecurity or lack of knowledge.
- Explain that weight loss, loss of appetite, and other problems with eating are common among people who are living with HIV or TB and are sick.
- Ask participants what symptoms their patients most often experience.
- Ask: Why do PLHIV sometimes lose weight that they do not intend to lose? Complete responses with the following information:
  - Reduced food intake due to not feeling well, thrush, loss of appetite, etc.
  - Not increasing the energy intake to meet the increased needs due to HIV and AIDS
  - Increased nutrient losses due to illness
  - Client needs to start on ART or needs a different ART regimen
  - Lack of physical activity leading to muscle loss
  - Lack of family support
  - Stress and anxiety
  - Underlying, unidentified infection
  - Growth of an adolescent
- Explain: Often PLHIV have uncomfortable symptoms that make it hard or undesirable to eat. Sometimes these symptoms are a result of side effects caused by ART. However, eating the right things at the right time can sometimes help reduce symptoms.
- Refer participants to **Reference 1.6: Dietary Management of Symptoms** (below) in the **Participant Manual**. Ask participants to form pairs and take 5–10 minutes to read through the table and discuss it with each other. Ask if there are any questions or anything that they would add to the list.

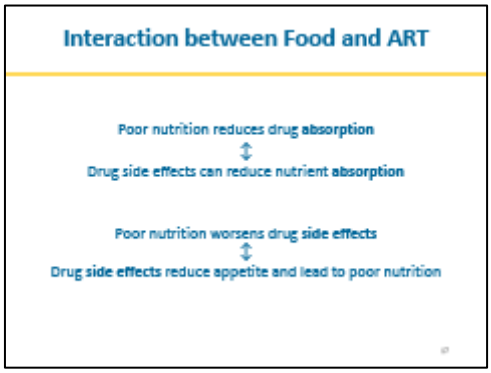
Reference 1.6: Dietary Management of Symptoms

Symptom	Diet
Anorexia (appetite loss)	• Stimulate appetite by eating favourite foods. • Eat small amounts of food more often. • Eat more energy-dense foods, such as vegetable oils, nuts, and avocados. • Avoid strong-smelling foods.
Diarrhoea	• Drink plenty of fluids (e.g., soups, diluted fruit juices, boiled water, and light herbal teas) to prevent dehydration. • Avoid citrus fruits, which irritate the stomach. • Eat foods rich in soluble fibre (e.g., bananas, peas, and lentils) to help retain fluids. • Eat fermented foods such as yoghurt. • Eat easily digestible foods, such as rice, bread, porridge, potatoes, and crackers. • Eat small amounts of food frequently. • Continue to eat frequently after illness to recover weight and nutrient loss. • Eat soft, mashed fruits and vegetables. • Drink non-fat milk if there is no problem with lactose. • Boil or steam foods if diarrhoea is associated with fat malabsorption. • Avoid or reduce intake of dairy products, caffeine, alcohol, fatty foods, fried foods, and gas-forming foods, such as cabbage, onions, and carbonated soft drinks.
Fever	• Drink plenty of fluids to prevent dehydration. • Continue to eat small, frequent meals as tolerated.
Nausea and vomiting	• Avoid an empty stomach, which makes nausea worse. • Eat small, frequent meals. • Eat soups, unsweetened porridge, and fruits such as bananas. • Eat slightly salty and dry foods, such as crackers, to calm the stomach. • Avoid spicy and fatty foods. • Avoid caffeine and alcohol. • Drink liquids such as clean boiled water, herbal teas, and lemon juice in hot water. • Avoid lying down immediately after eating—wait at least 20 minutes. • Rest between meals.
Thrush	• Eat soft, mashed foods, such as rice, carrots, scrambled eggs, potatoes, bananas, and soup. • Eat cold or room-temperature foods. • Avoid spicy, salty, or sticky foods that may irritate mouth sores. • Avoid sugary foods that help yeast grow. • Drink plenty of fluids, but avoid citrus juices and alcohol. • Use a spoon or cup to eat small amounts of foods. • Tilt your head back when eating to help with swallowing. • Rinse your mouth with boiled warm, salty water after eating to reduce irritation and keep yeast from growing.
Constipation	• Eat more high-fibre foods, such as rice, green leafy vegetables, and washed fruits with the peel. • Drink plenty of fluids. • Avoid processed or refined foods. • Avoid cleansing practices, such as using enemas and laxatives.

Symptom	Diet
Bloating or heartburn	• Eat small, frequent meals. • Avoid gas-forming foods (cabbage, soda). • Drink plenty of fluids. • After eating, wait a while before sleeping to allow food to digest.

PRESENTATION: Breaking the nutrition/infection cycle—Dietary management of symptoms

- Explain that clients may also face challenges with regard to nutrition and medication. Show and explain **Slide 1.16**.



- Explain that helping clients manage food-drug interactions and side effects of ART is important for promoting adherence to ART, reducing risk of opportunistic infections, and helping clients maintain a healthy weight.
- Explain the following:
  - Different medications interact differently with different foods. For example, fatty foods reduce the absorption of certain ARVs, such as stavudine (d4T) and zidovudine (AZT). Other drugs alter the sense of taste, making it less pleasant for someone to eat and reducing food intake.
  - PLHIV can often manage metabolic changes and other side effects without stopping treatment by making changes in their diets.
  - However, clients who are not prepared to manage side effects may stop taking their medication, take the medication incorrectly, or reduce food intake to inadequate levels. It is important to inform your clients about potential side effects of medications and tell them that you can help them with strategies to manage them.
  - Understanding medication side effects will help you work with clients to select nutritious foods and maintain good nutritional status. It will help in managing minor side effects that can result in reduced food intake (such as changes in taste or upset stomach) and reduce chronic side effects such as increased blood sugar.
  - Suggestions for nutrition practices should be based on a clear understanding of the specific requirements and likely side effects of the drugs that a person is taking. **Asking a person what medications he/she is taking is a critical part of nutrition assessment**.

- Ask: Have any of you seen food- or nutrition-related problems among your clients who are on ART? What have you seen? What solutions did you propose to the client?
- Refer participants to **Reference 1.7: Food Guidance for HIV Medications** (see below) in the **Participant Manual.** Give participants a few minutes to look through the information.

Reference 1.7 Food Guidance for HIV Medications

Drug	Nutrition guidance	Possible side effects
Antiretroviral drugs (ARVs)		
Nucleoside and nucleotide reverse transcriptase inhibitors (NRTIs)		
Tenofovir (TDF)	Take with or without food.	Headache, diarrhoea, nausea, vomiting, abdominal pain, rash, headache, flatulence, anorexia, dizziness, insomnia, depression, sweating, renal function impairment
Zidovudine (AZT)	Take with or without food but NOT a high-fat meal. Avoid alcohol.	Anaemia, anorexia, nausea, vomiting, bone marrow suppression, headache, fatigue, constipation, fever, dizziness, dyspnoea, insomnia, muscle pain, rash, lipodystrophy, cardiovascular disease
Stavudine (d4T)	Take with or without food. Avoid alcohol.	Nausea, vomiting, diarrhoea, peripheral neuropathy, chills and fever, anorexia, stomatitis, diarrhoea, anaemia, headaches, rash, pancreatitis, lipodystrophy, cardiovascular disease
Abacavir (ABC)	Take with or without food, but taking with food reduces side effects. Alcohol increases levels of side effects.	Nausea, vomiting, fever, allergic reaction, anorexia, abdominal pain, diarrhoea, anaemia, rash, hypotension, pancreatitis, dyspnoea, weakness and insomnia, cough, headache
Lamuvidine (3TC)	Take with or without food.	Nausea, bloating, vomiting, diarrhoea, loss of sleep
Emtricitabine (FTC)	Take with or without food.	Diarrhoea, headache, nausea, rash, skin discoloration, lipodystrophy
Non-nucleoside reverse transcriptase inhibitors (NNRTIs)		
Nevirapine (NVP)	Take with or without food.	Nausea, vomiting, rash, fever, headache, skin reactions, fatigue, stomatitis, abdominal pain, drowsiness, paraesthesia, high hepatoxicity
Efavirenz (EFV)	Take with or without food but NOT with a high-fat meal. Take just before bedtime. Avoid alcohol.	Elevated blood cholesterol levels, elevated triglycerides, rash, dizziness, anorexia, nausea, vomiting, diarrhoea, dyspepsia, abdominal pain, flatulence
Protease inhibitors (PIs)		
Lopinavir/ Ritonavir (LPV/r)	Take with or without food.	Nausea, vomiting, weakness, diarrhoea, headache, dizziness, abdominal pain, fever, diabetes, anorexia, hepatitis, jaundice
Ritonavir (RTV)	Take with food.	Nausea, vomiting, diarrhoea, hepatitis, jaundice, weakness, anorexia, abdominal pain, fever, diabetes, headache, dizziness, possible increased risk of lipodystrophy

Atazanavir (ATV/r)	Take with food.	Gastrointestinal complaints, renal toxicity (especially when renal function is already reduced), jaundice
Once daily single tablet regimen		
Atripla (Efavirenz 600 mg, Emtricitabine 200 mg, Tenofovir 300 mg [EFV/FTC/TDF])	Take on an empty stomach (1 hour before eating or 2 hours after eating), preferably at bedtime. Avoid alcohol.	See above for Efavirenz, Emtricitabine, and Tenofovir

- Ask the participants: Do you have any experiences with patients on these medications that you can share? Lead a brief discussion around participants' responses.
- Refer participants to **Reference 1.8: Food Guidance for TB Medications** in the **Participant Manual** (see below) and ask if there are any comments or questions about the information in the table.

Reference 1.8 Food Guidance for TB Medications

Drug	Nutrition guidance	Possible side effects
Rifampicin (RIF)	Take on an empty stomach, 1 hour before or 2 hours after a meal. Avoid alcohol.	Itching; flushing; headache; drowsiness; dizziness; vomiting; rash; fever; swelling of the eyes and face, lips, tongue, throat, arms, hands, feet, ankles, or lower legs; blisters; nausea; loss of appetite; dark urine; joint pain or swelling; jaundice (yellowing of the skin and eyes); diarrhoea; stomach cramps; gas; vision changes; painful irregular menstrual periods; muscle weakness; difficulty in concentrating
Pyrazinamide (PZ)	Take on an empty stomach, 1 hour before or 2 hours after a meal. Avoid alcohol.	Joint pains (arthralgia), nausea, vomiting, anorexia, sideroblastic anaemia, skin rash, urticaria, pruritus, dysuria, intestinal nephritis, malaise, porphyria (rarely), fever, loss of appetite, aches or joint pains
Isoniazid (IHZ)	Take on an empty stomach, 1 hour before or 2 hours after a meal. Avoid alcohol.	Tiredness, nausea, loss of appetite, numbness or tingling in the hands or feet
Ethambutol (ABC)	Take with food. Avoid alcohol.	Vision problems, loss of appetite, upset stomach, vomiting, numbness and tingling in the hands or feet, inability to see the colors red and green, skin rash, itching

1.3 Integrating Service Delivery to Prevent and Manage Malnutrition (45 minutes)

- Ask participants what kind of nutrition services health care facilities can provide to prevent and manage malnutrition. Compare responses with information on **Slide 1.17**.

- Explain that health care workers can help prevent and manage malnutrition through nutrition care, support, and treatment (NCST). Every client should have a nutrition assessment to determine nutritional status. Service providers should then assess the causes of any malnutrition, counsel clients on how to improve their nutritional status, and refer them for appropriate medical care or social support.
- Explain that nutrition support can include therapeutic and supplementary foods for severely and moderately malnourished clients, water purification tables, micronutrient supplementation, and referral to community economic strengthening, livelihoods, and food security (ES/L/FS) programmes.
- Ask participants what nutrition activities can be integrated into routine care offered at their health facility. List responses on a flipchart.
- Refer participants to **Reference 1.9 Nutrition Interventions That Can Be Delivered at Health Facility Contact Points** in the **Participant Manual** (see below) and give them 10 minutes to review the information on nutrition interventions that can be delivered at health care delivery contact points.

Reference 1.9 Nutrition Interventions That Can Be Delivered at Health Facility Contact Points

Health Service Contact Point	Nutrition Activities
Antenatal care (ANC) and prevention of mother-to-child transmission of HIV (PMTCT) services	• Assess and monitor nutritional status and weight gain of pregnant women every month. • Counsel and educate on maternal nutrition during pregnancy, breastfeeding, child spacing, • Counsel and educate on the core needs for PLHIV and TB clients: adequate diet, adherence to medication, regular clinic visits, and WASH. • Provide iron/folic acid. • Refer for supplementary food if severely or moderately undernourished. • Provide HIV testing and counselling; if HIV-positive, initiate ART immediately. • Provide standard ANC according to the national guidelines. • Refer clients to ES/L/FS support if needed.
Maternity care	• Initiate breastfeeding within 30 minutes of birth. • Counsel on good breastfeeding practices. • Counsel and educate on the core needs for PLHIV and TB clients: adequate diet, adherence to medication, regular clinic visits, and WASH. • Provide iron/folic acid supplements. • Refer for supplementary food if severe or moderately undernourished. • If mother is HIV-positive, ensure that the mother and infant are taking ART as prescribed.
HIV-exposed child and mother-infant pair clinics	• Assess and monitor the mother's nutritional status and child's growth every month. • Counsel on and support breastfeeding, and counsel on complementary feeding. • Counsel and educate on the core needs for PLHIV and TB clients: adequate diet, adherence to medication, regular clinic visits, and WASH. • Provide iron/folic acid supplementation for the mother for 6 months. • Refer for therapeutic food if severely undernourished. • Refer for supplementary food if moderately undernourished. • Ensure that the mother and infant are taking ART as prescribed. • Provide the infant with immunisation, vitamin A supplementation, and deworming. • Refer clients to ES/L/FS support if needed.
Medical ward	• Assess and monitor the client's nutritional status while admitted in the ward. • Refer or provide nutrition care and support depending on the client's nutritional status: normal, moderate undernutrition, severe undernutrition, overweight, or obese. • Counsel and educate on the core needs for PLHIV and TB clients: adequate diet, adherence to medication, regular clinic visits, and WASH.
Outpatient departments (OPDs)	• Assess and monitor the client's nutritional status on every visit. • Counsel and educate on the core needs for PLHIV and TB clients: adequate diet, adherence to medication, regular clinic visits, and WASH. • Refer or provide nutrition care and support depending on the client's nutritional status: normal, moderate, severe, overweight, or obese. • Refer clients to ES/L/FS support if needed.

TB clinics	• Assess and monitor the client's nutritional status on every visit. • Counsel and educate on the core needs for PLHIV and TB clients: adequate diet, adherence to medication, regular clinic visits, and WASH. • Refer or provide nutrition care and support depending on the client's nutritional status: normal, moderate, severe, overweight, or obese. • Refer clients to ES/L/FS support if needed.
Pre-ART and ART clinics	• Assess and monitor the client's nutritional status on every visit. • Counsel and educate on the core needs for PLHIV and TB clients: adequate diet, adherence to medication, regular clinic visits, and WASH. • Refer or provide nutrition care and support depending on the client's nutritional status: normal, moderate, severe, overweight, or obese. • Refer clients to ES/L/FS support if needed.
Adolescent clubs/ Teens' Clubs	• Assess and monitor adolescent's nutritional status on every visit. • Counsel and educate on the core needs for PLHIV and TB clients: adequate diet, adherence to medication, regular clinic visits, and WASH. • Refer or provide nutrition care and support depending on the client's nutritional status: normal, moderate, severe, overweight, or obese. • Refer clients to ES/L/FS support if needed.

- When the participants finish reviewing **Reference 1.9**, explain that by the end of this training course, they will understand in more detail where and how they can integrate nutrition interventions at their health facilities.

1.4 Discussion and Module Evaluation (10 minutes)

- Allow time for questions and discuss any issues that need clarification.
- Distribute copies of the **Module 1 Evaluation Form** (see below).
- Explain to the participants the following:
  - Participants should rate whether the training achieved the module's objectives.
  - The evaluation form has five scoring criteria: 1= strongly disagree, 2=disagree, 3=neither agree nor disagree, 4 = agree and 5=strongly agree.
  - Tick on the appropriate box of the scoring criteria (1–5).

MODULE 1 EVALUATION FORM

Date: _____ Place of work: _____

Please rate each training objective in the table using the scoring system; tick where appropriate.

	1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree
1. The training achieved its objective of explaining the importance of nutrition for good health					
2. The training achieved its objective of describing the link between nutrition and infection					
3. The training achieved its objective of explaining the keys to food and water safety and good hygiene					
4. The training achieved its objective of explaining how to assist the client with dietary management of symptoms and ART side effects					
5. The training achieved its objective of listing interventions that can prevent and manage malnutrition					

General comments:

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

What was good about this module?

What was not good about this module?

What information would you like added to this module to assist you in your work?

MODULE 2

Nutrition Assessment and Classification

6 hours

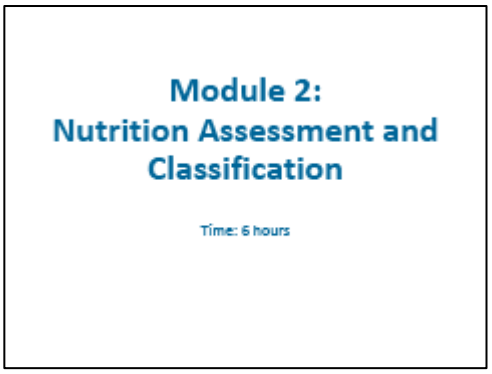
#	Description	Duration
2.0	**Module Introduction** **Review of Module 1 (20 minutes)** **Module Objectives (5 minutes)**	**25 minutes**
2.1	**Nutrition Assessment Methods**	**20 minutes**
2.2	**Anthropometric Measurements**	**3 hours**
2.3	**Biochemical Assessment**	**20 minutes**
2.4	**Clinical Assessment** Clinical Assessment for Clients without SAM (25 minutes) Clinical Assessment for Clients with SAM (20 minutes)	**45 minutes**
2.5	**Dietary Assessment**	**30 minutes**
2.6	**Classifying Nutritional Status**	**30 minutes**
2.7	**Discussion and Evaluation of the Module**	**10 minutes**

Learning objectives	By the end of this module, participants will be able to: 1. Take and interpret anthropometric measurements accurately 2. Conduct clinical, biochemical, and dietary assessments 3. Classify nutritional status correctly based on nutrition assessment
Materials needed	• Flipchart and stand • Markers and tape • 5 sheets of white paper, cut in half lengthwise • LCD projector • Module 2 PowerPoint • At least 4 functioning adult scales • At least 4 height-measuring devices for adults • BMI and BMI-for-age reference tables, one for each participant

	• BMI wheels, one for each participant • At least 6 MUAC tapes that can measure adolescents (15–18 years) and adults (≥ 19 years) • One copy of the **Module 2 Evaluation Form** for each participant • **Participant Manual—Module 2**
Advance preparation	• Review PowerPoint slides for Module 2. • Review Module 2 of 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. - What is undernutrition? - What is overnutrition? - What are the six food groups? - Name three keys to food and water safety - Why do HIV-positive people need to eat more than HIV-negative people, even if they have no symptoms? - How much extra energy do adult PLHIV need during the asymptomatic (early stages) of HIV infection? - How much extra energy do adult PLHIV need during the symptomatic (late stages) of HIV infection? - Name two nutrition services that can be provided at the ART or TB clinic. - Name two things that influence the amount of energy a person needs every day. • Test the anthropometric equipment (weighing scales and height-measuring devices) to make sure it is functioning and accurate. • Practice calculating BMI, using MUAC tapes, using BMI and BMI-for-age tables, and using the BMI wheel. • Place the scales and height-measuring devices at the front of the class.

2.0. Module Introduction (25 minutes)

- Show the Module 2 heading on **Slide 2.1.**



Review (20 minutes)

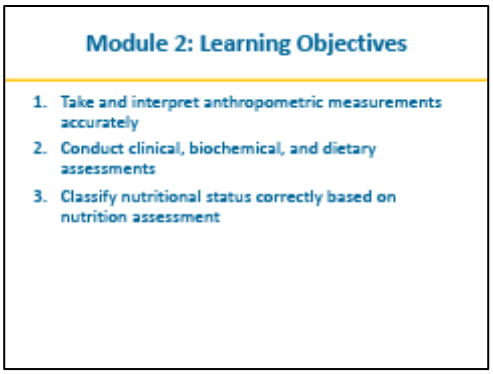
- Ask participants to stand in a circle. Show them the 'cabbage' made of the crumpled sheets of paper with review questions. Explain that the ball contains questions that will help review the content of **Module 1. Introduction to Nutrition**.
- Toss the ball to one of the participants. Ask the person 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 appear in the right-hand column below.

Questions	Answers
What is undernutrition?	The result of consuming less energy or fewer nutrients than the body needs
What is overnutrition?	The result of consuming more energy than the body needs
What are the six food groups?	• Staples • Legumes and nuts • Animal-source foods • Fruits • Vegetables • Fats and oils

Name three keys to food and water safety.	• Use treated water for drinking and store it safely • Wash hands properly • Always use a latrine • Keep food preparation areas clean • Separate raw and cooked food • Cook food thoroughly • Keep foods at safe temperatures • Eat safe foods
Why do HIV-positive people need to eat more than HIV-negative people, even if they have no symptoms?	HIV and AIDS decrease the body's ability to absorb and use nutrients; people with HIV burn more energy.
How much extra energy do adult PLHIV need during the asymptomatic (early stages) of HIV infection?	10% extra energy
How much extra energy do adult PLHIV need during the symptomatic (late stages) of HIV infection?	20–30% extra energy
Name two nutrition services that can be provided at the ART or TB clinic.	Any of the following is correct: • Nutrition assessment and classification • Nutrition counselling and education • Prescription of therapeutic and supplementary foods to severely and moderately malnourished individuals • Referral to food support and economic strengthening and livelihood support
Name two things that influence the amount of energy a person needs.	Age, sex, activity level, body composition, pregnancy/lactation status, presence of infections

Module Objectives (5 minutes)

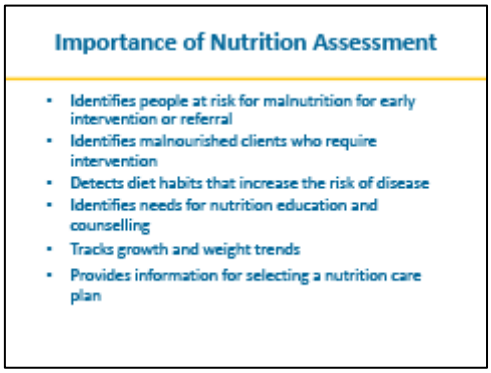
- Show the module objectives on **Slide 2.2.**



2.1 Nutrition Assessment Methods (20 minutes)

BRAINSTORM: Importance of nutrition assessment

- Ask participants: 'Why should health care workers routinely assess the nutritional status of their clients?' Write the responses on a flipchart. Compare the responses with the information on **Slide 2.3**.



- Explain that knowing a client's nutritional and health status, dietary patterns, current treatment, and food security situation allows the service provider to choose a nutrition care plan and advise clients on how to maintain a healthy weight.
- Explain that identifying and treating malnourished clients early can reduce hospital stays, speeds recovery from infections, and reduces complications that lead to morbidity and mortality.
- Refer participants to **Reference 2.0: NCST Competencies and Standards for Nutrition Assessment and Classification** (see below) and explain that, in this module, they will get a chance to practice most of these competencies.

Reference 2.0: NCST Competencies and Standards for Nutrition Assessment and Classification

Competence can be defined as the ability to apply knowledge and skills to produce a required nutrition outcome.

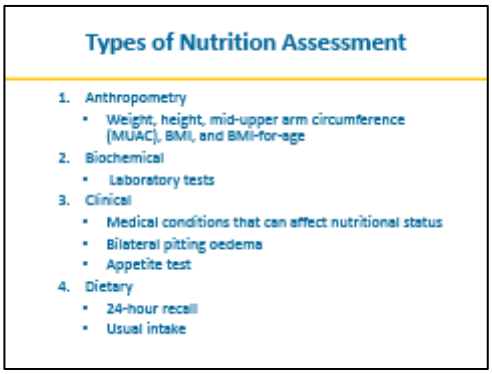
Competency standards are the range of skills that are needed to achieve a desired nutrition outcome.

Competency	Minimum Standards
Use anthropometric methods to assess and classify nutritional status	Measure weight
	Measure height
	Calculate BMI
	Look up BMI using reference tables or BMI wheel
	Look up BMI-for-age of an adolescent using reference tables or BMI wheel
	Measure MUAC
	Interpret blood haemoglobin results

Competency	Minimum Standards
Use biochemical methods to assess and classify nutritional status	Take the needed action based on results
Use clinical methods to assess and classify nutritional status	Identify medical conditions and complications that can affect nutritional status
	Conduct RUTF appetite test for a client who is severely undernourished
	Identify physical signs of wasting
	Assess and classify bilateral pitting oedema
Use dietary methods to assess food intake and respond to nutritional status	Use a 24-hour recall to assess a client's food intake
	Use findings of the dietary assessment to address nutrition-related problems

BRAINSTORM: What are the different types of nutrition assessment?

- Ask participants: 'What kinds of nutrition assessment can service providers use to tell whether someone is malnourished?'
- Show **Slide 2.4** and compare the participants' responses to the information on the slide.

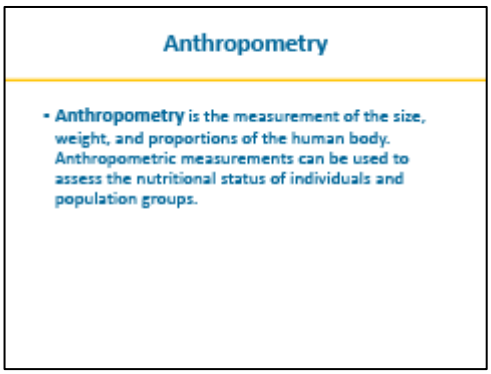


- Explain that nutrition assessment includes **anthropometric** measurements, which involve measuring parts of the body; **biochemical** laboratory tests; **clinical** evaluation of signs and symptoms of malnutrition; and **dietary** assessment to assess food intake.
- Explain that anthropometric, clinical, and biochemical assessments are most commonly used together to classify a person's nutritional status. Dietary assessments can be used to help determine why a patient might be malnourished and how he/she could improve nutritional status through dietary changes. Explain that it may help to remember the different types of assessment by remembering 'ABCD' (anthropometric, biochemical, clinical, dietary) and that participants will learn more about all these types of assessments in this module.

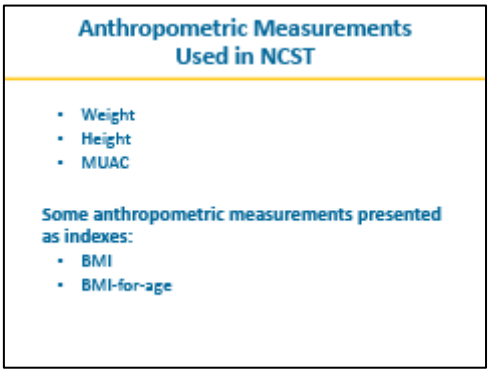
2.2 Anthropometric Measurements (3 hours)

BRAINSTORM: What is anthropometry?

- Ask participants: 'What is anthropometry?' Show them the information in **Slide 2.5**.



- Ask participants: 'What are the different types of anthropometric measurements?' Review the information in **Slide 2.6**.



Explain that body weight is strongly correlated with the development of disease. Unintentional weight loss or gain can be a sign of or lead to poor health and reduce the body's ability to fight infection. Unintended weight gain or a weight that is too high for the client's height can be bad for his/her health. Therefore, tracking weight changes in your clients is very important.

- Refer participants to Reference 2.1: How to Weigh Adolescents and Adults Using an Electronic Scale in the Participant Manual (see below). Ask a volunteer to read the information aloud.

> **Reference 2.1: How to Weigh Adolescents and Adults Using an Electronic Scale**
>
> 1. Ensure that you have a functioning weighing scale that measures weight in kilograms (kg) to the nearest 100 grams (g).
> 2. Place the scale on a flat surface. To turn on the scale, cover the solar panel for a second (can be covered using your foot or hand). When the number 0.0 appears, the scale is ready.
> 3. Ask the client to remove shoes, hats, and scarves and to empty pockets.
> 4. Ask the client to stand unassisted on the centre of the scale.
> 5. Read and record the weight to the nearest 100 g (0.1 kg) (for example, 62.3 kg).

- Ask a volunteer to come to the front of the class and demonstrate the steps for weighing and recording weight correctly.
- Explain that accurate measurements are important because errors can lead to classifying a client's nutritional status incorrectly and, ultimately, providing the wrong care. Errors include weighing clients with too much clothing, weighing clients who are not standing straight, and using inaccurate scales.
- Ask participants if they have electronic scales in all of their facilities. If they do not have electronic scales, ask what kinds of scales they have, what the challenges of using those scales are, and what solutions that they have found. Emphasize that, regardless of the type of scale used, many of the same principles apply: You must always ask people to remove excess clothing and empty their pockets; scales should be standardised for accuracy at least once per week by weighing an object of known weight; and weight should be taken to the nearest 100 grams.
- Refer participants to **Reference 2.2: How to Measure Height for Adolescents and Adults** (see below), and ask another volunteer to read the information aloud.
- Ask a volunteer to come to the front of the class and demonstrate the steps for measuring and recording height correctly.
- Emphasize that the client must stand correctly:
  - Shoulder blades, buttocks, and heels should touch the vertical surface of the board (or the wall if using a measuring tape).
  - Feet should be flat on the floor, close together, and touching the back of the board.
  - Legs and back should be straight, with arms at the sides.
  - Shoulders should be relaxed and touching the board. The head does not need to touch the board.

- Explain that if a client is too sick to stand, height should not be measured yet. Instead, mid-upper arm circumference (MUAC) measurement should be used to determine the nutritional status. Measure the height when the client has recovered.

Reference 2.2. How to Measure Height for Adolescents and Adults
Measuring the height of an adolescent or adult requires a height board or a measuring tape securely fastened to the wall and accurately marked in centimetres (cm).

1. Use a height board or fasten a non-stretchable tape measure securely to a wall.
2. Place the height board vertically against a flat surface.
3. Ask the client to remove shoes and headwear.
4. Ask the client to stand straight and look straight ahead. The client's head does not need to touch the board (or the wall if using a measuring tape).
5. Bring the moveable head piece to rest firmly on the top of the client's head.
6. Record the measurement to the nearest 0.1 cm.

PRACTICE: Measuring weight and height

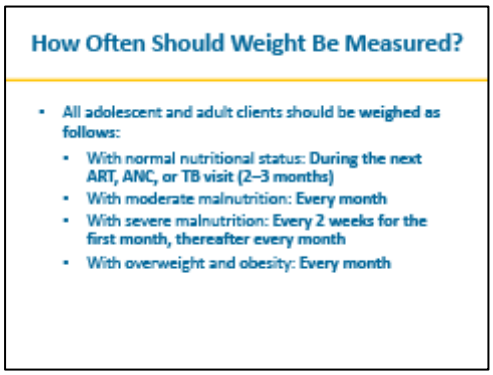
- Divide participants into small groups of at least five and give each group a scale and a height board that they will use to complete **Exercise 2.1: Weight, Height, and BMI** in the **Participant Manual** (see below).

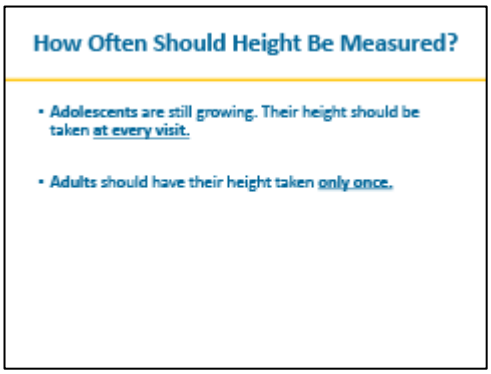
Exercise 2.1. Weight, Height, and BMI

Name	Sex (M/F)	Pregnant (Y/N)	Weight (kg) to nearest 100 g	Height (cm)	BMI	Nutritional status
1.						
2.						

- Explain that each group should select two people to be weighed and measured. Each selected person should be weighed and measured at least three times, once by each of the three other members of the group. Each participant who takes the measurements should record the results in his/her **Participant Manual**. The body mass index (BMI) will be completed later.
- With your co-facilitator, observe the groups to make sure that they do the exercise correctly.
- When the two people from each group have been weighed/measured by at least three other people, group members should compare the results from measurements taken by different group members.

- When the groups have finished practicing how to take the weight and height measurements and compared results, ask them to return to their seats.
- Discuss the following questions with the entire class:
- Did you find differences in the weight and height measurements taken by different people?
- If so, what are the reasons for the differences?
- What could have been done to eliminate these differences?
- Ask if there were any other problems they had measuring weight and height, including equipment (error, zeroing), clothing, reading the equipment, colleagues not standing straight for height, and so on.
- Show and review the information in **Slide 2.7** and **Slide 2.8** about how often clients' weight and height should be measured.

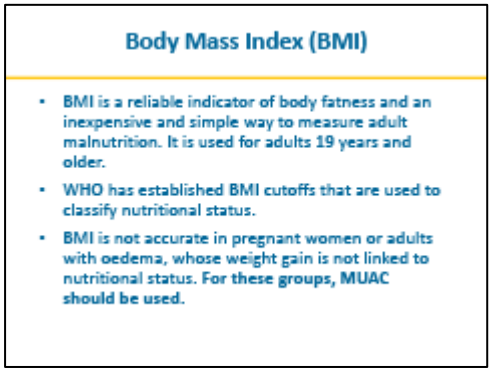




PRESENTATION: BMI

- Ask participants if you can tell if someone is undernourished just by knowing his/her weight and height. Tell them that the answer is no and explain that a comparison or standard is needed to know what is healthy or normal.
- Explain that the World Health Organisation (WHO) has adopted several indices for comparing a client's physical measurements with international standards or references for healthy people. For adults, BMI is the most commonly used index for assessing nutritional status and determining if an adult is underweight or overweight.
  - BMI uses a person's weight and height to estimate if he/she is underweight, normal weight, or overweight. A person's BMI can tell you a lot about his/her risk for disease.
  - BMI is calculated with a formula that includes the client's weight and height. BMI below or above established cutoffs indicates a need for nutrition interventions.

- Show and review **Slide 2.9.**



PRESENTATION: Classifying nutritional status of adults using the BMI formula

- Explain that BMI can be found using a formula, look-up tables, or a BMI wheel.
- Write the formula below on a flipchart. 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 the following example on a flipchart and do the calculation with the group:

  Height: 160 cm

  Weight: 68 kilos

  Step 1: Convert height in centimetres to meters: 1.6

  Step 2: Square the height (1.6 x 1.6) = 2.56

  Step 3: 68/2.56 = **26.56 kg/m^2**

- Explain: In this example, the client's BMI is 26.56. Now that we have the BMI, we need to compare it to the international standards to know if the client is underweight, overweight, or healthy.

  Show **Slide 2.10** and review the BMI cutoff points and classifications, as shown in the table below.

Classifying Nutritional Status according to BMI (Adults)

BMI	Nutritional Status
Less than 16.0	Severe underweight
16.0 to 18.4	Moderate underweight
18.5 to 24.9	Normal
25.0 to 29.9	Overweight
30.0 or higher	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.

- When finished with the section, refer participants to **Reference 2.3: Calculating Body Mass Index (BMI)** for further reading.

PRACTICE: Calculating BMI using a formula

- Refer participants back to **Exercise 2.1: Weight, Height, and BMI** in the **Participant Manual.** Tell them to use the formula to calculate the BMI and classify the nutritional status of the two group members whom they weighed and measured. Tell them to compare the results with the other group members to ensure that they have the right answers.

PRESENTATION: Classifying nutritional status of adults using BMI look-up tables

- Refer participants to the **Body Mass Index (BMI) Reference Tables.** Explain that they can use the tables to find BMI instead of using a calculator. Explain the meaning of the colour coding as follows:
  - Red=severe underweight
  - Yellow/orange=moderate underweight
  - Green=normal nutritional status
  - Purple=overweight or obese
- Explain how to find BMI on the reference tables using the following steps:
  - Find height in cm in the left-hand column (y axis).
  - Find weight in kg in the bottom row (x axis).
  - Find the point where the two lines meet. This is the BMI.
  - If the client's height or weight falls between values on the table, round it to the nearest kg and cm. For example, if the client weighs 28.5 kg, round up to 29. If the client's height is 155.2 cm, round down to 155 cm.
  - Ensure that the class understands rounding by giving a few more examples.

PRACTICE: Determining BMI using look-up tables

- Ask participants to form pairs and practice using the BMI reference tables to determine BMI in the 10 cases provided in **Exercise 2.2** of the **Participant Manual**.
- When participants have determined the BMI of each client, have them write the nutritional status of each client in the last column, based on the BMI.
- Ask volunteers to present their results as the rest of the groups review their responses.
- Answers to questions 1 to 10 are shaded in the table below:

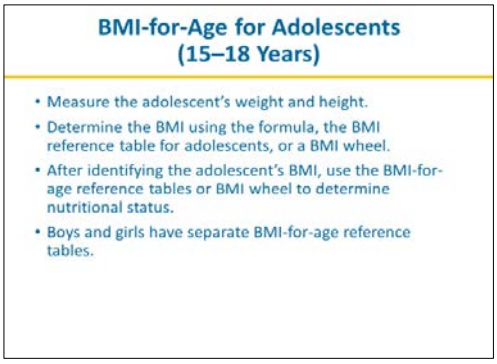
Exercise 2.2. Determining BMI for Adults Using Look-Up Tables

ID	Sex	Height (cm)	Weight (kg)	BMI	Nutritional status
1	F	184	52	**15.4**	**Severe underweight**
2	F	148	40	**18.3**	**Moderate underweight**
3	F	178	52	**16.4**	**Moderate underweight**
4	M	190	68	**18.8**	**Normal**
5	M	176	48	**15.5**	**Severe underweight**
6	F	156	77	**31.6**	**Obese**
7	M	160	42	**16.4**	**Moderate underweight**
8	M	174	84	**27.7**	**Overweight**
9	F	180	74	**22.8**	**Normal**
10	M	164	66	**24.5**	**Normal**

- Ask the groups to discuss any difficulties they had calculating or finding BMI using the reference tables.

PRESENTATION: Classifying nutritional status of adolescents 15–18 years of age using BMI-for-age

- Explain that BMI-for-age is the preferred nutrition indicator for adolescents 15–18 years.
- Explain: Adolescents are still growing and developing. As children get older and develop, the correlation between BMI and body fat changes, and boys and girls are expected to have different levels of body fat. Therefore it is important that age and sex are considered when assessing their nutritional status.
- Show **Slide 2.11** and explain the steps for determining the BMI-for-age z-score of adolescent boys and girls:
  - Find the BMI using the formula, BMI wheel, or BMI look-up table.
  - On the BMI-for-age reference tables, find the row corresponding to the client's age. Then find the range in which the client's BMI falls.
  - Record the BMI-for-age z-score, based on the range in which the BMI falls.
  - Determine the adolescent client's nutritional status using the BMI-for-age z-score cutoffs in the table on the next page.
  - Explain that the z-score tells us how far and in what direction the adolescent's BMI deviates from the average.



- Refer the participants to the **BMI-for-age reference tables for boys and girls 15–18** and review how to use the tables. Review the classification cutoff points on **Slide 2.12** (see table below).

Nutritional Status According to BMI-for-Age (Adolescents 15–18 Years)

BMI-for-Age Z-Score	Nutritional Status
<-3	Severe underweight
≥ 3 to < -2	Moderate underweight
≥ -2 to < +1	Normal
≥ +1 to < +2	Overweight
≥ +2	Obese

Source: WHO. 2007. *Growth Reference Data for 5–19 Years*. Available at http://www.who.int/growthref/en/.

- Tell participants that additional information is provided in **Reference 2.4: BMI-for-Age** in the **Participant Manual.**

PRACTICE: Classifying nutritional status of adolescents using BMI-for-age look-up tables

- Ask participants to form pairs to practice finding the BMI-for-age z-score for the four cases in **Exercise 2.3** in the **Participant Manual** (see below). Participants should record the BMI and the BMI-for-age z-score.
- When participants have determined BMI and the BMI-for-age z-score, have them write the nutritional status of each client in the last column of the table. The answers are shaded in the table below.
- Ask one or two groups to present their results as the rest of the groups review their responses.

Exercise 2.3. Classifying BMI-for-Age Using Look-Up Tables

ID	Sex	Age	Height (cm)	Weight (kg)	BMI	BMI-for-age z-score	Nutritional status
1	M	15 years 9 months	143	37	**18.1**	**≥ -2 to < +1**	**Normal**
2	F	15 years 9 months	152	36	**15.6**	**≥ -3 to < -2**	**Moderate undernutrition**
3	M	16 years 2 months	135	28.5	**15.9**	**≥ -3 to <-2**	**Moderate undernutrition**
4	F	15 years 1 month	147	27	**12.5**	**< -3**	**Severe undernutrition**

- Ask the groups to discuss any difficulties they had finding BMI-for-age z-score on the reference tables for boys and girls.

PRESENTATION: Classifying nutritional status of adults and adolescents using the BMI wheel

- Explain that another tool that can be used to calculate both BMI and BMI-for-age is the BMI wheel. Give a BMI wheel to each participant.
- Explain that BMI for adults is found on the front of the wheel, where the word 'Instructions' appears. The inner/smaller disc shows height. The outer/larger disc shows weight. Explain as you demonstrate the following steps to find BMI:
  - Turn the inner/smaller disc until the client's height is aligned with the client's weight.
  - Read the number that the arrow labelled 'BMI' is pointing to on the outer disc. The BMI values are coloured turquoise.
  - Look at the box at the bottom of the wheel labelled 'Nutritional status for adults 19 years and older'. Find the range that contains the client's BMI and classify the client's nutritional status.
- Explain that once the client's BMI is found, BMI-for-age (if the client is 18 years or younger) can be found on the other side of the wheel. Explain as you demonstrate the following instructions:
  - Flip the wheel over. Turn the inner disc until the arrow labelled 'age' points to the age closest to the child's age. You may have to round up or down. For example, if a child is age 15 years and 5 months, point the arrow to 15. If the child is 17 years and 6 months, point the arrow to 18.
  - You will see two boxes on the back side of the wheel, one labelled 'Girls' and one labelled 'Boys'. Select the box based on the child's sex.
  - With the wheel still pointing to the child's age, find the number range in the 'Girls' or 'Boys' box that contains the child's BMI. Classify the child's nutritional status based on the range in which the child's BMI falls.

PRACTICE: Classifying nutritional status of adults and adolescents using the BMI wheel

- Tell participants to complete **Exercise 2.4** in the **Participant Manual** using the BMI wheel to find the BMI of adults and the BMI-for-age of adolescents. The answers are shaded in the two tables below.

Exercise 2.4. Finding BMI and BMI-for-Age Using a BMI Wheel

BMI			
Height (cm)	**Weight (kg)**	**BMI**	**Nutritional status**
184	52	15.4	Severe underweight
148	40	18.3	Moderate underweight
178	50	15.8	Severe underweight
190	68	18.8	Normal
176	48	15.5	Severe underweight
172	94	31.8	Obesity

BMI-for-age					
Sex	**Age (years and months)**	**Height (cm)**	**Weight (kg)**	**BMI**	**Nutritional status**
F	16 yrs., 2 mo.	150	43	19.1	Normal
M	17 yrs., 3 mo.	160	43.2	16.8	Moderate underweight
F	15 yrs., 7 mo.	145	38	18.1	Normal
M	18 yrs., 4 mo.	155	36	15	Severe underweight
M	15 yrs., 1 mo.	148	35.5	16.2	Moderate undernutrition
F	17 yrs., 6 mo.	146	55	25.5	Overweight
M	16 yrs., 2 mo.	147	45	17	Normal
F	17 yrs., 7 mo.	176	45	14.5	Severe underweight

PRESENTATION: Calculating weight loss

- Explain that unintentional weight loss is a sign of a medical or dietary complications and can be an independent indicator of malnutrition. Clients who unintentionally lose 5–10% of their weight are classified as ‘moderately undernourished’, and clients who unintentionally lose more than 10% of their weight are considered to be ‘severely malnourished’.
- Ask for a volunteer to come to the front of the room and explain to the class how to calculate the percentage of weight lost by a client who weighed 80 kilos at the last visit and now weighs 74 kilos (see box below for answer).

Formula for Calculating Percentage of Weight Lost

(Previous Weight – Current Weight)

---------- X 100

Previous Weight

Example

Step 1: 80-74 = 6

Step 2: 6 ÷ 80 = 0.075

Step 3: 0.075 x 100 = 7.5%

Answer: 7.5%

- Tell participants that additional information is provided in **Reference 2.5: Calculating Weight Loss** of the **Participant Manual.**

PRACTICE: Calculating weight loss

- Tell participants to turn to **Exercise 2.5: Calculating Weight Loss** in the **Participant Manual.** Give them about 5 minutes to fill in the last column of the table with the percentage of weight lost by each client. Answers are shaded in the table below.

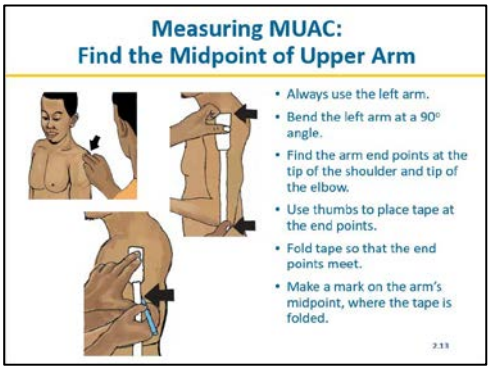
Exercise 2.5 Calculating Weight Loss

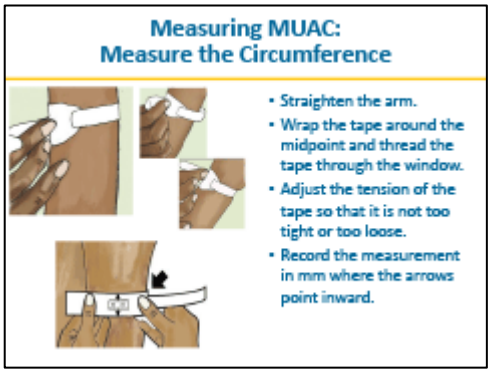
Client #	Weight at First Visit (kg)	Weight at Second Visit kg)	% Weight Lost
1	62	57	8.06%
2.	50	45	10%
3	79	75	5.06%
4.	81	73	9.88%
5.	56	50	10.71%

PRESENTATION: MUAC

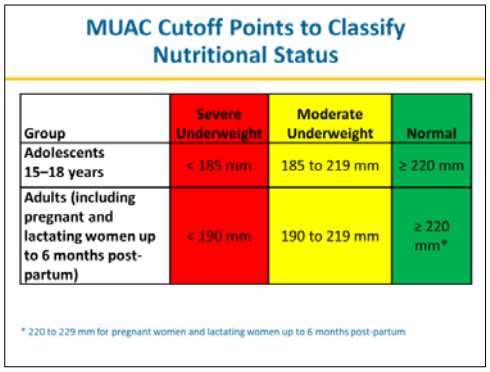
- Explain that BMI is not used to classify the nutritional status of pregnant women or lactating women up to 6 months post-partum because their weight gain is not related to nutritional status. Instead, MUAC is used. MUAC can also be used with adolescents and adults who are too sick to stand or who have bilateral pitting oedema.
- Explain that MUAC is a quick way to measure nutritional status because it only requires a tape measure, but specific procedures must be followed to ensure accuracy. Even a half-centimetre error can mean a difference in treatment.

- Show **Slides 2.13 and 2.14** and go over the steps for measuring MUAC.





- With your co-facilitator, demonstrate each step for measuring MUAC. Measure and read out aloud the co-facilitator's MUAC. Ask the participants to write it down.
- Show **Slide 2.15** and ask the groups to classify your co-facilitator's nutritional status based on his/her MUAC.



PRACTICE: Measuring MUAC

- Give participants MUAC tapes that can be used to measure adolescents and adults.
- Divide participants into groups of four to complete **Exercise 2.6** in the **Participant Manual** (see below). Explain that each group member should have his/her MUAC measured by the other three members. All measurements of each group member should be recorded in **Exercise 2.6**.

Exercise 2.6 Measuring MUAC

Measure and record the MUAC of each group member. Record all measurements of each person taken by the group. Afterward, compare the measurements and discuss any differences.

Name of person being measured	Measurement 1	Measurement 2	Measurement 3	Measurement 4

- Give the groups 15 minutes for this activity. With your co-facilitator, observe each group and make sure participants are measuring MUAC correctly.
- When the groups have finished the exercise, discuss any problems they had measuring MUAC such as:
  - Not finding the correct midpoint of the upper arm
  - Differences in MUAC measurements taken by each group member
- Repeat the demonstration if necessary, stressing areas that need strengthening. Tell participants that a detailed explanation of how to measure and classify MUAC can be found in **Reference 2.6: Measuring MUAC** of the **Participant Manual**.

PRESENTATION: Using weight gain to measure the nutritional status of pregnant and lactating women (up to 6 months post-partum)

- Refer participants to **Reference 2.7: Pregnancy Weight Gain**. Ask participants why it is important to track a woman's weight gain during pregnancy.
- Explain that inadequate weight gain during pregnancy is associated with low birth weight, preterm delivery, and intrauterine growth retardation. Women who gain too much weight during pregnancy are also at increased risk for complications during delivery and adverse outcomes.
- While MUAC takes time to respond to changes in nutritional status, tracking weight changes between visits allows the health worker to easily identify pregnant women who are at risk of malnutrition and who have a higher risk of delivering a preterm or low-birth-weight baby.
- Show **Slide 2.16** and explain that at the first antenatal care visit, weight gain targets should be set for each woman based on her MUAC. Pregnant and lactating women should be weighed at every visit, and their average weight gain per month should be determined.

Weight Gain During Pregnancy

Pre-pregnancy MUAC or MUAC during the first trimester	Recommended total weight gain	Minimum weight gain per month
< 220 mm	13–18 kg	2 kg
≥ 220 mm to 299 mm	11–16 kg	1 kg
≥ 300 mm	7–11 kg	0–0.5 kg

Healthy women (MUAC ≥ 220 mm–299 mm) should gain 11–16 kg during their pregnancy. Women who gain less than 1 kg per month should be referred for additional assessment and intervention.

- Undernourished women (MUAC < 220 mm) who gain less than 2 kg per month should be referred for additional assessment and intervention.

2.3 Biochemical Assessment (20 minutes)

PRESENTATION and DISCUSSION

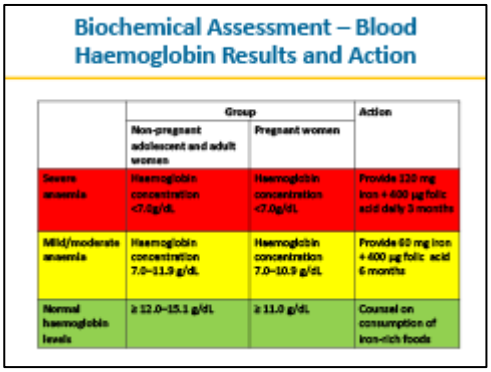
- Explain that laboratory tests are helpful but not essential for nutrition assessment. Health care workers can obtain nutrition information from the results of blood, urine, and stool tests.
- Explain that lab test results can help identify clients who need nutrition care.
- Ask participants to refer to **Reference 2.8: Laboratory Tests for Nutrition** in the **Participant Manual** (see below). Ask participants what lab test results are available for clients in their workplaces and how they can use these results to determine nutrition care and treatment.

Reference 2.8: Laboratory Tests for Nutrition

Test	Normal results	Low number	High number
Metabolic tests			
Glucose	70–99 mg/dL	Hypoglycaemia, liver disease, adrenal insufficiency, excess insulin	Hyperglycaemia, certain types of diabetes, pre-diabetes, pancreatitis, hyperthyroidism
Blood urea nitrogen (BUN)	7–20 mg/dL	Undernutrition	Liver or kidney disease, heart failure
Creatinine	0.8–1.4 mg/dL	Low muscle mass, undernutrition	Chronic or temporary decrease in kidney function
BUN/creatinine ratio	10:1 to 20:1	Undernutrition	Blood in bowels, kidney obstruction, dehydration
Calcium	8.5–10.9 mg/dL	Calcium, magnesium, or vitamin D deficiency; undernutrition; pancreatitis; neurological disorders	Excess vitamin D intake, kidney disease, cancer, hyperthyroidism
Protein	6.3–7.9 g/dL	Liver or kidney disease, undernutrition	Dehydration, liver or kidney disease, multiple myeloma
Albumin	3.9–5.0 g/dL	Liver or kidney disease, undernutrition	Dehydration
Alkaline phosphatase	44–147 IU/L	Undernutrition	Paget's disease or certain cancers that spread to bone, bile duct obstruction, liver cancer
Alanine amino-transferase	8–37 IU/L	Generally not a concern	Certain toxins such as excess acetaminophen or alcohol, hepatitis
Blood tests			
White blood cell count	4,500–10,000 cells/mcL	Autoimmune illness, bone marrow failure, viral infections	Infection, inflammation, cancer, stress, intense exercise
Red blood cell count	Male: 4.7–6.1 Mill/mcL Female: 4.2–5.4 Mill/mcL	Iron, vitamin B12, or folate deficiency; bone marrow damage	Dehydration, renal problems, pulmonary or congenital heart disease
Haemoglobin (Hb)	Male: 13.0–17.2 g/dL Female: 12.0–15.1 g/dL Pregnancy: ≥11.0	Iron, vitamin B12, or folate deficiency; bone marrow damage	Dehydration, renal problems, pulmonary or congenital heart disease
Haematocrit	Male: 40.7%–50.3% Female: 36.1%–44.3%	Iron, vitamin B12, or folate deficiency; bone marrow damage	Dehydration, renal problems, pulmonary or congenital heart disease

Test	Normal results	Low number	High number
Mean corpuscular volume	80–95 femtolitres	Iron deficiency	Vitamin B12 or folate deficiency
Mean corpuscular Hb	27–31 picograms	Iron deficiency	Vitamin B12 or folate deficiency
Platelet count	150,000–400,000/mcL	Viral infections, lupus, pernicious anaemia (due to vitamin B12 deficiency)	Leukaemia, inflammatory conditions
Note: Reference numbers are not standardised, and numbers may vary from lab to lab.			
Stool sample analysis			
Helminth (hookworm and ascaris) infection			Anaemia

- Explain that not every health facility may do all these tests, but health care workers can use available lab results to assess their clients' nutrition-related problems.
- Show **Slide 2.17** and explain that when blood haemoglobin (Hb) results are available for adolescent girls and women, it is important to identify nutrition problems and take the necessary action to treat and prevent anaemia.



2.4 Clinical Assessment (45 minutes)

Clinical Assessment for Clients without SAM (25 minutes)

PRESENTATION and DISCUSSION

- Explain that because NCST services are integrated with HIV and TB treatment and care, clinical nutrition assessment should be a routine aspect of the broader medical assessment done with each client**. NCST should not be a stand-alone vertical service**.
- Refer participants to Reference 2.9: Clinical Nutrition Assessment of Adolescents and Adults and review the information.

Reference 2.9: Clinical Nutrition Assessment of Adolescents and Adults

Step 1. Ask about medical conditions and dietary issues		
ASK/LOOK	**If YES**	**Implication**
1. Have you noticed any weight change lately?	Look for signs of severe wasting: ▪ Loss of muscle bulk around the shoulders, arms, ribs, and legs. Is the outline of the ribs clearly visible? Are the hips small compared with the chest and abdomen? ▪ Sagging skin (sometimes looking like baggy pants)	Unintended weight loss is a sign of illness.
2. How have you been feeling lately?	Ask whether the client has had: ▪ Active tuberculosis (TB) (first 3 months of treatment) ▪ Chronic diarrhoea (for more than 7 days) ▪ Other chronic opportunistic infections ▪ Oesophageal infections/tumours	Illness may be the cause of malnutrition and may need to be treated first.
3. Have you had any uncomfortable symptoms lately?	Ask whether the client has had: ▪ Nausea or vomiting ▪ Persistent fatigue ▪ Mouth sores, thrush, or difficulty swallowing ▪ Dental problems ▪ Dry or flaking skin ▪ Swollen gums ▪ Anorexia/poor appetite	Many of these symptoms can be managed through diet. Many of these symptoms are signs of or risk factors for malnutrition.
4. How has your appetite been? How are you	Do a dietary assessment using a 24-hour recall.	Assess whether poor food intake may be causing malnutrition.

eating?		
5. Have you noticed changes in body composition or fat distribution?	Ask whether the changes include thinning limbs and face or enlargement of the face, stomach, breasts, or back.	These are side effects of antiretroviral drugs (ARVs) that should be referred to a clinician.
6. Are you taking any medication?	Find out what medications the client is taking. Find out whether the client is taking any nutrition supplements or herbal or other remedies.	Drug side effects may affect ability to eat, change body composition, and cause anaemia. Supplements and herbal remedies should be approved by medical personnel to ensure safety.

Step 2. Examine for signs of nutritional deficiencies

(A nurse or clinician should do medical assessments and record all results in the client's record.)

ASK/LOOK	If YES	Implication
1. Check for medical complications.	Medical complications ▪ Bilateral pitting oedema ▪ Severe dehydration ▪ High fever (≥ 38.5° C) ▪ Difficult or rapid breathing or increased pulse rate ▪ Convulsions ▪ Severe anaemia ▪ Mouth sores or thrush ▪ Hypothermia (temperature < 35° C) ▪ Hypoglycaemia ▪ Extreme weakness ▪ Opportunistic infections ▪ Extensive skin lesions	Clients with severe undernutrition, medical complications, and no appetite must be admitted for inpatient treatment of severe undernutrition. Clients with severe undernutrition, appetite, and no medical complications can be treated for severe undernutrition as outpatients.
2. Assess for bilateral pitting oedema on both legs.	Rule out non-nutritional causes of oedema such as pre-eclampsia, severe proteinuria, nephritic syndrome, nephritis, acute filariasis, heart failure, and wet beriberi. No oedema = Grade 0 Bilateral pitting oedema ▪ In both feet below the ankles = Grade + (mild) ▪ In both feet and legs below the knees = Grade ++ (moderate)	Bilateral pitting oedema in adults may be a sign of severe undernutrition.

	▪ In both feet, legs, arms, and face = Grade +++ (severe)	
3. Conduct appetite test with ready-to-use therapeutic food (RUTF) if the client is severely undernourished.	Conduct RUTF appetite test for all severely undernourished clients: ▪ If client passes appetite test, treat for severe undernutrition in outpatient care. ▪ If client fails appetite test, refer for treatment of severe undernutrition in inpatient care.	Poor appetite can cause further deterioration of a client's nutritional status.

- Ask participants if any aspects of clinical nutrition assessment align with other routine medical assessments that they conduct. What is the same? What is different? Are there any challenges with integrating medical assessment and clinical nutrition assessment?

Clinical Assessment for Clients with SAM (20 minutes)

PRESENTATION and DISCUSSION

- Explain that clients classified as severely undernourished require additional clinical examinations to determine if there are dangerous complications and whether the patient requires inpatient care.
- Because severe undernutrition, infections, and some medications can cause loss of appetite, patients with severe acute malnutrition (SAM) should be given an appetite test to find out whether they can eat the therapeutic food used to treat severe undernutrition in outpatient care. If they fail the appetite test, they will need to be admitted for inpatient treatment so they can be carefully monitored during treatment.
- Refer participants to **Reference 2.10: Conducting an Appetite Test** (see below). Ask a volunteer to read the steps aloud.

Reference 2.10: Conducting an Appetite Test

Give all clients with severe undernutrition an appetite test to find out whether they can eat ready-to-use therapeutic food (RUTF) in outpatient care.

1. Ask the client to wash his or her hands with soap and running water.
2. Take the client to a quiet, private area.
3. Give the client a packet of RUTF and demonstrate how to open it and eat it from the packet or with a spoon.
4. Do not force the client to eat the RUTF.
5. Offer plenty of boiled or treated drinking water to the client while he or she eats the RUTF.
6. Watch to see how much the client eats in about 30 minutes.

Minimum amount of RUTF the client should eat to pass the appetite test	
Client's weight (kg)	**Packets**
15.0–29.0	¾
≥ 30.0	> 1

7. If the client has no appetite, try giving smaller amounts every 10–15 minutes.
8. If the client does not pass appetite test, refer him or her for treatment of severe undernutrition in inpatient care. If the client passes the appetite test, provide treatment for severe undernutrition in outpatient care.

- Explain to the participants that the details for conducting an appetite test will be further discussed in **Module 4: Nutrition Care Plans and Support.**

PRESENTATION: Bilateral pitting oedema

- Explain that oedema occurs when fluid in the body is distributed in an abnormal way between tissues and blood vessels.
- Explain that bilateral pitting oedema is oedema in both feet in which pressure on the skin leaves a depression in the tissues.
- Explain that bilateral pitting oedema, also called nutritional oedema, may be a sign of severe undernutrition. It can be used to diagnose severe undernutrition regardless of a client's BMI or MUAC if non-nutritional causes of oedema are ruled out.
- Ask two volunteers to demonstrate how to assess for bilateral pitting oedema. Ask the other participants to use **Reference 2.11: How to Assess for Bilateral Pitting Oedema**

(see below) in the **Participant Manual** to determine if the volunteers did the assessment correctly. When the volunteers are finished, respond to questions and observations.

Reference 2.11: How to Assess for Bilateral Pitting Oedema

To assess for bilateral pitting oedema:

1. Press your thumbs on both feet for 3 full seconds and then remove your thumbs.
2. If the skin stays depressed on both feet, the person has grade + (mild) bilateral pitting oedema.
3. Do the same test on the lower legs, hands, and lower arms. If the skin stays depressed in these areas, look for swelling in the face, especially around the eyes. If there is no swelling in the face, then the person has grade ++ (moderate) bilateral pitting oedema. If swelling appears in the face, then the person has grade +++ (severe) bilateral pitting oedema.

Grades of Bilateral Pitting Oedema

Grade	Definition
Absent or 0	No bilateral pitting oedema
Grade +	Mild (in both feet)
Grade ++	Moderate (in both feet plus lower legs, hands, and/or lower arms)
Grade +++	Severe (generalised, including both feet, legs, arms, and face)

- Explain that:
  - Nutritional oedema is rare in adults.
  - Oedema in adults may be a sign of other medical problems. Adults with oedema should be referred for a thorough medical examination to rule out causes of oedema not related to nutrition.

2.5. Dietary Assessment (30 minutes)

PRESENTATION: Assessing diet

- Explain that asking a client about nutrition practices is an essential part of nutrition assessment. Given time and personnel limitations, health workers should prioritize conducting a dietary assessment with clients who are underweight, overweight, obese, or have unintentional weight loss or weight gain.
- A dietary assessment provides information on eating habits, including the amount and quality of food eaten on a typical day or in recent days. Health care workers should use the information collected during the dietary assessment to make practical, feasible suggestions for a client to improve their diets or to reduce or prevent diet-related symptoms.

- Explain that for NCST, a 24-hour dietary assessment should be used to assess clients' food intake and diet diversity. The dietary assessment should be conducted on the first visit and at any time that a patient experiences a new problem or symptom that might be diet-related.
- Results of the dietary assessment should be used to provide tailored counselling that addresses each client's specific and most significant problems or challenges.
- Refer the participants to **Reference 2.12: 24-Hour Recall Dietary Assessment Form** in the **Participant Manual**. Go through the form and explain to participants how to use the tool.

Reference 2.12: 24-Hour Recall Dietary Assessment Form

Step 1: What did you eat in the last 24 hours *(from when you woke up yesterday in the morning to when you woke up this morning)?*

Time	Food or drink*	Amount eaten or drunk	Is this unusual? Take notes in this column if unusual intake.

* Include both foods eaten alone and foods combined in a dish (e.g., soup or stew).

Use the questions below to probe for information on foods eaten in the last 24 hours.

- What was the first thing you ate or drank when you got up in the morning?
- Do you remember anything else you ate or drank?
- Did you eat the food plain or put something else on it?
- While you were working, did you take a break to eat or drink something?
- What foods do you especially like or dislike?
- If you were sick during the 24 hours, how did that affect your eating?

Step 2: Ask if what or how much they ate yesterday is different than what they usually eat and, if so, why.

Changes in normal diet could be due to a holiday, a special occasion, illness, or lack of food in the house.

Step 3: Analyse the client's overall food intake in the last 24 hours to identify problems and offer possible recommendations.

1. Was the quantity of food or drink consumed adequate?
2. Did the client consume an appropriate amount of food from the various food groups?
3. What are the reasons for inadequate food intake: illness, poor appetite, or other?
4. Does the client have food allergies or intolerance?
5. What simple adaptations could be made to the client's usual diet to improve nutrition or reduce nutrition-related problems?

PRACTICE: 24-hour dietary recall

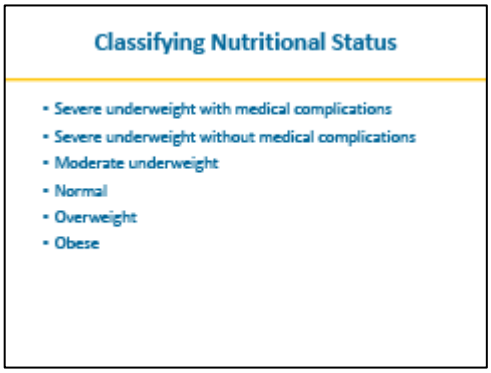
- Ask participants to break into pairs to practice using **Reference 2.12: 24-Hour Recall Dietary Assessment Form.** One person will play the role of a health worker taking a dietary history while the other will play the role of a client. The pairs should alternate so that both people get to play both roles. Give the participants 20 minutes for this exercise. Then ask the pairs 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.
  - If clients eat mixed foods, such as soups or stews, it can be hard to determine how much of each ingredient was eaten.
  - In a 24-hour dietary recall, the food eaten in one day may not represent the usual food intake, so it is important to ask about anything that might have caused food intake to be different on that particular day (illness, holiday, long work hours, etc.)

2.6 Classifying Nutritional Status (30 minutes)

PRACTICE: Classifying nutritional status and recording information in the nutrition register

- Show **Slide 2.18**. Ask participants to refer to **Reference 2.13: Classifying Nutritional Status of Adolescents and Adults** (see below) and to read through each box. Explain that each nutritional classification corresponds with a nutrition care plan for clients. Details on care plans will be covered in in Module 4.



Reference 2.13: Classifying Nutritional Status of Adolescents 15–18 Years and Adults ≥ 19 Years

Normal nutritional status

Adolescents 15–18 years (non-pregnant and non-post-partum)

BMI-for-age z-score: ≥ −2 to +1
Or MUAC: ≥ 220 mm (22.0 cm)

Adults ≥ 19 years (non-pregnant and non-post-partum)

BMI: 18.5 to 24.9
Or MUAC: ≥ 220 mm (22.0 cm)

Pregnant women and lactating women up to 6 months post-partum

MUAC: 220 to 299 mm

→ Follow care plan for maintaining **normal nutritional status**.

Moderate undernutrition

Adolescents 15–18 years (non-pregnant and non-post-partum)

BMI-for-age z-score: ≥ −3 to < −2
Or MUAC: 185 to 219 mm (18.5 to 21.9 cm)
Or unintentional weight loss of 5%–10%

Adults ≥19 years (non-pregnant and non-post-partum)

BMI: 16.0 to 18.4
Or MUAC: 190 to 219 mm (19.0 to 21.9 cm)
Or unintentional weight loss of 5%–10%

Pregnant women and lactating women up to 6 months post-partum

MUAC: 190 to 219 mm (19.0 to 21.9 cm)
Or weight gain: Less than 1 kg per month since the last visit

→ Follow care plan for managing **moderate undernutrition**.

Severe undernutrition

Adolescents 15–18 years (non-pregnant and non-post-partum)

BMI-for-age z-score: < −3
Or MUAC: < 185 mm (18.5 cm)
Or unintentional weight loss of more than 10%
Or presence of bilateral pitting oedema

Adults ≥ 19 years (non-pregnant and non-post-partum)

BMI: < 16.0
Or MUAC: < 190 mm (19.0 cm)
Or unintentional weight loss of more than 10%
Or presence of bilateral pitting oedema without other medical cause

Pregnant women and lactating women up to 6 months post-partum

MUAC: < 190 mm (19.0 cm)
Or any weight loss

→ If **NO** severe complications or no oedema or has oedema + or ++, and passed appetite test, follow care plan for managing severe undernutrition without medical complications in outpatient care. **Conduct thorough examination to rule out other causes of oedema.**

→ If severe complications or oedema +++ or failed appetite test, follow care plan for managing severe undernutrition with complications in inpatient care**. Conduct thorough examination to rule out other causes of oedema.**

Overweight and obese

Adolescents 15–18 years (non-pregnant and non-post-partum)

BMI for-age z-score Overweight: ≥ +1 to < +2
Obese: ≥ +2

Adults ≥19 years (non-pregnant and non-post-partum)

BMI: Overweight: 25.0 to 29.9
Obese: ≥ 30.0

Pregnant women and lactating women up to 6 months post-partum
MUAC: ≥ 300 mm (30.0 cm)

→ Follow care plan for managing **overweight and obesity**.

- Remind participants which indices are used for classifying each type of client:
  - BMI: Adults age 19 and older who are not pregnant or post-partum
  - BMI-for-age: Adolescents age 15–18 who are not pregnant or post-partum
  - MUAC: Pregnant and post-partum women, adolescents and adults who are too weak to stand, and clients with oedema
- Next, have the participants break into pairs and refer them to **Exercise 2.7: Adolescent and Adult Nutrition Register for Kalembo Health Centre** (see below). Explain that the register contains information for five adolescents and five adults.

Exercise 2.7 Adolescent and Adult Nutrition Register for Kalembo Health Centre

Use the information below on the clients seen during one day at the Kalembo Health Centre to fill in the nutrition register.

1. HIV-positive boy, age 15, height 168.0 cm, weight 54.0 kg, no weight change since the last visit, MUAC 15.0 cm, no bilateral pitting oedema or other medical complications
2. HIV-positive pregnant woman, age 27, height 166.0 cm, weight 72.4 kg, has lost 1 kg since the last visit, MUAC 21.5 cm, no bilateral pitting oedema or other medical complications
3. HIV-positive boy, age 16 years and 2 months, height 166.0 cm, weight 50.0 kg, no weight change since the last visit, MUAC 20.0 cm, no bilateral pitting oedema or other medical complications
4. Man with unknown HIV status, age 46, height 160.0 cm, weight 80.0 kg, no weight change since the last visit, MUAC 25.0 cm, no bilateral pitting oedema or other medical complications
5. HIV-positive girl, age 15, height 140.1 cm, weight 27.0 kg, has lost 2 kg since the last visit, MUAC 15.9, no bilateral pitting oedema or other medical complications
6. HIV-positive woman, age 19, height 164.0 cm, weight 50.0 kg, has gained 0.5 kg since the last visit, MUAC 22.0 cm, no bilateral pitting oedema or other medical complications
7. HIV-positive girl, age 15, height 134.0 cm, weight 26.0 kg, has lost 1.5 kg since the last visit, MUAC 15.5 cm, bilateral pitting oedema (++)
8. HIV-positive man, age 26, height 178.0 cm, weight 84.0 kg, has gained 1 kg since the last visit, MUAC 24.0 cm, no bilateral pitting oedema or other medical complications
9. Boy with unknown HIV status, age 17, height 157.0 cm, weight 38.5 kg, no weight change since the last visit, MUAC 18.3 cm, no bilateral pitting oedema or other medical complications
10. HIV-positive woman who gave birth 3 months ago and is breastfeeding, age 35, height 156.3 cm, weight 58.2 kg, has lost 2 kg since the last visit, MUAC 23.5 cm, no bilateral pitting oedema or other medical complications

- Ask the pairs to use what they have learned about nutrition assessment and classification to fill in that information for each client. Explain that they should also tick the boxes for age, HIV status, diet counselling or referral for therapeutic or supplementary food, and nutritional status.
- Give the participants about 15 minutes. When the pairs have completed the exercise, ask one or two pairs to present their results while the others fill in gaps. The answers appear in the form on the next page of this Facilitator's Guide.
- Explain that if measurements contradict each other, participants should use the more severe classification.

Adolescent and Adult Nutrition Register for Kalembo Health Centre

No.	Programme # (ART/ANC/ PMTCT/TB etc.)	Date	Client Name	Sex (M/F)	Adolescent (15–18 years) ☑	Adult (19 years or older) ☑	Pregnant/lactating up to 6 months postpartum ☑	Bilateral pitting oedema (0, +, ++, +++)	Weight (kg)	Weight loss or gain? (change in kg since last visit)	Height (cm)	BMI	BMI-for-age z-score	MUAC	Complications (Y/N)	Counselled on diet? (Y/N)	Referred for therapeutic or supplementary food? (Y/N)	HIV Status ☑			Classification of Nutritional Status ☑				Next Appointment Date (Should be the same as the next appointment date for HIV, TB, ANC/PMTCT, or other health service)
																		+	–	Unknown	Severe	Moderate	Normal	Overweight or obese	
1				M	✓			0	54.0	0	168.0	19.1	-1	15.0	N	N		✓					✓		
2				F		✓	✓	0	72.4	-1	166.0	N/A	N/A	21.5	N	Y		✓			✓				
3				M	✓			0	50.0	0	166.0	18.1	≥ -2	20.0	N	N		✓					✓		
4				M		✓		0	80.0	0	160.0	31.3	N/A	25.0	N	Y				✓				✓	
5				F	✓			0	27.0	-2	140.1	13.8	< -3	15.9	N	Y	✓	✓			✓				
6				F		✓		0	50.0	+0.5	164.0	18.8	N/A	22.0	N	Y		✓					✓		
7				F	✓			++	26.0	-1.5	134.0	14.5	< -2	15.5	N	Y	✓	✓				✓			
8				M		✓		0	84.0	+1	178.0	26.5	N/A	24.0	N	Y		✓						✓	
9				M	✓			0	38.5	0	157.0	15.4	-3	18.3	N	N				✓		✓			
10				F		✓	✓	0	58.2	-2	156.3	N/A	N/A	23.5	N	Y		✓					✓		
TOTALS					5	5	2									7	2				2	2	4	2	

2.7 Discussion and Module Evaluation (10 minutes)

- Allow time for questions and discuss any issues that need clarification.
- Refer participants to **Reference 2.0: NCST Competencies and Standards for Nutrition Assessment and Classification**. Emphasize the required competencies for nutrition assessment and classification.
- Distribute copies of the **Module 2 Evaluation Form**.
- Explain to the participants the following:
  - Participants should rate whether the training achieved the module's objectives.
  - The evaluation form has five scoring criteria: 1= strongly disagree, 2=disagree, 3=neither agree nor disagree, 4 = agree, and 5=strongly agree.
  - Tick on the appropriate box of the scoring criteria (1–5).

MODULE 2 EVALUATION FORM

Date: _____ Place of work: _____

Please rate each training objective in the table using the scoring system; tick where appropriate.

	1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree
The training achieved its objective of describing and demonstrating how to take and interpret anthropometric measurements accurately					
The training achieved its objective of describing how to conduct clinical, biochemical, and dietary assessments					
The training achieved its objective of explaining and demonstrating how to classify nutritional status correctly based on nutrition assessment					

General comments:

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

What was good about this module?

What was not good about this module?

What information would you like added to this module to assist you in your work?

MODULE 3

Nutrition Counselling and Education

 18 Hours

#	Description	Duration
3.0	**Module Introduction** Review of Module 1 and 2 (25 minutes) Module 3 Objectives (15 minutes)	**45 minutes**
3.1	**Understanding Communication**	**1 hour**
3.2	**Factors that Influence Behaviour**	**45 minutes**
3.3	**Introduction to Counselling—The Art (How) and the Science (What)**	**45 minutes**
3.4	**Core Needs 1—Adequate Diet (Nutrition)**	**1½ hours**
3.5	**Developing Counselling Skills—Part 1 (Ask, Listen, Identify, and Prioritize)**	**3 hours**
3.6	**Core Needs 2—Water, Hygiene, and Sanitation (WASH)**	**25 minutes**
3.7	**Core Needs 3—Regular Clinic Visits**	**25 minutes**
3.8	**Core Needs 4—Adherence to Medication**	**25 minutes**
3.9	**Reviewing the Remaining Content of the Counselling Flipchart (Positive Living and Symptom Management)**	**25 minutes**
3.10	**Using the New NCST Flipchart**	**25 minutes**
3.11	**Developing Counselling Skills—Part 2 (Discuss, Recommend, Verify Understanding, Agree on Action Plan)**	**3 hours**
3.12	**Group Nutrition Education**	**1 hour**
3.13	**Applying Quality Improvement in Nutrition Counselling**	**4 hours**
3.14	**Discussion and Evaluation of the Module**	**10 minutes**

Learning objectives

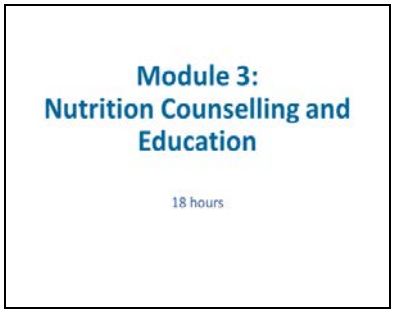
By the end of this module, participants will be able to:

1. Explain the meaning of 'counselling' and what makes it effective
2. Describe the multiple influences on nutrition-related behaviours
3. Adopt a client-centred approach to counselling that helps clients take action with available resources to overcome barriers and manage their own health
4. Demonstrate communication techniques needed for effective counselling

	5. Use the NCST counselling flipchart to engage clients in learning and changing behaviours to achieve nutrition goals 6. Help clients overcome nutrition-related challenges, maintain a healthy weight, and manage symptoms through diet 7. Prepare and deliver an engaging nutrition education session
Materials needed	• Flipchart and stand • Markers and tape • LCD projector • At least 12 copies of NCST Nutrition Counselling and Education Flip Chart (English and Chichewa versions) • Module 3 PowerPoint • Participants Manual – Module 3 • One copy of the Module 2 Evaluation Form for each participant • Pre and Post Test • Red post card
General notes	• Participants will learn more by doing and saying more themselves. Seize every opportunity to have them speak and be active. Use animation in the PowerPoint slides to encourage participants to offer key points *before* you show the content of slides. • Throughout the training, have participants state in their own words their key 'take-away' points from each segment. Repetition of content facilitates learning, especially when people restate information in their own words and give examples of how they will apply it.

3.0. Module Introduction (45 minutes)

- Show the Module 3 heading on **Slide 3.1.**



- Explain to the participants that the goal of the Nutrition Counselling and Education module is to build **skills, knowledge,** and **passionate commitment** to provide consistent excellent counselling that fosters behaviour change for the betterment of the client's health.
- Ask participants to introduce one another. For this exercise, ask the participants to turn to the person beside them to get into pairs. Each participant should ask his/her partner the following: 1) His/her name; 2) Job; 3) **One communication skill you feel you do well**.
- When the pairs are finished, ask each person to introduce their partner in turns. Allow a total of 5 minutes for this exercise.
- Summarise by highlighting the key skill sets that are already existing among the participants and how this training will strengthen their existing skills.

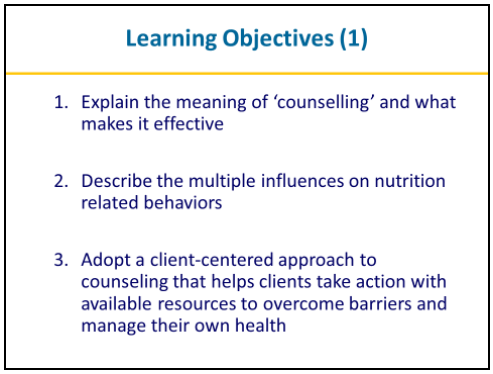
Review of Modules 1 and 2 (25 minutes)

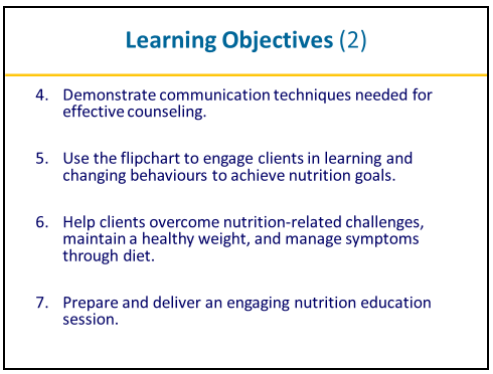
- Ask participants to divide into two groups and line up facing each other for a recap exercise.
- Ask each group to select a person to send to the middle to face off in a question/answer match, based on information learned in Modules 1 and 2.
- Explain that you will ask a question (see the questions and answers in the table below). Explain that the first contestant to raise his/her hand gets to answer. If the contestant answers correctly, his/her team wins a point. If the contestant gets the answer wrong, the other contestant has a chance to answer.
- If the other contestant also answers incorrectly, the first contestant's team gets a chance to answer.
- Continue the exercise until every member of both teams has had an opportunity to answer a question.
- Ask your co-facilitator to record each team's score. When the exercise ends, announce the winning team.

Question	Answer
What type of malnutrition does a person have if his/her BMI is 27?	Overweight
What is one consequence of an HIV-infected person becoming malnourished?	• Faster progression to AIDS • More susceptible to opportunistic infections • Harder to tolerate medications
For whom should an appetite test be conducted and for what reason?	Patients diagnosed with severe undernutrition to determine if they require inpatient treatment
How much extra energy per day does a woman need during the first 6 months of lactation?	505 kcal/day
What are the recommended anthropometric methods for assessing nutritional status of pregnant women and lactating women up to 6 months post-partum?	MUAC and weight gain
What are the features of grade ++ bilateral pitting oedema?	Oedema in both feet, lower legs, hands, and lower arms
Name a useful method for conducting dietary assessment.	24-hour recall or usual food intake.
A client who used to weigh 50 kg now weighs 45 kg. What percentage of her weight has she lost?	10%
What is the recommended index for classifying adolescents 15–18 years of age?	BMI-for-age
Name two reasons PLHIV might have inadequate food intake.	• Poor appetite • Mouth sores • Nausea or vomiting • Increased needs due to illness
Name two things that influence the amount of energy a person needs per day.	• Growth • Age • Weight • Sex • Illness/infection • Pregnancy/lactation
How much extra energy do asymptomatic PLHIV need each day?	10%

Module Objectives (20 minutes)

- Show the module learning objectives on **Slides 3.2 and 3.3.**

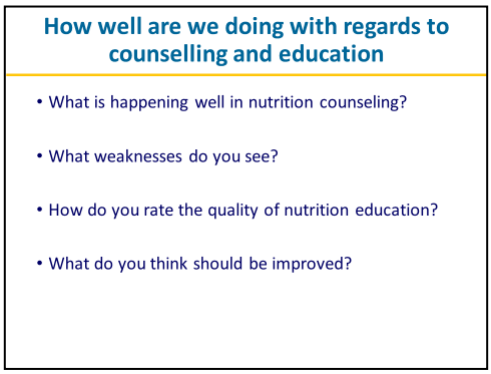




- Explain that enhancing skills will be the focus of training, but for skills to be effective, they must be combined with knowledge and attitude. The training therefore aims at helping participants develop all three of these elements.
- Ask participants: 'Are there any learning objectives you feel we should add'?

BRAINSTORM: How well are we doing in nutrition counselling and education?

- Ask participants: 'Based on your past training on counselling, and your experience generally, what is the current situation regarding nutrition counselling and education'?
- Show **Slide 3.4** and facilitate a discussion using the questions on the slide.



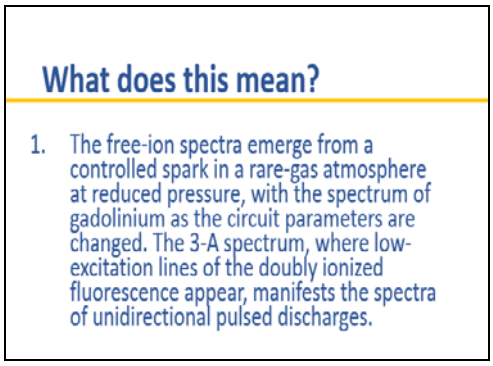
- As participants respond, make a list on flipchart of **strengths** and **weaknesses**. Some of the weaknesses may include:
    1. We present *too much* information.
    2. We don't ask and listen enough.
    3. We don't address actual barriers people face.
    4. We don't present a benefit the client really values.
- Explain that by the end of the training, participants should have good ideas for how to overcome the identified challenges and make counselling and education more effective in their own settings.

3.1 Understanding Communication (1 hour)

PRESENTATION: What is communication?

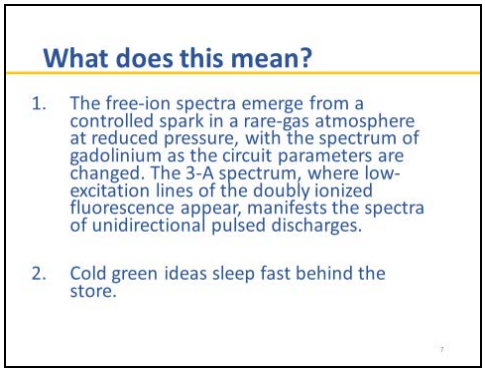
- Explain that prior to getting into the module content, it is important to think carefully about how terms are defined, because sometimes our underlying definitions contribute to weaknesses in practice.
- Acknowledge that both counselling and education are forms of communication.
- Ask: 'What is communication'?
- Show only the heading on **Slide 3.5.** Take ideas on key words that define communication. Then show the definition on **Slide 3.5.**

- Click to reveal the slide's photos in turn and NOTE that communication can be between two people, to a group, or involve different kinds of media.
- **Emphasize** that the key words here are: '**meaningful'** and '**exchange'**.
- Explain that **"TELLING"** people a bunch of information one way might not actually convey anything meaningful to the intended audience. 'Telling' is not an exchange of meaning, so it is not effective communication.
- Show the first sentence on **Slide 3.6**. Ask what it means.



- Explain that no one can understand this, except a scientist trained in this very technical topic.
- Point out that is important to use SIMPLE language so that everyone easily understands.

- Now show the second sentence on **Slide 3.6**. Ask what's the matter here?



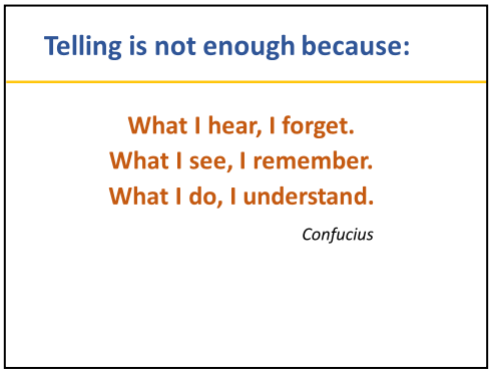
- Allow participants to say what they think and summarise by saying: 'We understand each word, but the sentence does not make sense—it's incoherent'. Further explain that: 'There may be words on a page, but if the person reading it doesn't understand, there is no communication'.
- Ask what is the point here? Get their ideas and then emphasize: '**If there is no meaning, there is no communication'.**
- **Show Slide 3.7,** and ask: 'How does this message work as communication'?

- Summarise the responses on the flipchart and compare with the following:
  - It uses limited words and doesn't try to communicate too many messages.
  - It is clear and simple, easy to understand.
  - It asserts a fact/educational information—which is helpful, but then the second part invites a reaction and provokes thinking.
- Explain that: 'Even if it's a poster (one-way communication), it can be engaging. By posing a question, it becomes more of a two-way process and can get people exchanging ideas, discussing barriers, etc.'. Stress the TAKE-HOME MESSAGES for the participants:
- If we want to really make a difference in peoples' lives, we need to truly COMMUNICATE with them.
- Communication is NOT just about the message.
- We can't change behaviour by just TELLING people what to do.

BRAINSTORM: Why is telling not enough?

- Ask: 'Why is telling not enough to communicate a message to someone?' Summarise the responses on the flipchart and explain the following:
  - One reason is that information may not sink into the brain if it's received passively. We have research that shows this about the human brain.
- **Show Slide 3.8** and review the content.

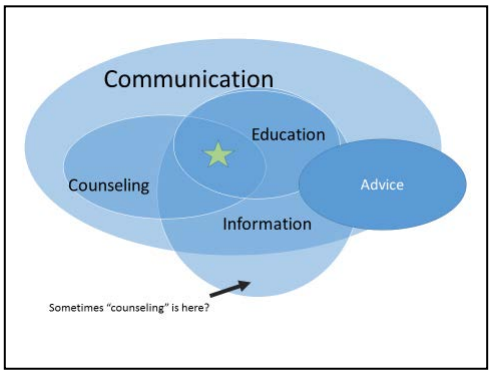
- Explain with the following nutrition example:
  - When a health worker tells you: 'You really need to eat a more diverse diet!' You may remember only 20% of what you hear.
  - If you see a poster with pictures of the food groups you may remember 40% of what you see on the poster
  - If you are watching a cooking demonstration, it will be more memorable than seeing the poster of foods, but if you actually chop vegetables and help DO the cooking, that will help you get to the 80% retention!
- Show **Slide 3.9**.



- Point out that this ancient wisdom applies to us and reinforces the point that adults learn best through interaction.
- Highlight TAKE-HOME MESSAGES:
  - The life and health of our clients is too important to waste words by just telling them what to do without considering what is meaningful and actionable for them.
  - If you want to have impact from your counselling and education, it really must be two-way, ACTIVE interaction!

BRAINSTORM: Distinguishing communication, counselling, education, information, and advice

- Ask participants: 'What is similar about communication, counselling, education, information and advice?'
- Ask: 'What makes these words different?'
- Write the responses on the flipchart.
- Show **Slide 3.10**.

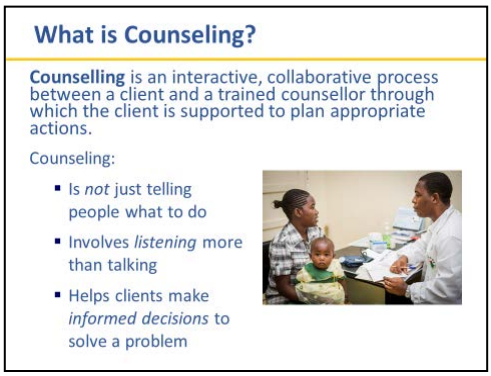


- Explain that we see different terms often used in relation to counselling. We need to distinguish them.
- Note that for counselling to be real, there should always be communication. The same applies to education. Education always includes information. But sometimes information isn't really educational. It may communicate something but not impart learning.
- Further explain that often, information is included in counselling but may not or may not be really educational or support the client. Sometimes, information is just information, just one-way data without meaning, so it doesn't really communicate.
- Remind participants that we said that COMMUNICATION is a SOCIAL process of interaction and meaning.
- Explain that on the other hand, 'advice' refers to passing of information that may or may not be educational or helpful to the listener. It usually implies authority and 'talking down' to a person. So while counselling *may* include a process of *advising*, we try not to think of counselling as the same as advice.
- Ask participants: 'If we think honestly, can we admit that sometimes what people call 'counselling' is really just one-way information that fails to really educate, help, or support the client'? This shows that, counselling conducted in that manner doesn't even communicate!
- Emphasize that, the star in **Slide 3.10** shows the 'sweet spot' where we want to be, thus providing counselling that uses information to be educational in response to clients' needs in a supportive way.

BRAINSTORM: What makes communication effective for counselling and education?

- Explain: 'Now we are ready to make a list of things that make counselling effective.'
- Ask participants: 'What would you put on your list of 'tips' or criteria for good counselling'?
- Write the responses on the flipchart. Summarise by highlighting that good counselling:
  - Provides suggestions based on a client's personal circumstances, needs, and constraints
  - Is non-judgemental and non-directive
  - Respects the client's thoughts, ideas, and concerns
  - Is a two-way conversation or discussion
  - Recognizes the client as equal and central to making changes/improvements
- Show just the picture on **Slide 3.11** and ask, '**What is happening here?** What are signs that it could be good counselling'?

- Mention: Eye contact; sitting at same level; face to face; the client seems to be talking and the provider seems to be listening; the provider has notes, so he's been consulting her records and will note assessment findings; seems to be a private room; etc.
- Show the rest of **Slide 3.11** and ask one volunteer to read the slide's content aloud.



- Explain: 'These REPRESENT A CLIENT-CENTRED and action-oriented approach to counselling. If we are really committed to getting results, really *helping people improve their own health,* then **the client is the main actor, not the provider**. Sometimes providers are too focused on the important guidance they feel responsible to impart and we miss the focus on the client'.

PRESENTATION: NCST Competencies and Standards for Nutrition Counselling and Education

- Refer participants to Reference 3.0: NCST Competencies and Standards for Nutrition Counselling and Education (see below).
- Explain that the participants will get a chance to learn and practise these skills during the classroom sessions and site visit.

Reference 3.0: NCST Competencies and Standards for Nutrition Counselling and Education

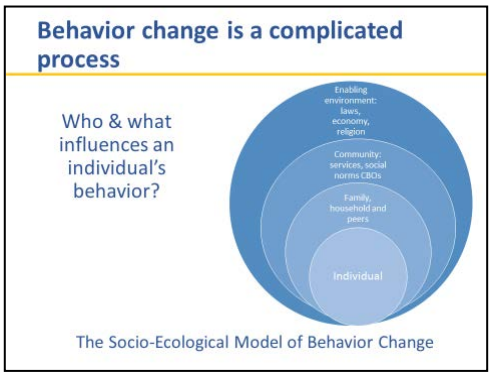
Competency	Minimum Standards
Uses the ALIDRAA checklist to counsel a client on nutrition (ALIDRAA: Ask, listen, identify, discuss, recommend, agree, appointment)	Establish rapport with the client
	Ask questions about the client's nutritional status, food intake, and nutrition problems and concerns
	Listen to and learn from the client
	Identify nutrition-related problems
	Discuss with the client different options to overcome a problem
	Recommend and negotiate doable actions with the client
	Agree with the client to try one or more options to overcome a problem
	Make an appointment for a follow-up visit
Conduct a nutrition education session	Plan for a nutrition education session
	Deliver a nutrition education session to adolescent and adult clients

- **Mini recap:** Ask participants: 'What sticks out for you from this session? What are your take-away points from this discussion?'
  - Summarise the discussion with the following points:
    - Counselling is a kind of communication.
    - Education is another form of communication and may be part of counselling.
    - Communication is nothing without meaning.
    - To be effective, counselling should be:
      - Two-way communication
      - Focused on the client's needs and situation
      - Oriented to action, supporting behaviour change
    - Information is not enough to change behaviour.
  - People learn best by doing things.

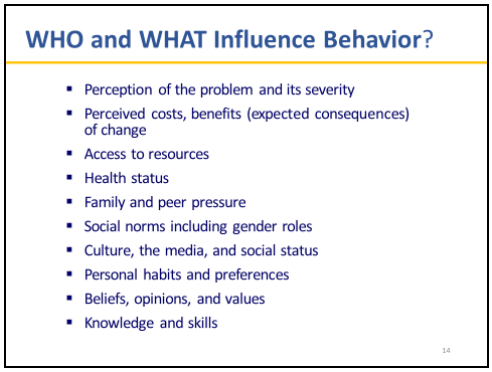
3.2 Factors that Influence Behaviour (45 minutes)

PRESENTATION: Counselling for behaviour change

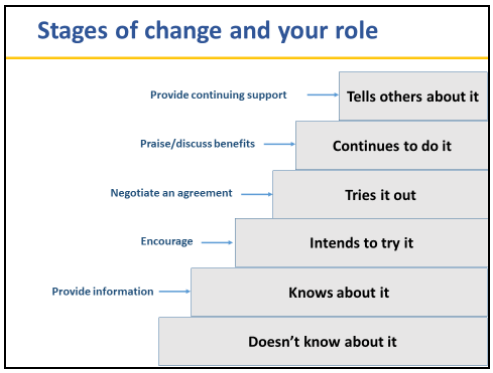
- Explain that for counselling to be effective, it is important to understand what influences an individual's behaviour.
- Show the **Slide 3.12** heading and question 'Who and what influence an individual's behaviour'?



- Draw circles on a flipchart and ask the participants to complete **the socio-ecological model.** After they complete it, show the graphic on **Slide 3.12**.
- Explain the following, and ask participants to offer quick examples for each level showing how someone's behaviour was influenced:
  - An individual (your client) is at the center of a lot of influences; he/she acts in a **social context.**
  - The closest and most direct influences are family and friends and neighbors with whom a client has an intimate interpersonal relationship.
  - Then there are churches, schools, community groups, workplace relationships and then the broader community.
  - The larger environment also shapes us, including broader social norms and culture, the government, mass media, and overarching structures like laws and policies in a health system.
- Emphasize that since human **behaviour is complicated and driven by many different forces,** counsellors must be mindful of all those influences that affect a client's behaviour and incorporate a discussion of those forces in counselling.
- Show **Slide 3.13** and ask a volunteer to read aloud some of factors that can influence behaviour.



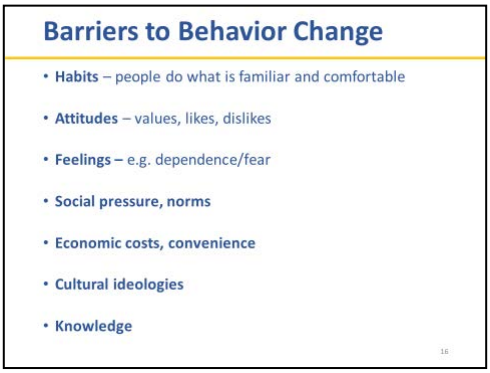
- Show **Slide 3.14**.



- Explain that in addition to being sensitive to the social context and the different factors influencing behaviour, we need to be sensitive to the particular stage our client is in the change process.
- Explain how counselling takes a particular focus at each stage.

BRAINSTORM: Barriers to behaviour change

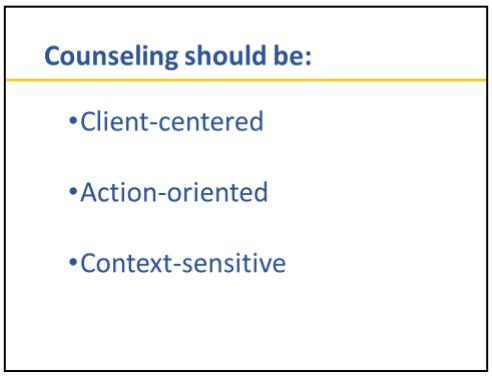
- Ask participants: 'What do we mean by barriers? What are barriers to dietary diversity? Barriers to ART adherence'?
- Write the responses on the flipchart and compare with points on **Slide 3.15**.



- Explain that, whilst we are trying to support behaviour change—considering a client's social context and stage in the change process—we need to be prepared to ask about

barriers to adopting certain behaviours we recommend and help the client address them.

- We can help clients overcome barriers by:
  - Asking what makes a practice difficult and how client has tried to overcome the barriers
  - Asking about positive resources ('enabling factors' that can help)
  - Suggesting some small doable actions that they could try to achieve the benefits and solve problems
- Show **Slide 3.16** and stress that these are the three key features of effective counselling, which they should always remember.



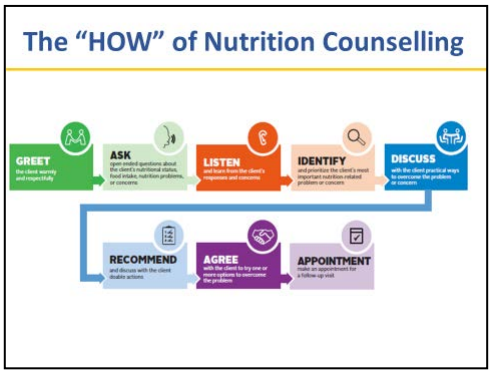
- Explain the following to summarise what we have learnt:
  - Counselling should focus on an individual's specific needs **(client-centred)**
  - Counselling should help the client identify steps they can take to solve their problem and should provide recommendations that are doable and feasible **(action-oriented**)
  - Counselling should include questions about the client's situation and offer strategies appropriate for their context (**context-sensitive**).
- Ask: 'Why do we focus on the *client action* and *context'?*
- Explain: Unlike treatment for malaria or a broken neck, patients living with HIV or TB often are their own primary caregiver and management of the illness takes place at home. As such, self-efficacy is a key to behaviour change. A patient must have knowledge and skills to do something *and* feel confident that he or she is able to make a change.
- **Mini recap:** Ask: 'What sticks out for you from this session? What are your "take-away" points from this discussion?'

3.3 Introduction to Counselling—The Art ('How') and the Science ('What') (45 minutes)

PRESENTATION: The art ('how') of counselling

- Explain that after having understood what constitutes counselling, now we want to get into the actual 'HOW-TO' for doing counselling.

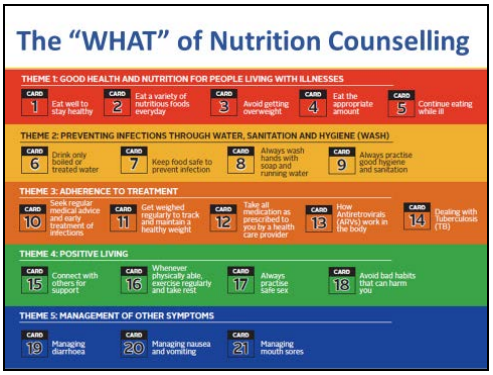
- Show **Slide 3.17**.



- Explain that this diagram captures best practices and is based on evidence of what works. It reflects the same elements found in 'ALIDRAA'. EXPLAIN the graphic, step by step.
- Ask participants: 'Which of these do you think are the most crucial and most neglected steps'?
- Write the responses on a flipchart.
- Show the ALIDRAA video clip to illustrate the process.
- Explain that ALIDRAA, as represented in the graphic, is the foundation of learning the skills and process of **DOING** counselling. But before we go into detail on the 'how'—which is more 'art' than science—we are going to go over the easier part, which is all science: the CONTENT or the 'what' of counselling, or key messages.

PRESENTATION: Understanding the 'what' of counselling (key messages)

- Show **Slide 3.18**.

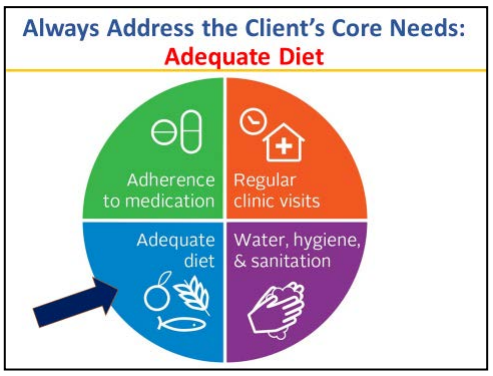


- Explain that this serves as the contents page of the flipchart. The content is organized by theme—five main areas that cover the core needs of patients living with TB or HIV, based on global guidance.
- Show **Slide 3.19**.

- Explain:
  - The flipchart contains a total of 21 cards to allow you to focus on specific content that meets your client's needs.
  - There are many important needs but not all are equal, and patients' needs vary.
  - You should always work towards addressing these core needs of PLHIV if the patient is having any problem with: **1) adequate diet, 2) water, hygiene, and sanitation (WASH), 3) regular clinic visits,** and **4) adhering to medication**.
- Explain that in this training, we will discuss each core need at a time and practise identifying the relevant pages in the flipchart to address each core need.

3.4 Core Need 1—Adequate Diet (Nutrition) (1½ hours)

- Show **Slide 3.20**.

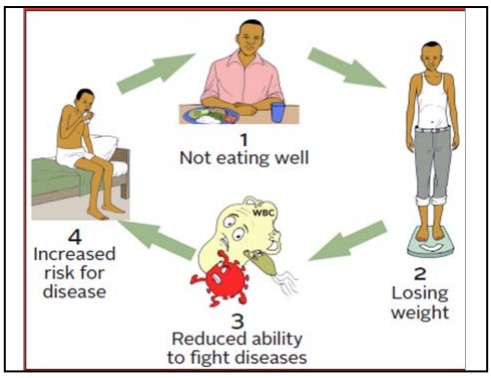


- Explain that nutrition is the first core need for PLHIV. This is because, without an adequate diet, people living with infectious diseases like HIV or TB are extra vulnerable and may not get the full benefits from medication and other elements of their care.
- Ask: 'What do we mean by "adequate"?'

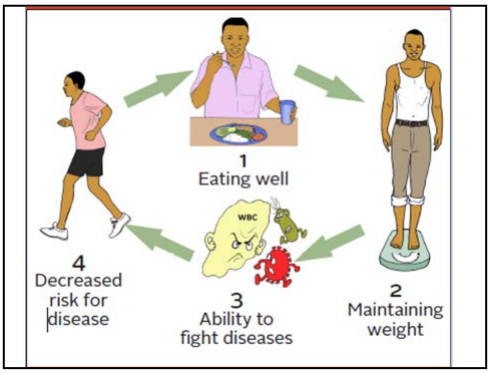
- Without getting into a lengthy discussion, highlight the point that adequate means enough quantity *and* quality that can be achieved through a diversified diet.

SIMPLY PUT 'adequate' = Enough **quantity** + **quality** (DIVERSITY).

- Show **Slide 3.21** and ask a volunteer to explain the picture as if they were talking to a client.

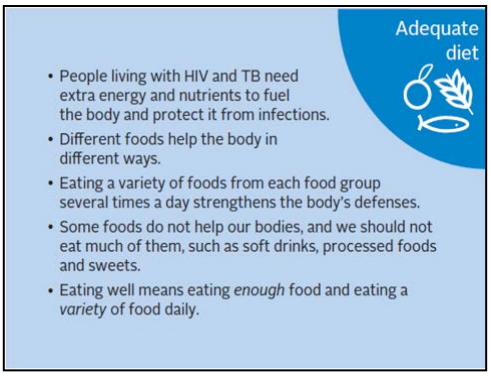


- Below is the correct explanation the volunteer should give:
  - Poor nutritional intake leads to → weight loss, muscle wasting, macronutrient and micronutrient deficiency, which lead to → impaired immune systems, poor ability to fight HIV and other opportunistic infections (OIs) → which lead to increased infections, viral replication, and may excel progression to AIDS → which lead to poor health that brings increased nutritional needs but also depresses appetite, which can decrease food intake and perpetuates the cycle of poor eating and illness.
- Show **Slide 3.22** and ask a different volunteer to explain what they see on the picture.



- The volunteer should notice that this is the opposite of the previous picture and explain that:
  - Eating well leads to → having sufficient nutrients and weight maintenance → which strengthens the immune system, improving the ability to fight HIV and other infections → which in turn reduces the occurrence of OIs and may slow progression to AIDS → which results in better health that helps improve appetite, driving adequate consumption of diverse foods to meet nutritional needs, which perpetuates the healthy cycle.

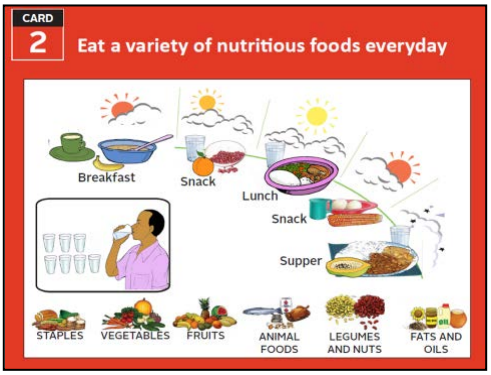
- Summarise: Nutrition and infection with TB or HIV are linked in a cycle, where diet and nutritional status affect health in a mutually reinforcing way, both for good and for bad.
- Show **Slide 3.23** and have volunteers read out the points one by one.



- Explain that these are the most fundamental key messages on the topic of adequate diet for PLHIV and TB patients. You should try to remember these five points, but you can always refer to the flipchart as needed during counselling.
- Facilitate a discussion by asking:
  - Which of these messages do you think is difficult to communicate?
  - What might be hard for people to understand?
  - How can you convince clients that a diverse diet will help improve their health?
  - What are some barriers to an adequate diet that you may address in counselling?
  - What resources can you mobilize or refer to in order to improve access to a diverse diet?

PRACTICE: Using the counselling flipchart to communicate key messages on diet

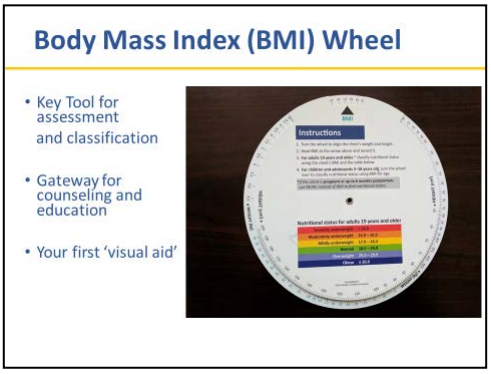
- Ask participants to get out the counselling flipcharts (preferably the Chichewa version).
- Show Slide 3.24 and refer participants to Card 2: Eat a variety of nutritious foods every day in the counselling flipchart.



- Ask a volunteer to explain the picture as if he/she were talking to a client. Try to keep the explanation to 2 minutes. (Point out that the key messages are on the back of the

card, but this is all very familiar to them and we shouldn't spend time reading through it now.)

- Explain the TAKE-HOME MESSAGE:
  - We cannot just tell people to 'EAT WELL'; we need to be very specific.
  - We need to make sure the client understands the benefits that different kinds of foods give our bodies.
  - We need to communicate how specific dietary choices address the client's own symptoms and nutritional status.
- Explain that the counselling flipchart should be used to help the client identify dietary choices based on her/his nutritional status. Explain the following:
  - After explaining to the client the different food groups and how they help our bodies, we need to be prepared to advise on how he/she can improve his/her own nutritional status.
  - We know a person's nutritional status from assessment and classification, which happens before counselling.
- Show **Slide 3.25**.



- Explain that the BMI wheel can serve as your first visual aid to engage the client. Providers should:
  - Highlight the colours on the wheel to aid understanding of nutrition classification Allow the client to look at the BMI wheel to see how it works.
  - Ensure the client understands what his/her BMI is and what that means for nutritional status.

- Show **Slide 3.26** and refer participants to **Card 3** in the flipchart.

- Explain that often we think of undernutrition as the only problem in PLHIV; however, it is important to also address overweight and obesity. Explain:
  - We need to help clients see the relationship between nutrition and health problems they experience. They may not know that overweight is an important factor in their symptoms (hypertension, orthopaedic problems, fatigue, diabetes, etc.)
  - Even for PLHIV, obesity can be a problem. If your patient is classified as overweight or obese, you need to address it.
  - Point out that **Card 3** helps us communicate the causes and consequences of overweight and obesity.
- Show **Slide 3.27** and refer participants to **Card 4** in the flipchart.

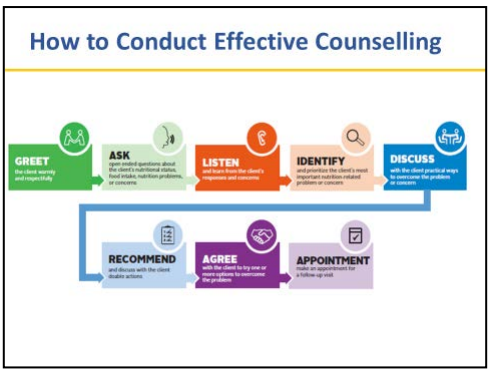
- Help the participants understand the picture by explaining the following:
  - The circle shows the general proportions of different food groups recommended to be eaten by people of NORMAL nutritional status and healthy weight.
  - The arrows give a quick indication of whether a person should consume more or less of a food group, based on their status.
  - The provider's side of Card 4 has specific dietary guidance for patients with normal nutritional status. Participants will have time to use the flipchart and practise counselling.
- Now refer participants to **Card 5: Eat While Ill** in the flipchart.
- Ask a volunteer: 'What do you see in the picture'?

- When the first volunteer finishes, ask another volunteer to read through the content on the back side (provider/counsellor side of the card) (shown below).

- **Mini recap:** Ask: 'What sticks out for you from this session? What are your "take-away" points'?

3.5 Developing Counselling Skills—Part 1 (3 hours)

- Explain: We have just covered the first part of the core content for counselling—on adequate diet (nutrition). We will discuss more of the key content from the flipchart later. But the most important part of this training is the 'HOW,' which focuses on the skills, which we will focus on now.
- Show **Slide 3.28,** which reminds us of the ALIDRAA counselling approach.



- Explain that the diagram is in the flipchart and should always be used as a reminder while doing counselling.
- Refer participants to **Reference 3.1: Effective Nutrition Counselling Using ALIDRAA.** Point out that the reference can be printed and laminated as a job aid and can be placed on a wall or kept on a desk at the health facility and used at the community level by expert clients or volunteers.

PRESENTATION: Understanding ALIDRAA: Step 1. Asking and Listening

- Explain that the first key still is **asking and listening**. This is a very important step to the counselling process because:
  - You cannot advise if you haven't heard what the client's issues are.
  - You cannot recommend a feasible and appropriate action if you haven't learned details about his/her situation.

BRAINSTORM: The difference between asking and listening

- Ask participants: 'What is the difference between hearing and listening'?
- Write the responses on the flipchart and compare with the following:
  - Hearing is involuntary since it is a physical process, does not require effort, and does not necessarily involve understanding.
  - Listening is voluntary because it is something you *choose* to do. It is a *social* process that requires active effort to gain understanding of meaning and not just hearing the words.
- Ask participants: 'Why is it important to listen? What can you do to listen well in order to really understand the client's perspective'?
- Write responses on the flipchart and compare with the following techniques to **listen actively**:
  - Maintain eye contact
  - Avoid getting distracted
  - Paraphrase or reformulate what the client says
  - Ask clarifying questions

PRACTICE: Active listening skills

- Divide participants into groups of three. One person will take the role of a client, another one will take the role of a provider, and the other one will take the role of an observer.
- Explain that the aim of this exercise is for the 'counsellors' to practise asking questions and listening carefully to the 'clients'. Indicate that at this point, they are only asking questions to probe for more information from the client in order to identify what the issues are so that the priority problem can be identified.
- Ask participants to turn **to Exercise 3.1** of the **Participant Manual** (also provided below).
- Explain the following instructions:

- Each person in the group should select a scenario. Each participant should get the opportunity to play the role of a client, observer, and service provider.
- Read the scenario as a group so that everyone understands it. The 'client' can be creative in the way he/she fills in details in each case.
- For each round, one member of the trio will act as a client, another as a service provider, and another as an observer.
- The client and the service provider should act out the counselling session where the client presents her/his case as per the scenario chosen and the service provider asks relevant questions to understand the client's issues.
- The observer should observe the discussion using the observer checklist in the exercise. For this exercise, the observer is also responsible for making sure that the service provider does not jump ahead to suggesting recommendations. If the service provider starts to say anything beyond asking and listening, the observer should give the red card to stop the conversation.
- The goal of the service provider is to identify the priority problem and topic he/she wants to focus on during the rest of the counselling session. If the session has not already been stopped by the observer, the role play will end when the service provider announces his/her identified priority by saying to the others: 'I have learned enough from the client and believe I should focus my counselling on X topic'.
- At the end of each round, the trio should process feedback from the role play. First the client should explain how she/he felt during the counselling. Second, the observer should provide feedback on how the service provider did, referring to the checklist and any notes made.
- The trio should take turns in acting out the roles until each person has acted out each of the three roles using a different scenario at every time.
- Tell the group that this method of practicing counselling skills in role play triads/trios will be repeated throughout the rest of the workshop.

Exercise 3.1: Role Play—Asking and Listening

Case Scenarios 1–3

Charity, age 52, has diabetes. She complains of fatigue and no motivation. Her weight has increased over the past few years, and her current BMI is 31. She does not follow any specific diet, although she says her health care providers have in the past advised weight loss and exercise to improve her health status.

David, age 40, started ART 3 weeks ago. He complains of some nausea and diarrhoea. He works full time and eats little, if anything, for lunch. In the morning, he normally eats a small bowl of porridge. His main meal is dinner. His BMI is 20.0.

Joyce, age 24, has not been feeling well recently and has lost about 8 kg in the past month. She has been having diarrhoea and vomiting for the past 2 weeks and feels weak and nauseated.

Observer Checklist and Client Satisfaction Tool

For the observer: Role play on 'ask and listen'

	During the counselling session:		
1	How many open-ended questions did the counsellor ask?		
	Did the counsellor:	**Y**	**N**
2	Ask about diet?		
3	Ask about medication?		
4	Ask about symptoms?		
5	Ask clarifying questions?		
6	Use reflective listening/reformulate what client said?		

For the client: 'Satisfaction' tool (overall)

	During this session, did the counsellor:	**Y**	**N**
1	Show respect and kindness?		
2	Ask questions about my situation?		
3	Listen to me attentively?		

DISCUSSION: Understanding ALIDRAA—Step 2. Identify and Prioritize

- Facilitate a discussion with participants by asking the following questions:
  - How do you know what is the most important thing to focus on for counselling?
  - Do you think some information in the flipchart is always more important than others?
  - Can we provide a rule or guide to always know what to prioritize?
- After hearing the participants' responses, explain:
  - You will know what focus on after asking and listening. There is no guidance in the flipchart on how to prioritize because prioritization depends on the person and their current situation.
  - There are some issues that are clear priorities over others, based on the severity of health impacts. For example, ART adherence is a matter of life or death, so if a patient has trouble adhering to their ARV schedule, they need support to overcome those challenges before focusing on improving dietary diversity or sanitary practices. If a client is adherent but has frequent intestinal infections, which affect absorption of nutrients from food, the priority may be to focus on WASH practices in counselling, leaving nutrition topics for a later session.
- Summarise by pointing out that in the 'identify and prioritize' stage:

- The counsellor analyses the information gained through asking, listening, and reviewing the client's records (assessing) and then identifies priority needs.
- The 'art' of analysis is not easy to prescribe but should follow general guidance on the hierarchy of needs (adherence to drug treatment, freedom from chronic intestinal infection, nutrition).
- Use your expertise, follow your judgement, and seek guidance if you aren't sure.

PRACTICE: Role play—asking, listening, and identify

- Ask participants to break into new trios. Follow the instructions from the last practice session whilst using the following the three scenarios and checklists in exercise 3.2.
- Ask participants to turn to **Exercise 3.2** of the **Participant Manual** for the scenarios and checklists (this is also provided below).
- When participants are finished with the role play, present the content below.

PRESENTATION: Understanding the 'what' (content) of counselling (continuation)

- Remind participants that we have practised the first set of skills of the art ('how') of counselling (the ALIDRAA process). The last part of ALIDRAA process involves recommending doable actions. As such, before we continue with the last part of the 'how' of counselling, we need to finish our discussion on the core needs (content of counselling) so that we understand all the possible problems for PLHIV and TB clients and available key messages to communicate to the clients.
- Also mention to participants that these key messages have been summarised under different themes of the NCST counselling flipchart. We have already discussed the nutrition core need and now we will finish discussing the remaining three core needs.

Exercise 3.2: Role Play—Asking, Listening, and Identify

Case Scenarios 1–4

1. Alice is 4 months pregnant. She has been feeling nauseated and has not gained weight since her first antenatal visit.
2. Chimuka lives with relatives in a place with no running water and no latrine. She's been sick for many days with diarrhoea and vomiting. She doesn't cook for herself.
3. Esther has a baby who is 4 months of age. She doesn't know her HIV status. She has been told that babies need formula to grow well.
4. Francis has missed appointments to collect his ARVs, so there are times when he does not take them. He drinks a lot of alcohol.

Observer Checklist and Client Satisfaction Tool

For the observer: Role play on 'asking, listening, and identify'

	During the counselling session:		
1	How many open-ended questions did the counsellor ask?		
	Did the counsellor:	**Y**	**N**
2	Ask about diet?		
3	Ask about medication?		
4	Ask about symptoms?		
5	Ask clarifying questions?		
6	Use reflective listening/reformulate what client said?		
7	Identify an appropriate flipchart page to begin discussing?		

For the client: 'Satisfaction' tool (overall)

	During this session, did the counsellor:	**Y**	**N**
1	Show respect and kindness?		
2	Ask questions about my situation?		
3	Listen to me?		
4	Address my main concerns?		
5	Give me information that I understand and can use?		
6	Discuss a plan for an action that I am confident I can do?		

- **Mini recap:** Ask: 'What sticks out for you from this session? What are your "take-aways"?'

3.6 Core Needs 2—Water, Hygiene, and Sanitation (WASH) (25 minutes)

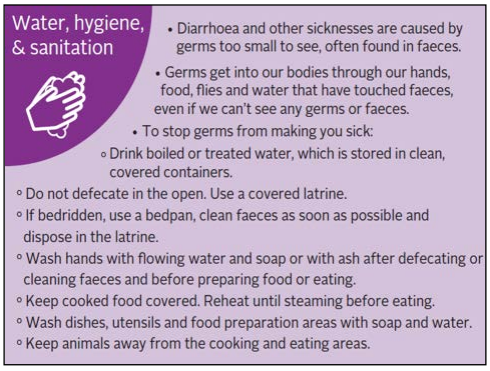
- Show **Slide 3.29**.

BRAINSTORM: Water, sanitation, and hygiene

- Ask participants: 'Why are clean water, sanitation, and hygiene so important for PLHIV, as it is for all of us'?
- Let participants respond and highlight the following points as needed:
  - People with HIV, TB, or any condition that weakens their immune system are particularly vulnerable to infections that can be caused by germs that can get into our water and food and on our hands.
  - Diarrhoea and other infections from poor sanitation can make these people even sicker, and lose appetite and weight, and can contribute to that negative nutrition cycle and make it easier for HIV and other infections such as TB to multiply.
  - People who have a lot of intestinal infections and who have diarrhoea often experience damage to the inside lining of their intestines, which makes the body unable to absorb and use nutrients. So, even if they eat a good diet, they could be malnourished.

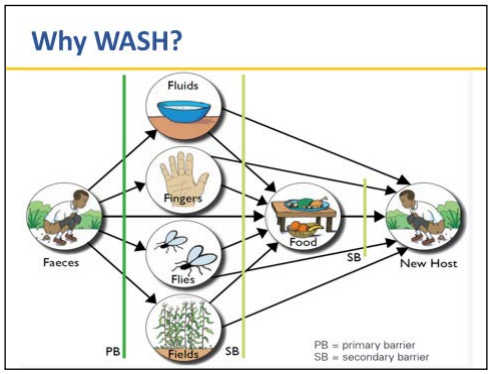
DISCUSSION: Key messages on hygiene and sanitation

- Show **Slide 3.30** and ask participants to take turns reading through each bullet.



- Explain that these are the key WASH messages provided in the flipchart.

- Facilitate a discussion using the following questions:
  - What about these messages is hard to communicate?
  - Do clients understand that invisible germs cause intestinal infections? If they don't understand germ theory, then how can you help them? (SHOW the next slide as an example.)
  - What are the biggest barriers to these practices?
    - If related to social norms: Are there role models in the community you can mobilize for testimonies and practical support?
    - If it's because they don't understand the rationale and the way disease is spread, do we need to prepare providers to explain germ transmission?
    - If it's access to resources, are there programs or resources you can refer clients to?
- Summarise the discussion by referring participants to **Slide 3.31.**



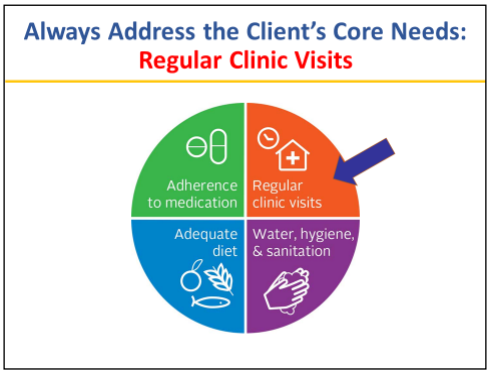
- ***Remind*** people of this cycle (which they should be familiar with) and just ***note*** that:
  - A visual aid like this could help to communicate the message to clients who need convincing to understand why they should do what we recommend.

GROUP WORK: Flipchart content on water, sanitation, and hygiene

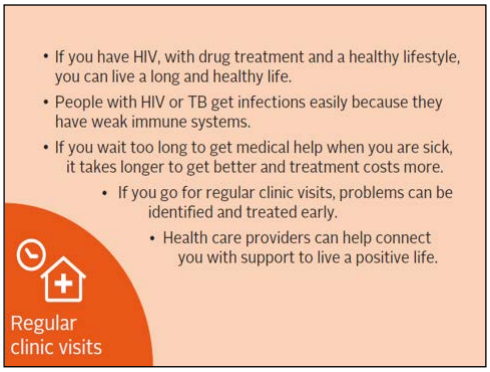
- Ask participants to break into four groups of eight and to sit in a circle. Assign one facilitator for each group as a presenter.
- Have the facilitators present each card **(Cards 6–9)** as if they are doing counselling. Engage group members for input, as they are playing the role of 'client'. Spend 10 to 15 minutes on the presentation.
- Explain to participants that they will remain in the same groups for the next segment when the facilitator will lead review of the 'regular clinic visits' core need.

3.7 Core Needs 3—Regular Clinic Visits (25 minutes)

- Show **Slide 3.32**.



- Ask participants: 'Why would we consider this as one of the top priority needs we must always keep in mind'?
- Write the responses on the flipchart and highlight the following points:
  - People with HIV or TB have weak immune systems, so identifying and treating OIs early is important.
  - They need regular weighing to catch weight loss (or overweight/obesity) and address it with proper support.
  - IF they DON'T go for regular checkups, untreated infections can do a lot of damage and may end up costing more to treat.
  - If they DO go to the clinic regularly, health care providers can treat small problems before they become more serious and can help connect patients with other support as needed.
- Show **Slide 3.33** and explain that these are the key messages to give clients on regular clinic visits.



- Ask participants to take turns reading each of the bullet points.

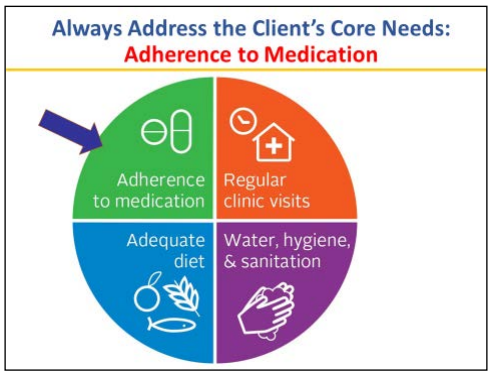
GROUP WORK: Reviewing flipchart content on regular clinic visits

- Ask participants to break into their previous groups of eight and sit in a circle. Have the facilitator present each card **(Cards 10–11)** as if doing counselling.
- Engage members of the group for input, as they are playing the role of 'client'.

- For each card, ask participants: 'What do you see in this picture'? Then have volunteers take turns reading the bullet points on the back out loud. Spend 10–15 minutes on the presentation.
- Ask participants to stay in their groups as the facilitator leads discussion on adherence to medication.

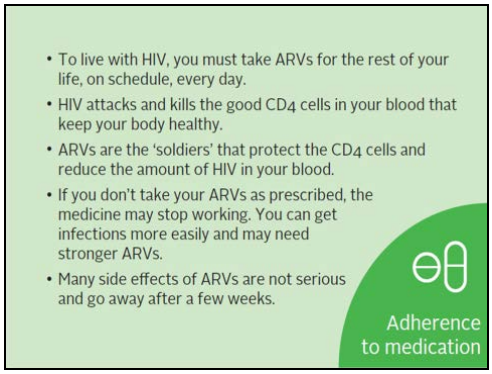
3.8 Core Needs 4—Adherence to Medication (25 minutes)

- Show **Slide 3.34** and explain to participants that adherence to medication is the fourth and last core need.



DISCUSSION: Why is adherence important?

- Ask participants: 'Why is adherence so important? Why is it important that nutrition counselling for PLHIV/TB includes addressing drug adherence?'
- Write the responses on a flipchart.
- Ask participants: 'What do you think are the challenges or gaps/weaknesses in our ability to support peoples' adherence through nutrition counselling'?
- Let them discuss the question for a few minutes then highlight the following points:
  - Adherence is crucial because if people don't take their medication, they will become sick and ultimately die of AIDS or complications from related infections. So, even though we are trained to focus on nutrition, and we know people can die of diarrhoeal diseases, when working with PLHIV, drug adherence must be a top priority for us to address with every patient we meet. We should either address it ourselves, or refer the client to an adherence counsellor if we are not able.
- Show **Slide 3.35** and ask participants to take turns reading the key messages.



GROUP WORK: Reviewing flipchart content on adherence to medication

- Explain to participants that drug treatment adherence and the key messages are on Cards 12–14 of the counselling flipchart.
- With participants in their groups of eight, sited in a circle. Have the facilitator present each card (Cards 12–14) as if doing counselling. Engage group members for input, as they are playing the role of 'client'. Spend 10–15 minutes on the presentation.

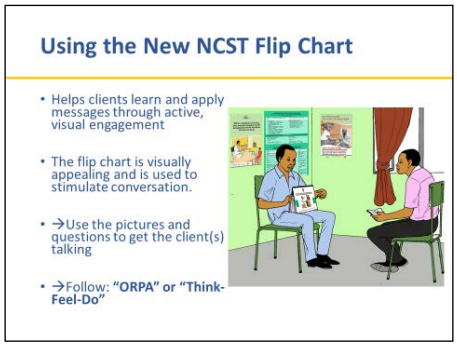
3.9 Reviewing Remaining Content of the Flipchart (25 minutes)

GROUP WORK: Reviewing flipchart content on positive living and symptom management

- Explain to participants that beyond the core needs, the counselling flipchart also contains information on positive living and symptom management. These are key to strengthen an individual's capacity to overcome other social challenges that would affect adoption of the optimal practices suggested by the key messages in the core needs. In addition, positive living can help build the client's confidence to manage the symptoms that they are likely to experience as they take treatment.
- Point out that key messages on positive living are on Cards 15–18 of the flipchart and that key messages on management of symptoms are on Cards 19–21.
- Ask participants to return to their groups of eight and sit in a circle. Have the facilitator present each card as if doing counselling. Engage group members for input, as they are playing the role of 'client'. Spend 20–30 minutes.

3.10 Using the New NCST Flipchart (25 minutes)

- Explain to participants: At this point we have gone through all the 'what' (content) of counselling in the flipchart. We are familiar with the content and we can quickly identify relevant pages as we interact with the clients.
- Having understood **what** is in the flipchart, we need to understand **how** we will use the flipchart. This is explained by 'ORPA' in the flipchart:
  - **O**bserve and **R**eflect on what is happening in the picture.
  - **P**ersonalize: Discuss how it applies in her/his life.
  - **A**ct: Consider how to do it at home.
- Ask participants to form pairs or trios to discuss the following for 5 minutes:
  - What is the purpose of visual aids for counselling and education? What are the benefits?
  - What are memorable materials you've seen or used in the past?
  - What makes them memorable?
  - What are challenges in using them? Why don't providers use them?
  - What helpful tips have you discovered?
  - What feedback have you gotten from clients?
- Ask the pairs/trios to share what they discussed in a plenary.
- Summarise the discussion by pointing out that:
  - The counselling flipchart is not a substitute for quality face-to-face interaction. The images are to stimulate that interaction and make points easier to understand, contextualize, and remember.
  - The same communication principles apply as for when we're just talking: We want TWO-WAY, CLIENT-CENTRED interaction.
- Show **Slide 3.36**.



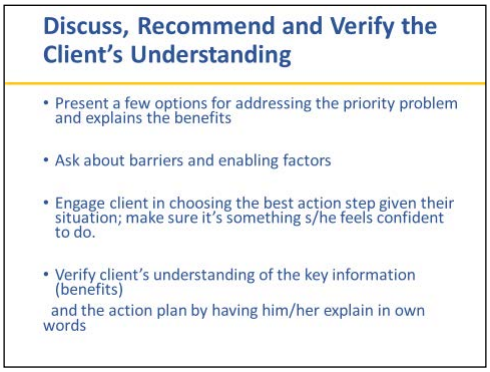
- Explain that materials can be used for individual or group counselling and education.
- Also explain the following:
  - Use the text as your guide but be familiar with it so you don't need to read it.

- Observe the client's face and behaviour as she/he looks at the pages and interacts. If the client's face isn't lighting up or is looking puzzled or worried, you need to take time to ask probing questions to understand what they're not getting or are worried about.

- **Mini recap:** Ask: 'What sticks out for you from this session? What are your "take-aways"?' Developing Counselling Skills—Part 2 (3 hours)

PRESENTATION: Understanding ALIDRAA—Step 3. Discuss, Recommend, and Verify Understanding

- Show **Slide 3.37**.



- Explain: This is what people think of as 'ADVICE'. It's the education component of counselling. It should not be a long 'lecture' but should offer very practical information based on needs, using the flipchart to explain and emphasizing the benefits of recommended practices. A crucial part of this step is to check to make sure the client understands what has been discussed, by using 'teach back' techniques to have the client put in their own words what they 'got' from the discussion. Information is of no use if client does not understand and 'own' it.

- Highlight the challenge to participants—they need to break with the 'old' ways of doing 'counselling.' Explain that they need to work hard to:
  - Break the bad habit of giving too much information
  - Communicate in words and ways that the client understands
  - Hear clients say in their own words what they understand. **DO NOT go on to the next stage without checking for understanding!**

- Share this proverb: 'Give a man a fish and he eats for a day. Teach him to fish and he eats for a lifetime'. Refer participants to **Reference 3.3: Techniques and Prompts to Check for Understanding** in the **Participant Manual** (also shown below). Ask volunteers to read the content aloud, taking turns with each section.

Reference 3.3: Techniques and Prompts to Check for Understanding

'Ask – Tell – Ask' to engage the client actively in listening before you start to explain and to ensure that the client understands the information you gave her/him.

First, Ask for Permission. You might say:

- 'Is it ok if I share some information about the importance of eating enough green vegetables'?
- 'I'd like to show you how to check your temperature for fever. Would this be a good time'?
- 'There are a number of things I want to tell you about the new medication. Ready'?

Then provide information, considering the following tips:

- Use language the patient can understand and avoid jargon.
- Share information in small bits, tailored to the patient's questions or concerns.
- Use graphics, charts, and models when possible.
- Monitor whether the patient is tracking nonverbally.
- Encourage involvement from the family/significant other.
- Give the patient handouts to take home.

Finally, Ask for Understanding. You might say:

- 'From what I have discussed, what do you feel is the most helpful information for you'?
- 'What are the main points you got from what I explained? Just put it in your own words'.
- 'Can you please review what you plan to do and why, based on our discussion'?
- 'When you go home, what will you say to (someone in household) about what we talked about today and what you plan to do'?

'Teach Back' (closing the loop): The patient 'teaches back' to you, or puts the information you explained into their own words. You might say:

- *'I'm not sure how clearly I explained this. Please explain what we just discussed, so I can be sure I included everything and it was clear'.*
- *'What will you tell your husband about the changes we talked about making to your diet today'?*
- *'Let's review the main side effects of your medicine. What are the two things that I asked you to watch out for and to let me know if you get them'?*
- *'Please show me how you would wash your hands, so I can be sure my instructions were clear'.*

DISCUSSION: How to help clients overcome barriers as we discuss recommendations

- Remind participants that we are telling people to take up practices that they probably don't do or don't do well enough or often enough. Clients may already KNOW about the 'importance of washing hands'. But there are reasons why they don't do it. Therefore, it is our responsibility as service providers to understand why they don't do what you want them to do.
- Explain: If you are mindful of those influences, you can help clients think about how to overcome barriers and work with positive influences to solve the problems at hand. We must listen for particular reasons for behaviour and try to focus on relevant barriers BEFORE we jump in with advice.

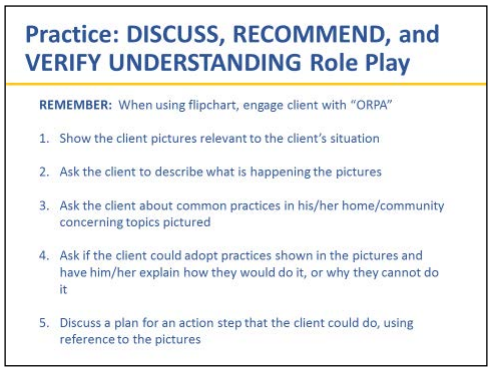
BRAINSTORM: How can counsellors help clients overcome barriers?

- Ask participants for ways counsellors can help clients address barriers
- Write the responses on the flipchart and summarise with the following points:
  - Ask and listen for specific barriers
  - Ask about positive factors/resources that support behaviour change
  - Offer relevant suggestions
  - Focus on small, 'doable' actions to try
  - Highlight benefits that the client values
- Ask participants to give examples of client problems they may come across in their daily work. For example, you're assessing a client's situation and you ask her what she eats. From what she tells you, you identify the need to address dietary diversity as a problem.
  - What additional questions would you ask to get the client talking about barriers to eating a varied diet?
- Facilitate this discussion as participants offer ideas, and add other questions to explore different angles on barriers and enablers:
  - What will you say if she just says, 'I can't afford to eat anything else'?
    - If money is a key barrier, you can talk about resources in community/refer to a savings group, etc.
    - Ask about locally available foods she can get without spending more and try to identify specific barriers to that.
  - You can ask: 'Who prepares or buys food in the household?' or 'what do you like to eat?' and explore other factors are affecting her food choices.
- Explain: Based on your exploration of behavioural determinants (barriers and enablers), you will help the client to identify small, realistic actions he/she can practise at home.

- Ask: 'What would you ask a client to help them think of what they can possibly do'? After hearing responses, highlight what they should ask:
  - What step do you think you can take?
  - Why do you want to do that?
  - How confident are you that you can take that step?
- Highlight that 'small' and 'doable' mean realistic actions considering the context the client lives in. The action should be something the client is confident s/he can actually do, even if it's just a small step towards a bigger goal.

PRACTICE: Discuss, recommend, and verify understanding

- Ask participants to break into their existing trios. One of them will take the role of a client, another one will take the role of a provider, and the other one will take the role of an observer. As always, they will do three rounds so each participant can play each role.
- Explain that this exercise begins like the last round, with asking questions and listening actively to identify the priority to address. But this time the 'counsellor' might move a bit more quickly to identify the focus and will select the appropriate pages in the flipchart and move into the next phase of counselling.
- Highlight: The aim of this exercise is to practise presenting relevant educational information for the client and explaining the rationale for adopting practices that could help solve his/her problem. Never forget to take time to check to make sure the client understands what has been discussed.
- Ask participants to turn to **Exercise 3.3** of the **Participant Manual** (also provided below) for the scenarios and checklists.
- Show **Slide 3.38** and leave it up as reference during the role play.



- **Mini recap:** Ask: 'What sticks out for you from this session? What are your "take-aways"?'

Exercise 3.3: Role Play—Discuss, Recommend, and Verify Understanding

Case Scenarios 1–3

Festus, a shopkeeper who is 46 years of age, comes to the clinic because he feels weak. He has had watery diarrhoea on and off for the past 3 weeks and has lost 7 kg over the past 6 months. His mouth is painful, and he has difficulty swallowing. He is a skinny, depressed, and worried man who cannot stand without help.

Prudence, age 19, comes to the clinic complaining of severe pain when she swallows. She has also had diarrhoea, nausea, and vomiting in the past 2 weeks. Her BMI is 16.5. She is dehydrated.

Thabo started ART 3 weeks ago and sometimes has nausea and diarrhoea. He works full time and eats very little, if anything, for lunch. In the morning, he normally eats a small bowl of porridge, and his main meal is dinner. His BMI is 20.0.

Other possible scenarios would be:

- A new medication is causing side effects
- Patient isn't taking medications as prescribed
- Patient isn't showing up for appointments

Observer Checklist and Client Satisfaction Tool

For the observer: Role play on 'discuss and recommend' (with 'teach back')

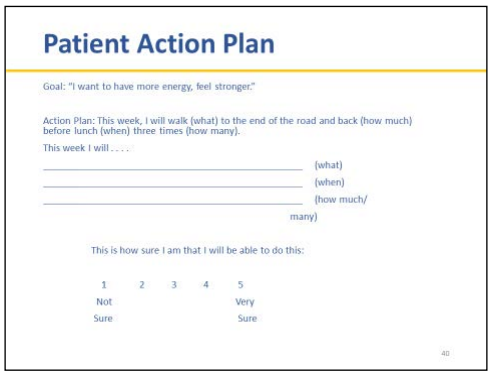
	During the counselling session:		
1	How many open-ended questions did the counsellor ask?		
	Did the counsellor:	**Y**	**N**
2	Ask about diet?		
3	Ask about medication?		
4	Ask about symptoms?		
5	Ask clarifying questions?		
6	Use reflective listening/reformulate what client said?		
7	Identify an appropriate flipchart page to begin discussing?		

For the client: 'Satisfaction' tool (overall)

	During this session, did the counsellor:	**Y**	**N**
1	Show respect and kindness?		
2	Ask questions about my situation?		
3	Listen to me?		
4	Address my main concerns?		
5	Give me information that I understand and can use?		
6	Discuss a plan for an action that I am confident I can do?		

PRESENTATION: Understanding ALIDRAA—Step 4. Agree and Action Plan

- Explain: This final stage of counselling is based on what you learned in the assessment stage by asking questions and listening carefully and on your discussion with the client about information you presented and options for adopting new practices.
- The 'AGREE' step is all about ACTION planning and 'negotiating' behaviour change. To agree on an action step, first it must be clear what the client's goal is. It won't work if it's our goal—it must be THEIR desired goal. During this step, counselling should:
  - Help the client identify a specific behaviour or action step that will help him/her progress and that is feasible to do in the short run.
  - Discuss the barriers and enablers (supportive factors) the client faces and what small steps can help overcome barriers and take advantage of enablers.
  - Identify a concrete measure of progress—how will you both know that the client has succeeded?
  - To ensure the plan is realistic, ask what the client's level of confidence is.
  - Schedule a follow-up visit to check on progress.
- Show **Slide 3.39**.



- Explain: This is an example of action plan. People are more likely to change their behaviour when their aims are specific, concrete, and realistic. This form can help the service provider and client agree on an explicit plan with doable actions to achieve the client's goal. The form can be attached to the client health passport to serve as a reminder and to check progress next time.

DISCUSSION: Action planning

- Using the example on **Slide 3.39**, discuss action planning for a client who identified this goal: to lose weight because of diabetes.
- Ask participants: 'What are the possible questions to ask a client to help them come up with small doable actions'? Possible questions will focus on getting patients talking about when it's hard, what are trigger points, and all the influential factors. For example:
  - What do you want to do?

- What would be hard about doing that?
- Who do you know that does that who you could ask about it or who could support you?

- Explain that after clients have identified a doable action, you need to take them through the following steps:
  - Have them rate their confidence to do it.
  - Ask them who could support them (someone at home, family or friend) and ask about any community resources that could support them.
- Point out that after talking more, clients will tell you how confidently they can rate their desire to change; if they are not ready, they may need to choose a different goal/action instead.
- Emphasize that these are good action plans for anyone, whether HIV-positive or not.
- **Note**: Explain that the action planning process may seem time consuming but that after integrating it into counselling every time, people find it can be done quickly, and it makes a big difference in client outcomes.

PRACTICE: Action planning

- Keep showing **Slide 3.39** on action planning for reference.
- Ask participants to remain seated and to form pairs to practise action planning; one will act as a service provider and the other as a client. The pairs should choose from the following scenarios:

Scenarios:

- Patient for whom a new medication is being prescribed
- Patient isn't taking medications as prescribed
- Patient is assessed and diagnosed as undernourished
- Patient gets nauseous after taking medications and is not eating
- Patient complains of lost appetite

Ask five pairs to share their experience to the group by responding to the following questions:

- What was the client's problem?
- What were the possible barriers and enablers?
- What action did the client suggest that he/she will do? This should include 'what', 'when', and 'how much/how many'.
- How did the client rate his/her level of confidence?
- Who did the client mention is available to support him/her?
- What possible outcome does the client expect?

- **Mini recap:** Ask: 'What sticks out for you from this session? What are your "take-aways"?'

3.11. Group Nutrition Education (1 Hour)

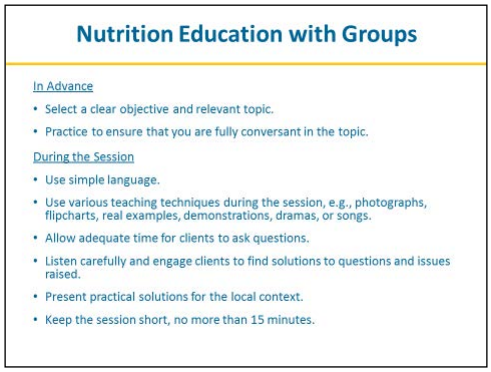
- Explain that before getting into the topic of nutrition education for groups, we want to reflect on the current practice within our districts and facilities.

DISCUSSION: What is currently happening in our facilities and how effective is it?

- Ask participants the following questions:
  - Where, when, how, and by whom are health talks delivered?
  - What visual aids are used?
  - How do you, or practitioners you support, prepare for health talks?
  - What would help you prepare to make talks more effective?
  - How do clients seem to respond to the talks?
  - What are your ideas for doing things differently/better?
- Brainstorm responses based on their experiences. Note main points on the flipchart.

PRESENTATION: Nutrition education

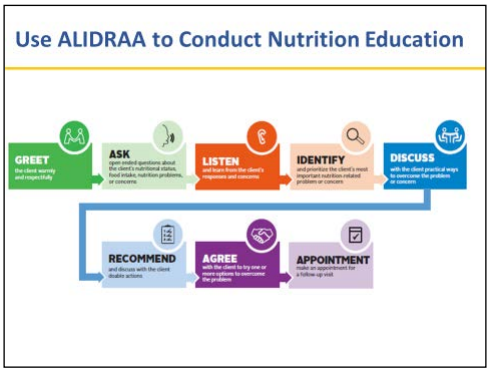
- Ask: 'What do you need to do in preparation for giving a group education session'? Take responses from participants, then show the first part of **Slide 3.40.**



- Ask: 'What are some tips you have found from your experience that make an effective group education session'? Let them discuss, and list points on the flipchart. Then, show the bullet points under 'During the Session' on the slide and highlight any gaps.
- Emphasize: It helps people to become engaged and learn if educators:
  - Choose topics that are timely and relevant given local events in the community.
  - Focus on one topic at a time.
  - Encourage questions and comments.

- Encourage people to learn from one another (For example: 'That's a good question, would someone here share their experience with that'?
- Have participants 'teach back' what they've learned.
- Use pictures and demonstrations (using 'think-feel-do')
- Refer to relevant support services in the community.

- Refer participants to **Reference 3.4: Principles of Nutrition Education** for further information.
- Refer the clients back to the ALIDRAA process by showing **Slide 3.41**.



BRAINSTORM: Delivering group nutrition education

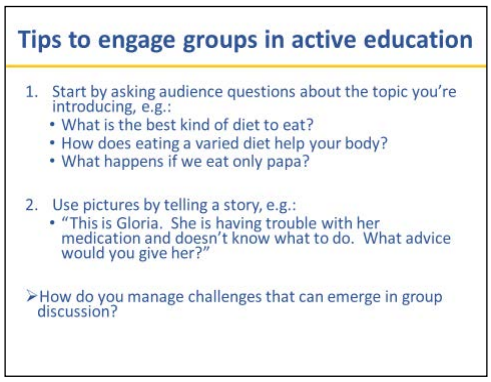
- Ask: 'Can we apply the same principles from individual counselling to communicate with groups in a nutrition education session'?
- Note the responses on the flipchart and summarise the discussion by highlighting the following points on how we can use ALIDRAA in group nutrition education:

1. **Greet and show respect**: Group leaders should always 'warm up' the audience to establish rapport with the group—share a joke or respond to some interaction happening.
2. Don't just present information. **Ask** questions about the topic—e.g., 'What do you do about X'?—and encourage a back-and-forth interaction. Show materials and ask questions about the pictures—e.g., 'What is happening here'? 'What do people in your community do'?
3. **LISTEN** to responses so you can tailor the session more to the audience. (You will already have picked a topic, but you still want to present in a way that picks up on any particular interests or worries you have **identified** in your group and their community.)
4. Focus and **prioritize.** The education topic for the session will have been selected first—it's one key change in the steps for groups compared to individuals, but you still can prioritize to meet the group's needs. And as always, **focus** is important—don't try to cover too much.
5. **Explain/educate** on the **recommended practices** using **'teach back'**: After each segment of information presented, ask a participant to summarise what they understood.

6. Make some **suggestions** for improved practices (again, using visual aids) and explore barriers. Ask them whether they can do it, why people in their community find it difficult, who's available to help, etc.
7. **Action planning:** Even though this is a very individualized thing, a group leader should provoke thinking—'What do you think you can do?'—and ask for volunteers to share their own thoughts about readiness to try some small new practice. Ask them for commitment to action and for some to share their intentions with the group. It can stimulate peer support and more discussion when this happens, e.g., 'Oh! I could never do that in my family!' 'Hey! I tried that once and this is what happened … .'

- Explain: 'It may be a challenge at first to overcome the tendency to lecture an audience, but it will be more fun for everyone and more effective for learning if the educators try to apply the ALIDRAA principles to make group eduaction more interactive'.

- Show **Slide 3.42** and review tips to make the health education sessions more effective.



- Discuss the following questions: 'What do you think of the idea of beginning each health talk by asking clients to share their knowledge and experience on a topic'? 'How can it benefit the service providers/health talk facilitators'? Get participants' responses and then highlight these key points:
  - You can gauge the audience's interest and discover what to focus on during the education session.
  - When audience members are talking right away, it stimulates their interest. They will be more likely to pay more attention when peers are talking and to engage in discussion.
  - You can identify misconceptions and offer correct information that responds directly to what is relevant for them.

- Ask what some challenges of having an active group discussion might be. Ask participants: How would you manage if:
  - The discussion becomes heated or contentious? (Gently stop and redirect the conversation: *We want to focus on how we can all improve health for our families, so let's shift our discussion back to the issue of ____)*
  - People get too far off topic? (Gently interrupt, saying something like: *You are raising interesting issues, but we have limited time so I'd like us to stay on __ topic. Perhaps you can discuss that with friends afterwards).*

- One person dominates? (Gently interrupt, saying something like: *I'm sorry to stop you, but I know other people also have things to say about this topic, so I want to give them a chance to speak, too).*
- Someone pushes incorrect information? (Gently correct with: '*Thank you for sharing your understanding. It can be difficult to grasp this issue, and I want to make sure everyone has the correct information'*. If there are printed materials or visual aids to show for authoritative instruction, refer to them.)

PRACTICE: Conducting group nutrition education

- Ask participants to break into groups of six to seven, where:
  - Two people will serve as co-leaders to choose and present a session on one topic, using the counselling flipchart.
  - Two people will serve as observers and complete Reference 3.5: Checklist for Recommended Group Education Techniques in the Participant Manual
  - Everyone else will serve as 'patients' in the audience.
- Encourage participants to think of a role to play based on the topic chosen by the co-leaders.
- Each education session should take 10–15 minutes.
- Participants should use Reference 3.5: Checklist for Recommended Group Education Techniques in the Participant Manual (also provided below).
- Allow 15 minutes for feedback (with observers reporting first, then the audience, then group leaders).
- Ask each group to choose a representative to share their experience in plenary and then return to the class.

Reference 3.4: Checklist for Recommended Group Education Techniques

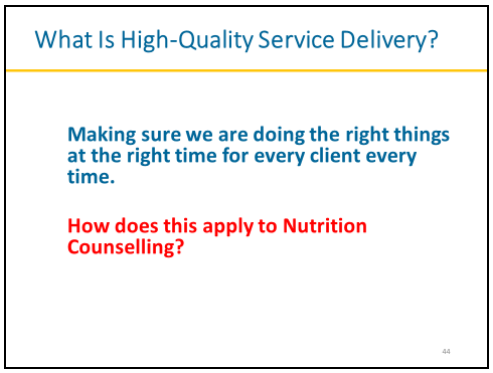
Standard	Verification Criteria	Y/N	Poor	Average	Good	Comment
Service provider demonstrates skills for an effective health education session	Welcomes people warmly and introduce themselves?					
	Asks open-ended questions about audience members' experiences?					
	Demonstrates active listening by reflecting *(paraphrasing)* what was said?					
	Praises clients for positive efforts?					
	Allows adequate time for clients to ask questions					
	Encourages participants to offer one another suggestions to address problems?					
	Uses printed materials effectively *(asks people to observe and reflect on what is happening in the picture, personalize how it applies in their lives, and explain how they could take that action at home)*?					
	Communicates technically correct information?					
	Checks people's understanding using 'teach back' *(asking them to explain what they understood)?*					
	Ends by emphasizing a key benefit of the recommended practice and offering encouragement?					

- **Mini recap:** Ask: 'What sticks out for you from this session? What are your "take-aways"?'

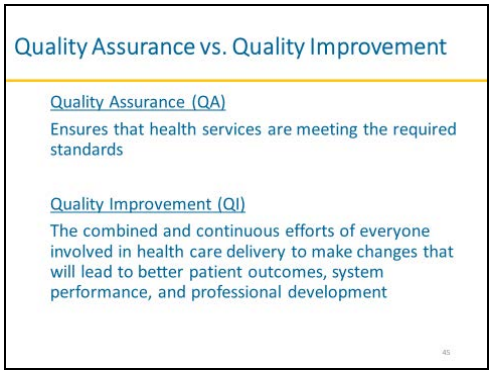
3.13 Applying Quality Improvement in Nutrition Counselling
(4 hours)

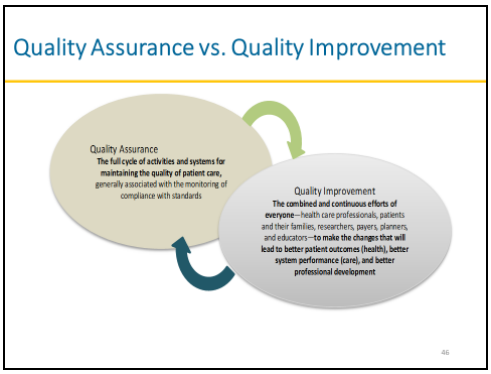
BRAINSTORM: What does it mean to provide 'high-quality nutrition counselling and education services'?

- Ask participants how they can tell if nutrition counselling and education services provided at a facility are of good quality. Write their answers on a flipchart and complete their responses with the following criteria:
  - Services are provided in accordance with established standards and policies.
  - Data show that patients' clinical outcomes meet expectations/standards.
  - Services are patient-centred.
  - Patients express satisfaction with services.
  - Patients have good access to care.
  - Services are provided efficiently.
  - Services are provided cost-effectively.
  - Services are provided equitably to all populations.
  - Services are provided safely, in a way that minimizes harm to the patient.
- Summarise by showing **Slide 3.43**.



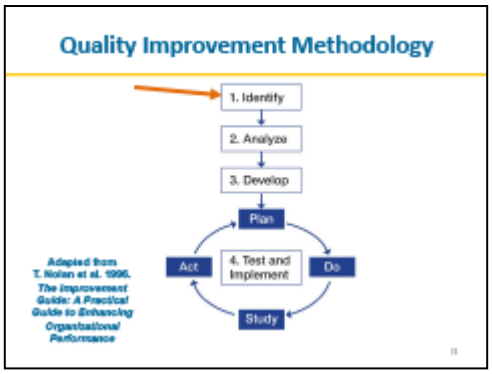
- Explain that the health care system and its actors should constantly strive to maintain and improve the quality of the nutrition counselling and education they provide by using both 'quality assurance' and 'quality improvement' methods.
- Quality assurance (QA) activities ensure that services meet the required standards, whereas quality improvement (QI) activities work to make services better by continually trying new ways to deliver nutrition counselling and education to patients.
- Show **Slides 3.44** and **3.45** to review the differences.

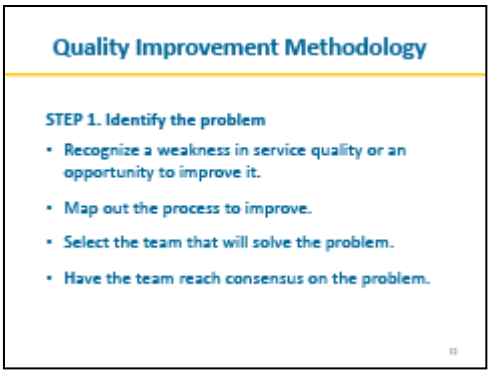




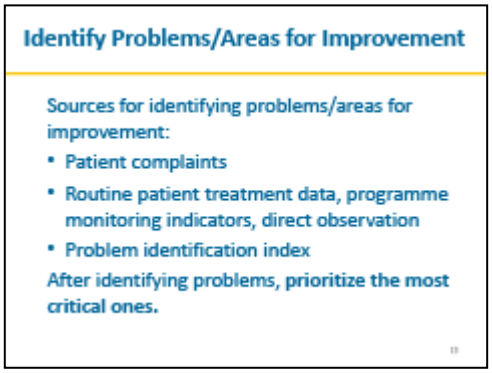
PRESENTATION: 3.13.1 Identify the problem

- Show **Slide 3.46** and explain to participants on the four steps in applying QI. Explain that these same steps will now be applied in nutrition counselling and education.





- Show **Slide 3.47** and explain that the first step of quality improvement is recognizing that there is a weakness in nutrition counselling service quality or that an opportunity for improvement exists.
- Explain that identifying a problem also involves mapping out the existing process to improve, deciding who should be on the team that will solve the problem, and agreeing on the problem as a team.
- Show **Slide 3.48**.



- Tell participants that problems can be identified in a number of ways. A patient might express dissatisfaction with the quality of care provided, or routinely collected

nutrition data might reveal needs for improvement. Other useful data sources include health records, management records, direct observation, and interviews.

- Explain that service providers need to know and understand standard NCST counselling and education activities and performance criteria that need to be demonstrated when providing care to patients at their facility, as well as where, when, and who does each activity. This will enable service providers to identify problems or barriers to providing effective counselling and education within NCST service delivery.
- Review with the participants **Reference 3.6: Problem Identification Checklist for Nutrition Counselling and Education in the Participant Manual** (see below).

Reference 3.6: Problem Identification Checklist for Nutrition Counselling and Education

NCST Activity	Quality Improvement Principle	Principle Met? (Yes/No)
1. Counselling	Do all eligible patients receive nutrition counselling?	
	Is there a clearly documented flow chart of work that indicates who does nutrition counselling and when?	
	Is nutrition counselling implemented as part of routine HIV and TB care for every client?	
	Is there a team to oversee implementation of nutrition counselling?	
	Are nutrition counselling data routinely recorded according to the national guidelines?	
	Is the client information from the nutrition counselling session used for decision-making at the facility level?	
2. Education	Do all eligible patients receive nutrition education?	
	Is there a clearly documented flow chart of work that indicates who does what during nutrition education and when?	
	Is nutrition education implemented as part of routine HIV and TB care for every client?	
	Is there a team to oversee implementation of nutrition education?	
	Are nutrition education data routinely recorded according to the national guidelines?	
	Are results on nutrition education used for decision-making at the facility level?	

Problem Prioritization

After reviewing the items receiving 'no', determine which problem needs the most immediate attention. Prioritization should be based on the following:

- **High risk**: Could have the most negative effect if the quality is poor
- **High volume**: Occurs often and affects a large number of people
- **Problem-prone:** An activity susceptible to errors
- **Early step in care process**: Problem occurs during the first steps in providing care

PRACTICE: Identify problem areas in nutrition counselling and education

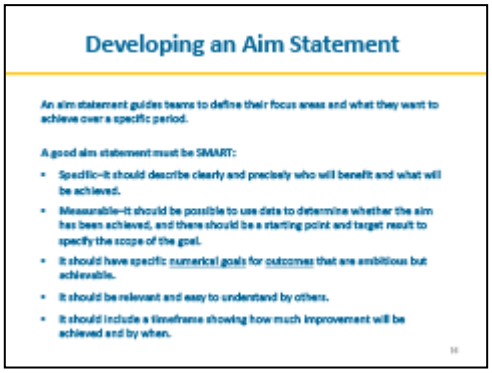
- Group the participants according to their health facilities. Ask them to use **Reference 3.6: Problem Identification Checklist for Nutrition Counselling and Education** to identify opportunities for improvement in their facilities.
- Have the teams prioritize the problem that needs the most immediate attention. Prioritization should be based on the following:
  - **High risk**: Could have the most negative effect if the quality is poor
  - **High volume**: Occurs often and affects a large number of people
  - **Problem-prone:** An activity susceptible to errors
  - **Early step in care process**: Problem occurs during the first steps in providing care
- Ask the teams to write the problem in the spaces in **Reference 3.6** and note how the current situation diverges from practices outlined in the national NCST guidelines or fails to meet client expectations and needs.

Example: ***Records show that patients wait up to 3 hours for service. Many patients say the long wait time is why they don't return to the hospital for follow-up nutrition assessments.***

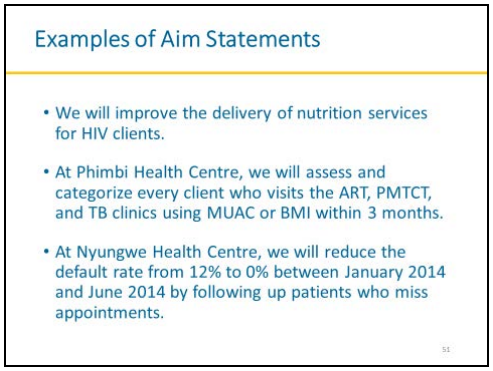
- When the groups are finished, ask each group to present their priority problem area.

PRESENTATION: Develop an aim statement

- Explain that the last part of the 'identify' step is to develop an aim statement. The aim should clearly communicate what the team is trying to accomplish in improving nutrition counselling and education services.
- Show **Slide 3.49,** which explains what must be included in an aim statement.



- Show **Slide 3.50.** Review each aim statement and ask participants whether the statement is good and, if not, what should be improved.



PRACTICE: Developing an aim statement for counselling

- With the participants again divided by health facility, refer them to **Exercise 3.5: Developing an Aim Statement for Counselling** in the **Participant Manual** (see below). Ask them to develop an aim statement for the problem they identified earlier.

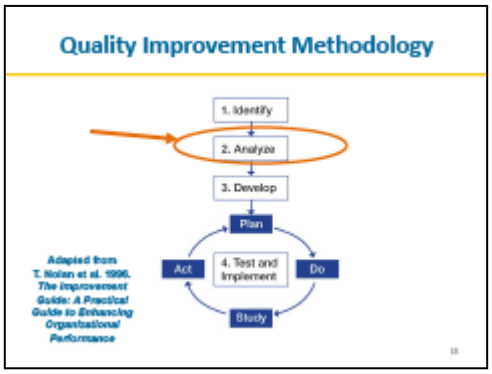
Exercise 3.5 Developing an Aim Statement for Nutrition Counselling

Specific scope of goal (e.g., increasing percentage of clients who receive nutrition counselling from 25% to 90%)	
Numerical goal for outcome	
Timeframe	
How aim will be achieved	
Aim statement	

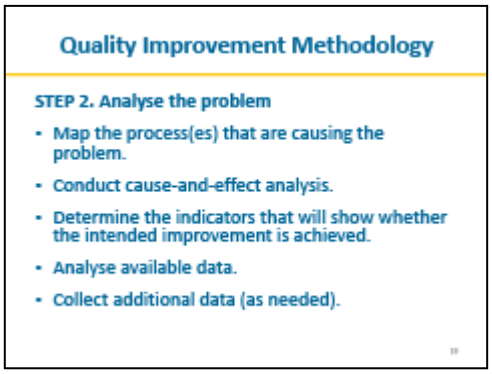
- When the groups have finished, ask a representative from each group to read their aim statement aloud. Ask the other participants to provide feedback on each group's aim statement.
- Allow the groups 5–10 minutes to refine their aim statement based on feedback and write it down on a flipchart.

DISCUSSION: 3.13.2. Analyse the problem

- Show **Slide 3.51**.



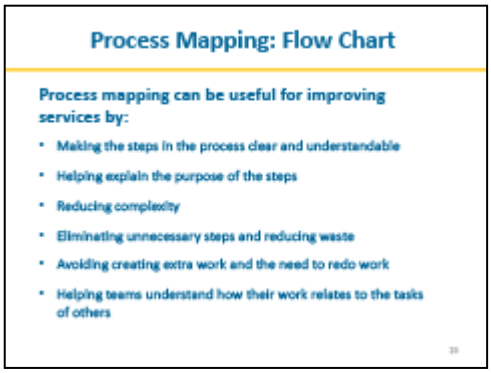
- Explain that once a problem or opportunity for improvement has been identified, the second step is to analyse the problem to find the root cause.
- Mention that problem analysis can be like peeling an onion: Many layers may have to be removed before reaching the core, i.e., the main cause of the problem.
- Show **Slide 3.52** and explain the steps necessary to get to the root of the problem. Remind participants that there are several tools and resources that can help with problem analyses, such as a flow diagram, a cause-and-effect (fishbone) analysis, and existing service delivery data.



PRESENTATION: Describe and understand the process that is causing the problem

- Remind participants that most problems or quality deficiencies relate to *how* work is conducted (the process), including how tasks done by one staff member affects work done by another.
- Explain that the first step is to map out the various processes involved with providing the problematic service. One tool for mapping the processes is a flow chart, which shows the whole process that leads to the output or outcome targeted for improvement.

- Show **Slide 3.53** and facilitate a discussion on process mapping.



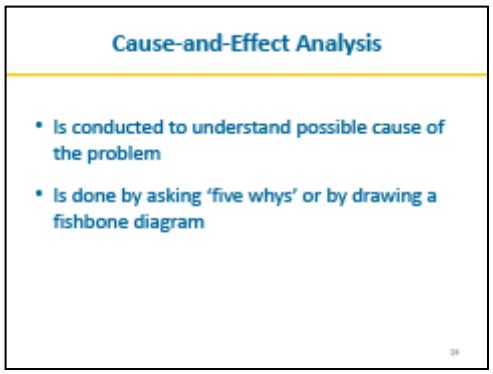
PRACTICE: Reviewing the health facility flow chart

- Divide participants into groups according to their health facilities and have them draw a flow chart for current HIV/TB/ANC/PMTCT patients who should receive NCST services at their facilities. The flow chart should show all the steps health workers and patients take during a visit to the health facility. Explain that problems/bottlenecks should be indicated with the cloud sign, which indicates that step of the process is not clear.
- Tell participants that they can use Reference 3.7: Creating a Flow Chart to Understand a System/Process in the Participant Manual
- With your co-facilitator(s), observe the groups and assist as they develop the flow charts.
- Ask the groups to review their charts and answer the following questions:
  - 'Have you identified bottlenecks or additional problems in delivering nutrition counselling and education services?'
  - 'Does the flow chart make you think of anyone who should be added to your QI team to strengthen nutrition counselling and education?'
- When the groups are finished, ask them to present their revised health facility flow chart showing where and how nutrition counselling will be integrated within the various steps in the process. The groups should also indicate any new QI team members who should be added to their existing QI teams to strengthen nutrition counselling.

PRESENTATION: Conducting a cause-and-effect analysis of nutrition counselling

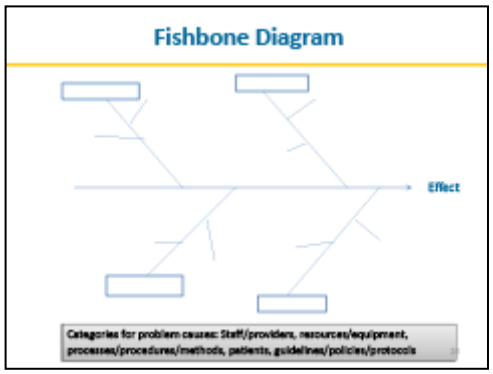
- Explain that once the problem has been identified more specifically using the flow chart, teams need to identify the root cause of the problem. This is done by conducting a cause-and-effect analysis.

- Show **Slide 3.54** and explain that a cause-and-effect analysis can help identify and document all the potential causes of the problem. Explain that this analysis is done by asking the **'5 Whys'**, a technique for determining the root cause of a problem by repeating the question "why?" five times, with each question forming the basis for the next question.



PRACTICE: Cause-and-effect (fishbone) analysis

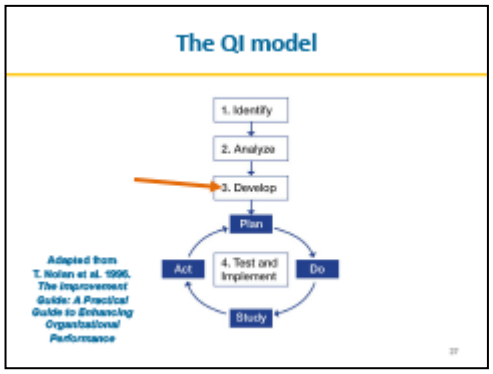
- With participants divided into their health facility groups, ask them to brainstorm and list all the possible causes of the problem they identified relating to nutrition counselling. When they have finished brainstorming, ask them to categorize the possible causes by source, such as staff/providers, resources/equipment, processes/procedures/methods, patients, and guidelines/policies/protocols.
- Show and explain **Slide 3.55** and refer the groups to **Reference 3.8: Fishbone Diagram** in the **Participant Manual.** Ask a volunteer to read the instructions in the reference.



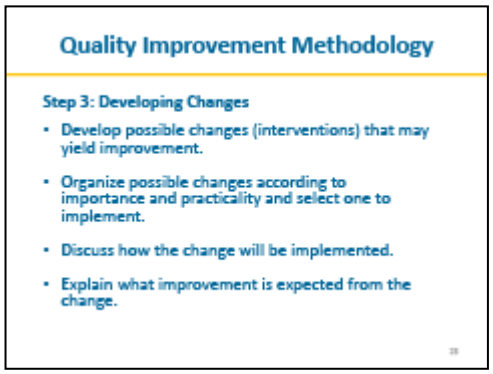
- Ask the groups to create a fishbone diagram on a flipchart. Show the example of a fishbone diagram on **Slide 3.55,** and tell the groups to refer to **Reference 3.8** in the **Participant Manual** if necessary.
- With your co-facilitator, observe each group to review and assist with the exercise.
- When the groups finish, ask each group to paste its fishbone diagram on the wall. Explain that they will use their possible causes of the problem to come up with ideas for making an improvement.

PRESENTATION: 3.13.3. Developing changes

- Show **Slide 3.56**.



- Explain that the first two steps helped to: (a) identify what to improve and (b) analyse the information needed to make the improvement in nutrition counselling.
- Explain that the third step, 'develop', uses the information from the previous steps to learn what changes will lead to improvement of nutrition counselling and education services.
- Show **Slide 3.57** and explain the steps for developing changes.



PRACTICE: Developing changes

- With participants divided into their health facility groups, ask the groups to brainstorm on possible solutions to their problem. Have them list all changes they would want to try in **Exercise 3.6: Developing Changes for Nutrition Counselling** in the **Participant Manual** (see below).
- If possible, share changes that you know have been tested in facilities and proved to be effective.
- Ask participants to prioritize their changes according to importance and practicality and write the changes on a flipchart.

  Ask participants to create timelines for testing the changes and add the timelines to the flipchart. Have them paste their flipcharts on the wall.

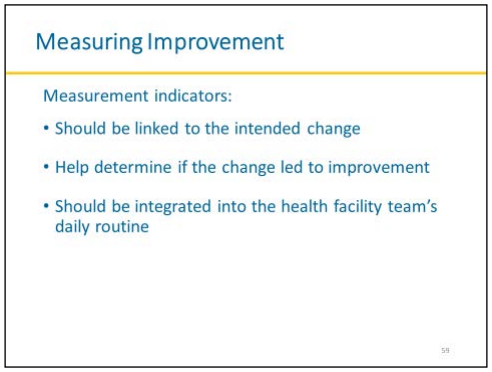
Exercise 3.6 Developing Changes for Nutrition Counselling

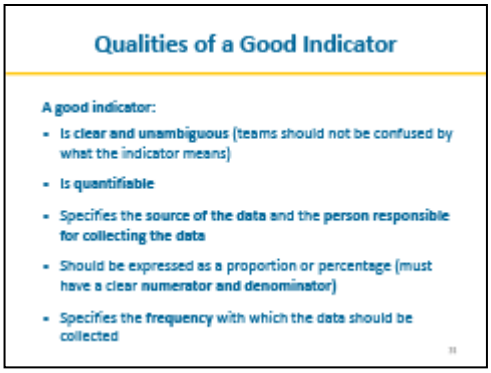
With your health facility group, brainstorm on possible solutions to the problem of nutrition counselling. In the space below, list all the changes your group wants to try to solve the problem.

Change ideas (possible solutions)	**How the change idea would be implemented**

PRESENTATION: Measuring the impact of the implemented changes

- Explain that measuring the quality improvement change's effect on the problem shows whether the change is working.
- Explain that teams need to develop a measure or indicator that reflects their improvement aim and shows whether their efforts are solving the problem.
- Show **Slides 3.58 and 3.59** and explain the qualities of a good indicator.





- Explain that, to be useful at the facility level, indicator data must be tracked and analysed at intervals that make sense for the indicator. Indicators can be tracked daily, weekly, fortnightly monthly, and monthly.
- Point out that before changes are tested, teams must collect baseline data on their indicator to compare and measure their results. Explain that nutrition counselling and education has at least one indicator that will require baseline data.

PRACTICE: Developing nutrition counselling indicators

- With participants divided into their health facility groups, ask the groups to develop indicators to track to measure their change.
- Have the groups fill out the table in **Exercise 3.7: Developing Nutrition Counselling Indicators** (see below) to guide them in developing the indicators. Point out the example nutrition counselling and education indicators.
- When the groups are finished, ask each group to present its indicators. The rest of the participants should provide feedback.
- When all the groups have presented, give them 5–10 minutes to revise their indicators based on feedback.

Exercise 3.7: Developing Nutrition Counselling Indicators

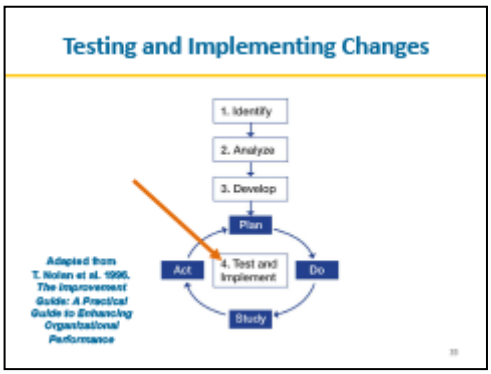
Indicator	
Numerator	
Denominator	
Source of information	
Person responsible	
Frequency	

Examples of NCST Counselling and Education Indicators

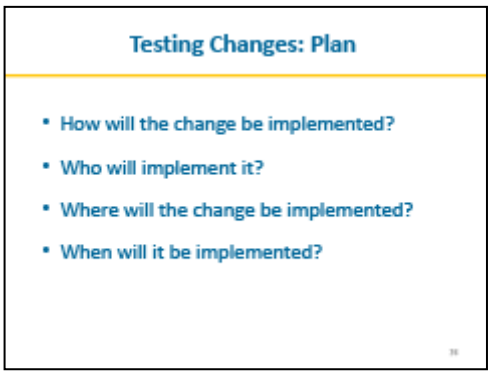
	Counselling	**Nutrition Education**
Aim	All clients whose nutritional status is assessed and classified receive nutrition counselling	All clients attending HIV, TB, and ANC/PMTCT clinics receive nutrition education
Indicators	% who received nutrition counselling	% of clients who attended HIV, TB, ANC/PMTCT clinics and received nutrition education
Numerator	# who received nutrition counselling	# who attended HIV, TB, and ANC/PMTCT clinics and received nutrition education
Denominator	# whose nutritional status was assessed and classified	# who attended HIV, TB, ANC/PMTCT clinics

PRESENTATION: 3.13.4. Testing and implementing change ideas

- Show **Slide 3.60**.



- Tell the participants that this step builds on the previous three steps and involves a process that tests whether the proposed solutions yield the expected improvement.
- Explain that the process has four steps, the plan-do-study-act (PDSA) steps discussed in QI training.
- Show **Slide 3.61** and explain the 'plan' step.



PRACTICE: Developing health facility QI implementation plans

- With participants divided into their health facility groups, ask the groups to make a plan for testing the prioritized changes to improve nutrition counselling on their lists, using **Reference 3.9: Health Facility QI Planning Guide** (see below) in the **Participant Manual** as a guide.
- Tell participants to use information from previous exercises to complete the implementation plan for nutrition counselling and write the plan of a flipchart.
- When the groups have finished developing their plans, ask them to paste them on the wall. With your co-facilitator, review each group's plan and provide feedback.

Reference 3.9 Health Facility QI Planning Guide

Health Facility Name: _____ Date: _____

Improvement aim	Change ideas (solutions)	How the change idea will be implemented	Who will be responsible for implementing the change idea	Where the change idea will be implemented	When the change idea will be implemented
Indicator: **Numerator**: **Denominator**:	1.				
	2.				
	3.				
	4.				
	5.				

3.14. Discussion and Module Evaluation (10 minutes)

- Allow time for questions and discuss any issues that need clarification.
- Refer participants to **Reference 3.0: NCST Competencies and Standards for Nutrition Counselling and Education**. Emphasize the required competencies for nutrition counselling and education.
- Distribute copies of the **Module 3 Evaluation Form**.
- Explain to the participants the following:
  - Participants should rate whether the training achieved the module's objectives.
  - The evaluation form has five scoring criteria: 1= strongly disagree, 2=disagree, 3=neither agree nor disagree, 4 = agree, and 5=strongly agree.
  - Tick on the appropriate box of the scoring criteria (1–5).

MODULE 3 EVALUATION FORM

Date: _____ Place of work: _____

Please rate each training objective in the table using the scoring system; tick where appropriate.

	1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree
The training achieved its objective of explain the meaning of 'counselling' and what makes it effective.					
The training achieved its objective of describing the multiple influences on nutrition related behaviours					
The training achieved its objective of demonstrating how to build a heartfelt commitment to adopt a client-centred approach to counselling that helps clients to take action with available resources to overcome barriers and manage their own health					
The training achieved its objective of explaining how.					
The training achieved its objective in building **skills** on how to use communication techniques needed for effective counseling					
The training achieved its objective in building **skills** on using the NCST counselling flipchart to engage clients in learning and changing behaviours to achieve nutrition goals					
The training achieved its objective in building **skills** on helping clients to overcome nutrition-related challenges, maintain a healthy weight, and manage symptoms through diet					
The training achieved its objective in building **skills** on preparing, delivering and engaging nutrition education session					

General comments:

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

What was good about this module?

What was not good about this module?

What information would you like added to this module to assist you in your work?

MODULE 4

Nutrition Care Plans and Support

12 hours

#	Description	Duration
4.0	**Module Introduction** Module Objectives Review of Module 2	**1¼ hours**
4.1	**Nutrition Care Plans and Support for Adolescent and Adult Clients**	**8 hours**
4.2	**Summary of Therapeutic and Supplementary Food Products Available for Adolescents and Adults in Malawi**	**1½ hours**
4.3	**Referral from the Facility to Community Economic Strengthening, Livelihoods, and Food Security Support**	**1 hour**
4.4	**Discussion and Module Evaluation**	**15 minutes**

Learning objectives

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

1. Understand how to choose an appropriate nutrition care plan and support for a client based on his/her nutritional status
2. Describe therapeutic and supplementary food products available for adolescents and adults in Malawi and how to manage the supplies
3. Understand the process of referring clients from the facility to community ES/L/FS services

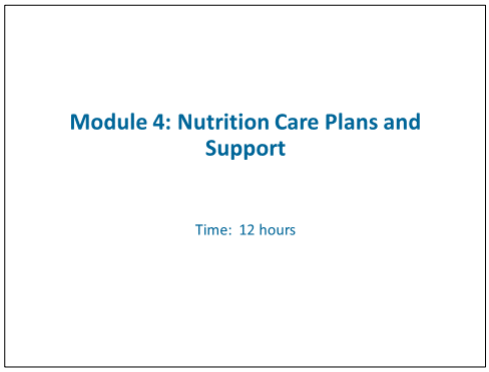
Materials needed

- Flipchart and stand
- Markers and tape
- LCD projector
- Module 4 PowerPoint
- **Participant Manual—Modules 2 and 4**
- One copy of the **Module 4 Evaluation Form** for each participant
- Sachets of ready-to-use therapeutic food (RUTF)
- Fortified corn soya blend (CSB+)
- Vegetable oil
- Water
- Cooking pot
- Wooden spoon
- Cups for tasting

Advance preparation	• Review PowerPoint slides for Module 4. • Review **Module 4** of the **Participant Manual.** • Review the module's **exercises** and **case study.** • Review **Module 2** in the **Participant Manual**.

4.0 Module Introduction (1¼ hours)

- Show the Module 4 heading on **Slide 4.1.**



- Explain the following:
  - Trained service providers should identify and negotiate appropriate nutrition care plans and support with clients based on the results of nutrition assessment.
  - A nutrition care plan should specify nutrition goals and the actions or treatment to meet those goals.
  - **Module 4—Nutrition Care Plans and Support** provides guidance on selecting an appropriate nutrition care plan for clients with normal nutritional status, moderate undernutrition, severe undernutrition with or without medical complications, and overweight/obesity.
  - The module will also describe how we can link clients to economic strengthening/ livelihood/food security (ES/L/FS) support and manage referrals between communities and health care facilities.

BRAINSTORM: Important steps to guide nutrition care plans

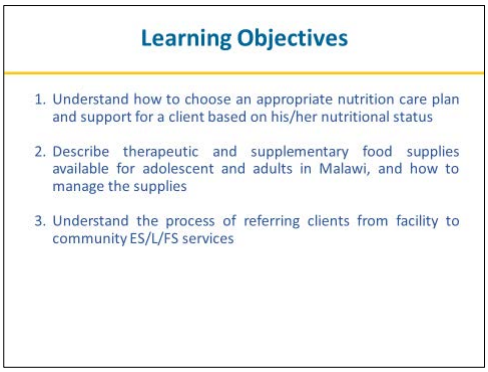
- Ask participants: 'What are the important steps to take before deciding a client's nutrition care plan?' Write their responses on a flipchart and share the answers in the box below.

- Understand the client's medical history
- Understand the client's dietary pattern
- Determine the client's nutritional status

- Summarise by explaining to participants that as already covered in Module 2 (on nutrition assessment and classification) and Module 3 (on counselling and education), it is important to do a comprehensive assessment of the client's condition, understand his/her medical and nutrition needs, and provide appropriate care and treatment that would help the client attain a normal nutritional status.

Module objectives

- Show the module learning objectives on **Slide 4.2.**



- Refer participants to **Reference 4.0: NCST Competencies and Standards for Nutrition Care Plans and Support in the Participant Manual** (see below). Explain that the participants will get a chance to learn and practice these skills during the classroom sessions and the site visit.

Reference 4.0: NCST Competencies and Standards for Nutrition Care Plans and Support

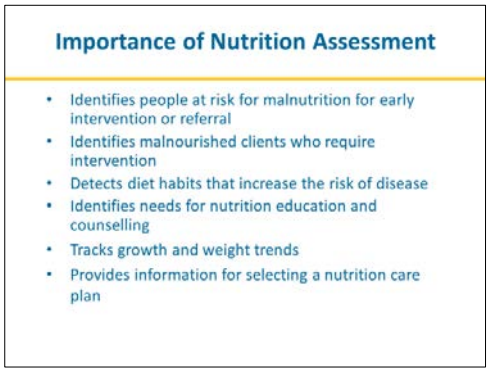
Competency	Minimum Standards
1. Provide nutrition support to an adolescent or adult with normal nutritional status	Identify normal nutritional status in adolescents, adults, and pregnant and lactating women (up to 6 months post-partum)
	Provide medical care and support to a client
	Provide nutrition care and support to a client
	Refer client to economic strengthening, livelihoods, and food security (ES/L/FS) support and follow up the client
2. Provide nutrition support to an adolescent or adult with moderate undernutrition	Identify moderate undernutrition in adolescents, adults, and pregnant and lactating women (up to 6 months post-partum)
	Provide medical care and support to a client
	Provide nutrition care and support to a client
	Refer client to ES/L/FS support and follow up the client
	Transition a client from the care plan for moderate undernutrition to a care plan for normal nutritional status
3. Provide nutrition support to an adolescent or adult	Identify severe undernutrition without medical complications in adolescents, adults, and pregnant and lactating women (up to 6 months post-partum)

Competency	Minimum Standards
with severe undernutrition without medical complications	Provide medical care and support to a client
	Provide nutrition care and support to a client
	Refer client to ES/L/FS support and follow up the client
	Transition a client from the care plan for severe undernutrition without medical complications to a care plan for moderate undernutrition
4. Provide nutrition care and support to an adolescent or adult with severe undernutrition with medical complications	Identify severe undernutrition with medical complications in adolescents, adults, and pregnant and lactating women (up to 6 months post-partum)
	Provide medical care and support to a client
	Provide nutrition care during the initial phase of inpatient care
	Transition a client from the initial phase to rehabilitation phase
	Refer and follow up a client from inpatient to outpatient care
5. Provide nutrition support to an adolescent or adult who is overweight or obese	Identify overweight and obesity in adolescents, adults, and pregnant and lactating women (up to 6 months post-partum)
	Provide medical care and support to a client
	Provide nutrition care and support to a client
	Refer client to ES/L/FS support and follow up the client

Review of Module 3

BRAINSTORM: Importance of nutrition assessment

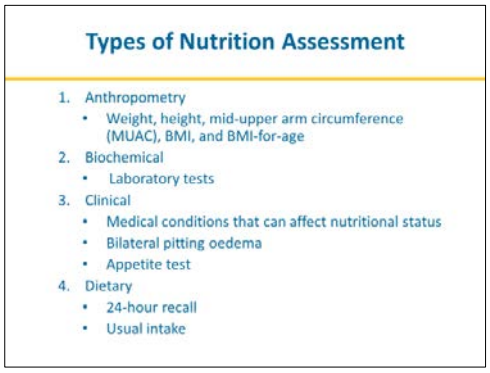
- Ask participants: 'Why should health care workers routinely assess the nutritional status of their clients?' Compare the responses with the information on **Slide 4.3.**



- Explain that knowing a client's nutritional and health status, dietary patterns, current treatment, and food security situation allows the service provider to choose a nutrition care plan and advise clients how to maintain normal nutritional status and avoid malnutrition.
- Explain that malnourished clients who are not identified and treated early have longer hospital stays, slower recovery from infection and complications, and higher morbidity and mortality.

BRAINSTORM: What are the different types of nutrition assessment?

- Ask participants: 'What kinds of nutrition assessment can service providers use to tell whether someone is malnourished?' List responses on a flipchart.
- Show **Slide 4.4** and compare the participants' responses to the information on the slide.



- Explain that nutrition assessment includes **anthropometric** measurements, which involve measurement of human body parts; **biochemical** laboratory tests; **clinical** evaluation of signs and symptoms of malnutrition; and **dietary** assessment to assess food intake.
  - Anthropometric, clinical, and biochemical assessments are most commonly used together to classify a person's nutritional status.
  - Dietary assessments can be used to help determine why a patient might be malnourished and how he/she could improve nutritional status through dietary changes.
  - It may help to remember the different types of assessment by remembering ABCD (anthropometric, biochemical, clinical, dietary).
  - Remind participants that details of these types of assessment were covered in **Module 2: Nutrition Assessment and Classification**.

BRAINSTORM: How can we classify the nutritional status of adolescents and adults?

- Refer participants to **Reference 4.1: Classifying Nutritional Status for Adolescents 15–18 Years and Adults ≥ 19 Years in the Participant Manual** (see below).
- Explain that, to always correctly classify clients, participants should always have the reference available to use at their facilities.

Reference 4.1: Classifying Nutritional Status for Adolescents 15–18 Years and Adults ≥ 19 Years

Normal nutritional status

Adolescents 15–18 years (non-pregnant and non-post-partum)

BMI-for-age z-score: ≥ −2 to +1
Or MUAC: ≥ 220 mm (22.0 cm)

Adults ≥ 19 years (non-pregnant and non-post-partum)

BMI: 18.5 to 24.9
Or MUAC: ≥ 220 mm (22.0 cm)

Pregnant women and lactating women up to 6 months post-partum

MUAC: 220 to 299 mm

→ Follow care plan for maintaining **normal nutritional status**.

Moderate undernutrition

Adolescents 15–18 years (non-pregnant and non-post-partum)

BMI-for-age z-score: ≥ −3 to < −2
Or MUAC: 185 to 219 mm (18.5 to 21.9 cm)
Or unintentional weight loss of 5%–10%

Adults ≥19 years (non-pregnant and non-post-partum)

BMI: 16.0 to 18.4
Or MUAC: 190 to 219 mm (19.0 to 21.9 cm)
Or unintentional weight loss of 5%–10%

Pregnant women and lactating women up to 6 months post-partum

MUAC: 190 to 219 mm (19.0 to 21.9 cm)
Or weight gain: Less than 1 kg per month since the last visit

→ Follow care plan for managing **moderate undernutrition**.

Severe undernutrition

Adolescents 15–18 years (non-pregnant and non-post-partum)

BMI-for-age z-score: < −3
Or MUAC: < 185 mm (18.5 cm)
Or unintentional weight loss of more than 10%
Or presence of bilateral pitting oedema

Adults ≥ 19 years (non-pregnant and non-post-partum)

BMI: < 16.0
Or MUAC: < 190 mm (19.0 cm)
Or unintentional weight loss of more than 10%
Or presence of bilateral pitting oedema without other medical cause

Pregnant women and lactating women up to 6 months post-partum

MUAC: < 190 mm (19.0 cm)
Or any weight loss

→ If **NO** severe complications or no oedema or has oedema + or ++, and passed appetite test, follow care plan for managing severe undernutrition without medical complications in outpatient care. **Conduct thorough examination to rule out other causes of oedema.**

→ If severe complications or oedema +++ or failed appetite test, follow care plan for managing severe undernutrition with complications in inpatient care**. Conduct thorough examination to rule out other causes of oedema.**

Overweight and obese

Adolescents 15–18 years (non-pregnant and non-post-partum)

BMI for-age z-score Overweight: ≥ +1 to < +2
Obese: ≥ +2

Adults ≥ 19 years (non-pregnant and non-post-partum)

BMI: Overweight: 25.0 to 29.9
Obese: ≥ 30.0

Pregnant and lactating women up to 6 months post-partum
MUAC: ≥ 300 mm (30.0 cm)

→ Follow care plan for managing **overweight and obesity**.

- Give participants 5 minutes to review the different classifications of nutritional status presented in Reference 4.1. Randomly select four participants to read out the nutrition classifications (normal, moderate, severe, overweight and obese).
- When the participants are finished, ask the participants to form pairs and take 10 minutes to complete **Exercise 4.1: Mpasa Clinic Register in the Participant Manual** (shown below with the answers).
- When they have completed the exercise, review the answers as a group.

Exercise 4.1: Mpasa Clinic Register

- The table below shows the Mpasa Clinic Register. The register contains information about eight adolescents and adults who were seen on a clinic day.
- Classify the nutritional status of each client and write it in the 'Nutritional status' column.

ID	Sex	Age (years)	HIV status	Complications?	Bilateral pitting oedema	MUAC (cm or colour)	Height (cm)	Weight (kg)	Nutritional status
17	M	20	–	No	No	21.5	Too ill to stand	62	**Moderate undernutrition**
18	M	14	+	No	No	15	Too ill to stand	54	**Severe undernutrition**
19	F	27	+	Yes	No	—	166	72	**Overweight**
20	M	46	+	No	No	—	160	80	**Obese**
21	F	19	+	Yes	No	—	164	48	**Moderate undernutrition**
22	F	31	+	No	No	—	162	49	**Normal**
23	F	37	+	No	No	—	156	42	**Moderate undernutrition**
24	M	26	+	Yes	No	—	178	84	**Overweight**

PRACTICE: Classifying nutritional status and identifying the client's nutrition problem

- Refer participants to **Exercise 4.2** in the **Participant Manual** (see below).
- Ask one volunteer to read part 1 of the case study aloud.
- After the volunteer finishes reading, ask participants to classify Mr. Sambo's nutritional status and describe other problems he has. Write the responses on the flipchart, and complete their responses with the answers listed below under each part of the case study.
- Divide participants into six groups of four to five people, and assign each group one of the remaining parts of the case study (parts 2–7).
- Ask the groups to use BMI, BMI-for-age, and MUAC to classify the nutritional status of the client in their assigned part of the case study. Ask the groups to also list any other problems the client has.
- When the groups are finished, ask a representative from each group to share their answers during plenary (refer to the answers below).

Exercise 4.2: Case Study—Mr. Sambo, Chisomo, and Mrs. Sambo

Part 1

Mr. Sambo is 42 years of age and is HIV-positive. He looks thin because he has been losing weight for the past 3 months. Mr. Sambo is coughing a lot and has oral thrush, diarrhoea, and skin problems. He looks pale. He decides to go to a health facility for care and treatment. At the facility, he has several tests done and gets his diarrhoea and skin problems treated. He weighs 49 kg and is 168 cm tall. He is referred to a nearby ART clinic.

> ***Answer**: Mr. Sambo is classified as having moderate undernutrition, but he has some complications that must be addressed or he may be at risk of severe undernutrition. He has other conditions including:*
>
> - *Persistent cough*
> - *Anaemia*
> - *Oral thrush*
> - *Diarrhoea*
> - *Skin problems*
>
> *Mr. Sambo will need nutrition counselling on how to manage anaemia, oral thrush, and diarrhoea. He will need supplementary food support, as well as nutrition counselling on increasing the consumption of adequate (in quality and quantity) nutritious locally available foods. Mr. Sambo should also be referred to the clinician to review and manage his cough and skin problem.*

Part 2

Mr. Sambo goes to the ART clinic with his son Chisomo, age 15 years. Mr. Sambo says Chisomo's mother had to stay home because she is pregnant and tired. He tells the health

care provider that his son is not eating well, has lost weight in the past 2 months, and has had diarrhoea and a cough. Chisomo's MUAC is 15.5 cm. He looks thin (his ribs can be seen) and pale. He has oedema in both feet. No blood has been seen in his stool, but he has had fever for almost a week. He is not on any medications. His eyes are sunken, and there is a prolonged skin pinch. He is thirsty. He has generalised lymphadenopathy, finger clubbing, and parotid enlargement. His respiratory rate is 48 breaths per minute (rapid). Mr. Sambo says Chisomo was diagnosed with HIV during a hospital admission last year but is not yet on ART. The health care provider starts Chisomo on ART.

***Answer**: Chisomo is classified as having severe undernutrition (based on MUAC and bilateral pitting oedema) with medical complications. He has other conditions including:*

- *Poor appetite*
- *Diarrhoea*
- *Cough*
- *Sunken eyes*
- *Prolonged skin pinch*
- *Chest in-drawing*
- *Lymphadenopathy*
- *Finger clubbing*
- *Parotid enlargement*

Chisomo will need to be referred to inpatient care, where the medical complications will be managed.

Part 3

Mr. Sambo has been coming for his nutrition monitoring visits and is feeling much better. He is now on ART, has gained weight, and now weighs 53 kg. His cough and diarrhoea have disappeared, and even though he still has skin problems, his skin has greatly improved. At the ART clinic, Mr. Sambo is praised for the good work he has done and is encouraged to eat healthy meals to maintain his healthy weight. His worry is that some friends told him that once he is on ART, he will have to eat very well, but he does not know how he will buy enough good food. Drinking alcohol has always been part of his life, and now he is worried he will have to stop because he is on ART.

***Answer**: Mr. Sambo is classified as having normal nutritional status. He will need nutrition counselling on how to maintain healthy weight using appropriate locally available foods. He will also need nutrition counselling on positive living and the importance of avoiding harmful habits such as drinking too much alcohol…*

Part 4

Mr. Sambo returns to the clinic after 2 months. He tells the service provider that he missed his appointment at 1 month because he had to attend an important family event. He says he has been eating a lot and feels good that his clothes are now becoming tight and that his friends are praising him for his weight gain. He now weighs 73 kg.

***Answer**: Mr. Sambo is overweight. He will need nutrition counselling on the importance of maintaining a healthy weight (normal nutritional status) and exercising regularly, and on the causes and consequences of overweight and obesity.*

Part 5

Mrs. Sambo is HIV-positive and has been on ART treatment for some time. She is 7 months pregnant. The health care provider at the ART clinic measures her; she weighs 96 kg, is 167 cm tall, and has a MUAC of 32 cm.

***Answer**: Mrs. Sambo is obese. She will need nutrition counselling on the importance of maintaining a healthy weight (normal nutritional status) and exercising regularly, and on the causes and consequences of overweight and obesity.*

Part 6

Mrs. Sambo brings Chisomo back to the ART clinic on the agreed date (1 month after his second visit). He looks better, and his mother is happier. It has been 3 months since he was discharged from inpatient treatment for SAM. His MUAC is now 19.5 cm. Mrs. Sambo reports no diarrhoea or other illnesses and says Chisomo's weight did not change the last two times he was weighed. Three months ago, Chisomo started on first-line ARVs, which his mother has been collecting every month. The ART site team counselled his mother on treatment and adherence. Chisomo tested negative for TB.

***Answer**: Chisomo is classified as having moderate undernutrition. He will need nutrition counselling on increasing consumption of adequate (in quality and quantity) nutritious locally available foods. This will help him attain a normal nutritional status.*

Part 7

It has been 7 months since Chisomo first arrived at the ART clinic. He is now doing very well. He has gained more weight, and his MUAC is 22.7 cm. He had one episode of diarrhoea (four loose stools) on Wednesday last week, but this was managed at home. He is also complaining that the ARV drugs sometimes make him lose his appetite. He seems to be adhering to the medication.

***Answer**: Chisomo is classified as normal nutritional status. He will need nutrition counselling on how to manage his appetite.*

4.1 Nutrition Care Plans and Support for Adolescent and Adult Clients (8 hours)

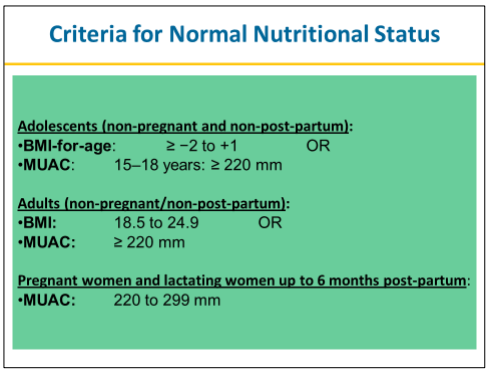
- Explain that the final step in nutrition assessment is to determine the correct nutrition care plan for the client. There is a nutrition care plan for every classification of nutritional status.

4.1.1: Nutrition Care Plan for Clients with Normal Nutritional Status

- Refer the participants to Reference 4.2 Nutrition Care Plan for Clients with Normal Nutritional Status in the Participant Manual (see below).

BRAINSTORM: Nutrition care for clients with normal nutritional status

- Ask the participants: 'What are the criteria for normal nutritional status?'
- Show **Slide 4.5** and explain the criteria used to determine that an adolescent, adult, or pregnant or lactating woman has normal nutritional status.
- Ask three volunteers to each read one of the following:
  - Step 1 — Medical care and support
  - Step 2 — Nutrition care and support
  - Step 3 — Referral and follow-up of clients



- When the participants are finished, discuss the steps and answer any questions.

Reference 4.2: Nutrition Care Plan for Clients with Normal Nutritional Status

Adolescents 15–18 years (non-pregnant and non-post-partum):

- **BMI-for-age**: ≥ −2 to +1 OR
- **MUAC:** ≥ 220 mm (22.0 cm)

Adults ≥ 19 years (non-pregnant/non-post-partum):

- **BMI:** 18.5 to 24.9 OR
- **MUAC:** ≥ 220 mm (22.0 cm)

Pregnant women and lactating women up to 6 months post-partum:

- **MUAC:** 220 to 299 mm (22.0 to 29.9 cm)

Step 1. Provide Medical Care and Support for Clients with Normal Nutritional Status

1. Review the client's medical records and condition and provide or refer for treatment according to the national guidelines for clinical management of HIV in children and adults or for infection prevention and control of TB.
2. Treat any medical conditions that were identified during the assessment
3. If the client's HIV status is unknown, provide or refer for HIV Testing Services (HTS).
4. If the client tests positive for HIV but is not on ART, start treatment or refer for treatment according to the national guidelines for clinical management of HIV in children and adults.
5. If the client tests positive for TB but is not receiving TB treatment, ensure that treatment is initiated immediately according to the national TB guidelines.
6. Find out whether the client is experiencing symptoms that affect nutrition and counsel on how to manage the symptoms.
7. If the client is a pregnant or lactating woman up to 6 months post-partum:
    - If the woman is HIV-positive, ensure provision of ARVs for both the mother and infant according to the national guidelines for clinical management of HIV in children and adults.
    - Give iron/folic acid every day (lactating woman up to 6 months post-partum) and counsel the woman to take the supplements as directed and on how to manage possible side effects.
    - If the client is pregnant, provide malaria prophylaxis (sulfadoxine pyrimethamine) and deworming tablets (e.g., Albendazole) according to national malaria guidelines.

Step 2. Provide Nutrition Care and Support for Clients with Normal Nutritional Status

1. Praise the client for good nutrition practices and explain the need to maintain those practices to avoid becoming undernourished or overnourished.
2. Review the client's nutrition records and address issues of concern.
3. Provide tailored counselling, explaining the need for adherence to medication; regular clinic visits; adequate diet; and water, sanitation, and hygiene (WASH) actions. **These topics are covered in the NCST counselling flipchart**.

Step 3. Refer and Plan to Follow Up a Client Who Has Normal Nutritional Status

1. Make an appointment to review the client's progress in 3 months or during the next ART or TB review/drug collection appointment date. Tell the client to return to the health facility earlier if he or she experiences any health-related problems.
2. If the client is a pregnant woman or a lactating woman up to 6 months post-partum, make an appointment to review the client's progress during the next antenatal or post-natal visit.
3. Ask the client if his or her economic situation has changed in a way that could affect access to food. If so, refer the client for ES/L/FS assessment and support.

PRACTICE: Providing care to clients with normal nutritional status

- Refer participants to **Exercise 4.3.** Ask participants to form pairs and answer the questions in the exercise (shown below with the answers).
- When participants have finished, review the answers in plenary.

Exercise 4.3: Nutrition Care Plan for Normal Nutritional Status

1. What criteria determine whether an adolescent or adult is eligible for a nutrition care plan for normal nutritional status?

Answer:

- *Adolescents 15–18 years (non-pregnant/non-post-partum):*
  - *BMI-for-age: ≥ −2 to +1* *OR*
  - *MUAC: ≥ 220 mm (22.0 cm)*
- *Adults ≥ 19 years (non-pregnant/non-post-partum):*
  - *BMI: 18.5 to 24.9* *OR*
  - *MUAC: ≥ 220 mm (22.0 cm)*
- *Pregnant women and lactating women up to 6 months post-partum:*
  - *MUAC: 220 to 299 mm (22.0 to 29.9 cm)*

2. What nutrition care and support should be provided to a client with normal nutritional status?

Answer: *Nutrition counselling focusing on the client's prioritised nutrition problems*

3. How often should health workers follow up a client with normal nutritional status?

Answer: *Once every 3 months or during their next ART or TB review/or drug collection appointment date*

4. When should nutrition counselling be provided to clients with normal nutritional status?

Answer: *When a specific nutrition problem is identified*

ROLE PLAY: Nutrition counselling for a client with normal nutritional status

- Refer participants to part 3 of the case study (Mr. Sambo) in **Exercise 4.2**.
- Ask for two volunteers, one who will play the health care provider and the other who will play the patient (Mr. Sambo).

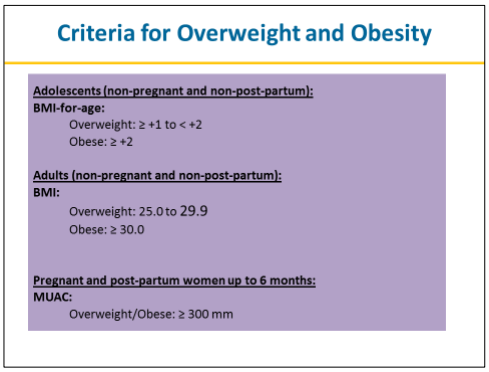
- Ask the two volunteers to role-play a nutrition counselling session at the front of the class. The session should not be less than 5 minutes and not exceed 10 minutes.
- Remind participants to use the NCST counselling flipchart where appropriate during the role play.
- The participants will observe and provide feedback at the end of the role play.
- Summarise by referring the participants back to **Reference 4.2: Nutrition Care Plan for Clients with Normal Nutritional Status** in the **Participant Manual.**

4.1.2: Nutrition Care Plan for Clients with Overweight and Obesity

- Refer the participants to Reference 4.3 Nutrition Care Plan for Clients with Overweight and Obesity in the Participant Manual (see below).

BRAINSTORM: Nutrition care for clients with overweight and obesity

- Ask the participants: 'What are the criteria for overweight and obese'?
- Show **Slide 4.6** and explain the criteria used to determine that an adolescent, adult, or pregnant or lactating woman is overweight or obese.
- Ask three volunteers to each read one of the following:
  - Step 1 – Medical care and support
  - Step 2 – Nutrition care and support
  - Step 3 – Referral and follow-up of clients
- When the participants are finished, summarise the discussion and answer any questions.



Reference 4.3: Nutrition Care Plan for Clients with Overweight and Obesity

Adolescents 15–18 years (non-pregnant and non-post-partum):
BMI-for-age:

- Overweight: ≥ +1 to < +2
- Obese: ≥ +2

Adults ≥ 19 years (non-pregnant and non-post-partum):
BMI:

- Overweight: 25.0 to 29.9
- Obese: ≥ 30.0

Pregnant women and lactating women up to 6 months post-partum:
MUAC:

- Overweight/obese: ≥ 300 mm (30.0 cm)

Step 1. Provide Medical Care and Support for Clients Who Are Overweight or Obese

1. Review the client's medical records and condition and provide or refer for treatment according to the national guidelines for clinical management of HIV in children and adults or for infection prevention and control of TB.
2. Treat any medical conditions that were identified during the assessment.
3. Check the client for risk factors of non-communicable diseases:
    - Check the client's blood pressure. If blood pressure is above normal, manage according to the national guidelines for non-communicable diseases.
    - Check the client's fasting blood glucose levels to assess for diabetes or pre-diabetes. If fasting blood glucose is above normal, manage according to the national guidelines for non-communicable diseases.
    - If the facility is equipped for lab work, check cholesterol levels.
4. If the client's HIV status is unknown, provide or refer for HTS.
5. Find out whether the client is experiencing symptoms that affect nutrition and counsel on how to manage the symptoms.
6. If the client is tests positive for HIV but is not on ART, start treatment or refer for treatment according to the national guidelines for clinical management of HIV in children and adults.
7. If the client tests positive for TB but is not receiving TB treatment, ensure that treatment is initiated immediately according to the national TB guidelines.
8. If the client is a pregnant or lactating woman up to 6 months post-partum:
    - If the woman is HIV-positive, ensure provision of ARVs for both the mother and infant according to the national guidelines for clinical management of HIV in children and adults.
    - Give iron/folic acid every day (lactating woman up to 6 months post-partum) and counsel the woman to take the supplements as directed and on how to manage possible side effects.
    - If the client is pregnant, provide malaria prophylaxis (sulfadoxine pyrimethamine) and deworming tablets (e.g., Albendazole) according to national malaria guidelines.

Step 2. Provide Nutrition Care and Support for Clients Who Are Overweight or Obese

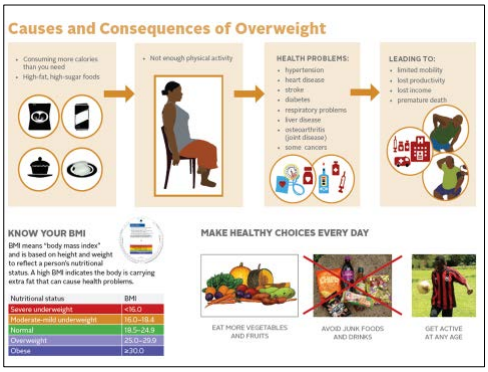
1. Review the client's nutrition records and provide tailored counselling, explaining the need for adherence to medication, regular clinic visits, adequate diet, and WASH actions. **These topics are covered in the NCST counselling flipchart**.
2. Be sure to counsel the client on making changes to diet and physical activity to attain a healthy weight range within BMI of 18.5 to 25.0. This can be achieved by:
    - Reducing the intake of highly processed food, fatty food, junk foods, sweet drinks, and sugary foods
    - Increasing the consumption of fresh fruits and vegetables
    - Doing at least 30 minutes of physical exercise every day, such as walking, jogging, and doing household chores
    - Reducing portion sizes
3. If the client is pregnant, do not encourage weight loss, but set appropriate weight gain targets for pregnancy and encourage healthy eating habits.

Step 3. Refer and Plan to Follow Up a Client Who Is Overweight or Obese

1. Make an appointment to review the client's progress in 1 month or during the next ART or TB review/drug collection appointment date. Tell the client to return to the health facility earlier if he or she experiences any health-related problems.
2. If the client is a pregnant or lactating woman up to 6 months post-partum, make an appointment to review the client's progress during the next antenatal or post-natal visit.
3. Ask the client if his or her economic situation has changed in a way that could affect access to food. If so, refer the client for ES/L/FS assessment and support.

BRAINSTORM: Causes and consequences of overweight and obesity

- Ask the participants: 'What are the consequences of overweight and obesity?'
- Show **Slide 4.7.**



- Explain the following:
  - We need to help clients see the relationship between nutrition and the health problems they experience. They may not know that overweight is an important factor in their health issues (hypertension, orthopedic problems, fatigue, diabetes, etc.)
  - Even for PLHIV, obesity can be a problem. If your patient is classified overweight or obese, you need to address it.
  - Clients need to make health choices, such as eating more vegetables and fruits, avoiding junk foods, and exercising regularly.

PRACTICE: Providing care to clients with overweight and obesity

- Refer participants to **Exercise 4.4.** Ask participants to form pairs and answer the questions in the exercise (shown below with the answers).
- When participants are finished, review the answers in plenary.

Exercise 4.4. Nutrition Care Plan for Overweight and Obesity

1. What criteria determine whether an adolescent or adult is eligible for a nutrition care plan for overweight and obesity?

Answer:

- *Adolescents 15–18 years (non-pregnant/non-post-partum):*

  BMI-for-age:

  - *Overweight: ≥ +1 to < +2*
  - *Obese: ≥ +2*
- *Adults ≥ 19 years (non-pregnant/non-post-partum):*

  BMI:

  - *Overweight: 25.0 to 29.9*
  - *Obese: ≥ 30.0*
- *Pregnant women and lactating women up to 6 months post-partum:*

  MUAC:

  - *Overweight/obese: ≥ 300 mm*

2. What nutrition care and support should be provided to a client who is overweight or obese?

Answer: *Nutrition counselling focusing on supporting the client to lose weight and maintain a healthy lifestyle*

3. How often should health workers follow up a client who is overweight or obese?

Answer: *Once every month*

4. What should nutrition counselling of clients who are overweight and obese focus on?

Answer:

- *Consumption of appropriate amounts of food—decreasing food intake to facilitate weight loss*
- *Causes and consequences of overweight and obesity*
- *Positive living and importance of having a healthy lifestyle*

ROLE PLAY: Nutrition counselling for a client with overweight and obesity

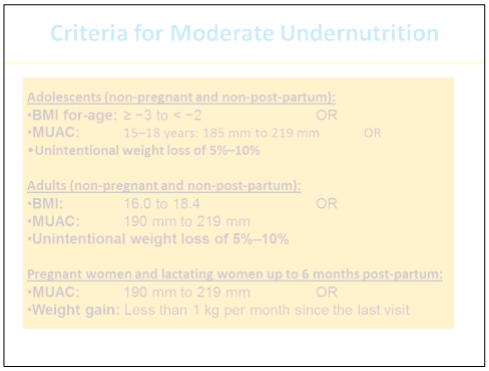
- Refer participants to part 4 and part 5 of the case study (Mr. Sambo and Mrs. Sambo) in **Exercise 4.2**.
- Ask for four volunteers (two for each of the case studies). In each case study, one volunteer will play the health care provider and the other who will play the patient.
- Ask the first pair of volunteers to role-play a nutrition counselling session at the front of the class (part 4 on Mr. Sambo). When they are finished, the second pair of volunteers should role-play a nutrition counselling session (part 5 on Mrs. Sambo). Each session should not be less than 5 minutes and not exceed 10 minutes.
- The participants will observe and provide feedback at the end of the role play.
- Summarise by referring the participants to **Reference 4.3: Nutrition Care Plan for Clients with Overweight and Obesity** in the **Participant Manual.**

4.1.3: Nutrition Care Plan for Clients with Moderate Undernutrition

- Refer the participants to Reference 4.4: Nutrition Care Plan for Clients with Moderate Undernutrition in the Participant Manual (see below).

BRAINSTORM: Nutrition care for clients with moderate undernutrition

- Ask the participants: 'What is the criteria for moderate undernutrition?'
- Show **Slide 4.8** and explain the criteria used to determine that an adolescent, adult, or a pregnant or lactating woman has moderate undernutrition.



- Ask three volunteers to read in turns the following:
  - Step 1 — Medical care and support
  - Step 2 — Nutrition care and support
  - Step 3 — Referral and follow-up of clients
- When the participants are finished, discuss and answer any questions.

Reference 4.4: Nutrition Care Plan for Clients with Moderate Undernutrition

Adolescents 15–18 years (non-pregnant and non-post-partum):

- **BMI for-age:** ≥ −3 to < −2 OR
- **MUAC:** 185 mm to 219 mm (18.5 to 21.9 cm) OR
- **Unintentional weight loss of 5%–10%**

Adults ≥19 years (non-pregnant and non-post-partum):

- **BMI:** 16.0 to 18.4 OR
- **MUAC:** 190 mm to 219 mm (19.0 to 21.9 cm) OR
- **Unintentional weight loss of 5%–10%**

Pregnant women and lactating women up to 6 months post-partum:

- **MUAC:** 190 mm to 219 mm (19.0 to 21.9 cm) OR
- **Weight gain:** Less than 1 kg per month since the last visit

Step 1. Provide Medical Care and Support for Clients with Moderate Undernutrition

1. Review the client's medical records and condition and provide or refer for treatment according to the national guidelines for clinical management of HIV in children and adults or for infection prevention and control of TB.
2. Treat any medical problems that were identified during the assessment.
3. If the client's HIV status is unknown, provide or refer for HTS.
4. If the client is HIV-positive but is not on ART, start treatment or refer for treatment according to the national guidelines for clinical management of HIV in children and adults.
5. If client is HIV-positive, on ART, and losing weight, provide further clinical and dietary assessment to find the cause of weight loss.
6. If the client tests positive for TB but is not receiving TB treatment, ensure that treatment is initiated immediately according to the national TB guidelines.
7. If the client has TB, is receiving TB treatment, but is losing weight, refer for further medical assessment.
8. Find out whether the client is experiencing symptoms that affect nutrition and counsel on how to manage the symptoms.
9. If the client is anaemic, provide or refer for treatment according to the national guidelines.
10. If the client is a pregnant or lactating woman up to 6 months post-partum:
    - If the woman is HIV-positive, ensure provision of ARVs for both the mother and infant according to the national guidelines for clinical management of HIV in children and adults.
    - Give iron/folic acid every day (lactating woman up to 6 months post-partum) and counsel the woman to take the supplements as directed and on how to manage possible side effects.
    - If the woman is pregnant, provide malaria prophylaxis (sulfadoxine pyrimethamine) and deworming tablets (e.g., Albendazole) according to national malaria guidelines.

Step 2. Provide Nutrition Care and Support for Clients with Moderate Undernutrition

1. Review the client's nutrition records and address issues of concern.
2. Provide tailored counselling, explaining the need for adherence to medication, regular clinic visits, adequate diet, and WASH actions. **These topics are covered in the NCST counselling flipchart**.
3. Provide counselling and support on how the client can consume 20% more energy, using locally available nutritious foods. If the client is an adolescent, more additional energy may be required to gain and maintain weight.
4. Provide the client with supplementary food, such as fortified corn-soya blend (CSB+) (*likuni phala)* or Vitameal. The table below shows the supplementary food ration sizes to be provided to an adolescent or adult client.

Supplementary Food Ration Sizes for Adolescents and Adults

Group	Daily Ration			Monthly Ration		
	CSB+ (*likuni phala*) and oil		Vitameal	CSB+ (*likuni phala*) and oil		Vitameal
Adolescents and adults (including pregnant and lactating women up to 6 months post-partum)	300 g	33.33 ml	300 g	9.0 kg	1 L	4.5 kg

5. Counsel the client to eat the supplementary food as an additional snack, not to replace normal meals, and not to share it with other household members. Explain that the product is medicine to help improve his or her nutritional status.
6. Show the client how to prepare the supplementary food at home. Explain to the client how much of the *likuni phala* or Vitameal he or she should eat each day.

Step 3. Refer and Plan to Follow Up a Client with Moderate Undernutrition

1. Make an appointment to review the client's progress after 1 month. Tell the client to return earlier if he or she experiences any health-related problems before the next appointment.
2. At follow-up visits, refer the client for further medical examination or nutrition assessment if he or she is losing weight.
3. Ask the client if his or her economic or livelihood situation has changed in a way that impairs access to food. If so, refer the client for ES/L/FS assessment and support.
4. Transition the client to the nutrition care plan for normal nutritional status when:
   - Opportunistic infections have been cured.
   - The client has steady weight gain and reached the BMI, BMI-for-age, or MUAC cutoffs in the table below for two consecutive visits.

Cutoffs for Transitioning from Moderate Undernutrition to Normal Nutritional Status

Group	BMI	BMI-for-age	MUAC	Weight gain
15–18 years		≥ −2	≥ 220 mm (22.0 cm)	At least 10% of body weight
≥ 19 years	≥ 18.5		≥ 225 mm (22.5 cm)	
Pregnant women and lactating women up to 6 months post-partum			≥ 225 mm (22.5 cm)	At least 2 kg per month

- If a client was admitted for treatment of moderate undernutrition due to unintentional weight loss, the client should be transitioned to the nutrition care plan for normal nutritional status if he or she:
  - Gains at least 10% of the body weight.
  - Has a steady weight gain and meets the BMI, BMI-for-age, or MUAC cutoffs in the table above for two consecutive visits.

PRACTICE: Providing care to clients with moderate undernutrition

- Refer participants to **Exercise 4.5** in the **Participant Manual** (shown below with the answers). Ask participants to form pairs and answer the questions in the exercise.
- When participants have finished, review the answers in plenary.

Exercise 4.5: Nutrition Care Plan for Clients with Moderate Undernutrition

1. What criteria determine whether an adolescent or adult is eligible for a nutrition care plan for moderate undernutrition?

   Answer:

   - *Adolescents 15–18 years (non-pregnant/non-post-partum):*
     - *BMI for-age: ≥ −3 to < −2 OR*
     - *MUAC: 185 mm to 219 mm (18.5 cm to 12.9 cm) OR*
     - *Unintentional weight loss of 5%–10%*

   - *Adults ≥ 19 years (non-pregnant/non-post-partum):*
     - *BMI: 16.0 to 18.4 OR*
     - *MUAC: 190 mm to 219 mm OR*
     - *Unintentional weight loss of 5%–10%*

   - *Pregnant women and lactating women up to 6 months post-partum:*
     - *MUAC: 190 mm to 219 mm OR*
     - *Weight gain: Less than 1 kg per month since the last visit*

2. What specialised foods are given to clients under the nutrition care plan for moderate undernutrition?

   Answer: *Fortified corn-soya blend (CSB+) or Vitameal and vegetable oil*

3. What quantities of specialised foods per day do you give to adolescents and adults under the nutrition care plan for moderate undernutrition?

   Answer*:*
   300 grams per day for 30 days (9 kg per month)
   33.33 ml of vegetable oil per day for 30 days (1 litre per month)

4. What messages should health care providers focus on when giving nutrition counselling and education to adolescents and adults with HIV and/or TB who have moderate undernutrition?

   Answer:

   - *Adequate diet:*
     - *Importance of consuming an adequate diet (in quality and quantity)*
     - *Continue to eat three meals and two snacks every day, consuming 20% more energy from home foods.*
   - *Adherence to medication*
   - *WASH*
   - *Regular clinic visits*

5. How often should health care providers follow up clients with moderate undernutrition?

   Answer: *Every month*

ROLE PLAY: Nutrition care plan for moderate undernutrition

- Refer the groups again to part 6 of the case study in **Exercise 4.2 (Chisomo).** Explain that Chisomo **was** severely undernourished but has now been discharged from treatment of severe undernutrition to treatment for moderate undernutrition.
- Ask three participants to demonstrate at the front of the room the nutrition care and support that will be given to Chisomo. One will play Chisomo's parent, the second will play Chisomo, and the third will act as the service provider.
- Remind the volunteers to use the NCST counselling flipchart where necessary.
- Give the participants a time limit of 10 minutes for the role play.
- The participants will observe and provide feedback at the end of the role play.

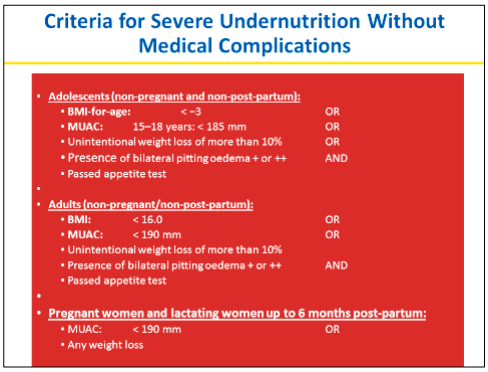
4.1.4: Nutrition Care Plan for Clients with Severe Undernutrition without Medical Complications

- Refer the participants to **Reference 4.5 Nutrition Care Plan for Clients with Severe Undernutrition without Medical Complications** in the Participant Manual (see below).

BRAINSTORM: Criteria for severe undernutrition without medical complications

- Ask participants: 'What criteria classify adolescents and adults as having severe undernutrition without medical complications?'

- Show **Slide 4.9** and explain the criteria used to determine that an adolescent, adult, or a pregnant or lactating woman has severe undernutrition without medical complications.



- Ask participants whether they have seen such cases in their work.
- Ask three volunteers to each read one of the following:
  - Step 1 – Medical care and support
  - Step 2 – Nutrition care and support
  - Step 3 – Referral and follow-up of clients
- When the participants are finished, discuss and answer any questions.

Reference 4.5: Nutrition Care Plan for Clients with Severe Undernutrition without Medical Complications

Adolescents 15–18 years (non-pregnant and non-post-partum):

- **BMI-for-age:** < −3 OR
- **MUAC:** < 185 mm (18.5 cm) OR
- Unintentional weight loss of more than 10% OR
- Presence of bilateral pitting oedema + or ++ AND
- Passed appetite test

Adults ≥ 19 years (non-pregnant/non-post-partum):

- **BMI:** < 16.0 OR
- **MUAC:** < 190 mm (19.0 cm) OR
- Unintentional weight loss of more than 10%
- Presence of bilateral pitting oedema + or ++ AND
- Passed appetite test

Pregnant women and lactating women up to 6 months post-partum:

- MUAC: < 190 mm (19.0 cm) OR
- Any weight loss

Step 1. Provide Medical Care and Support for Clients with Severe Undernutrition without Medical Complications

1. Review the client's medical records and condition and provide or refer for treatment according to the national guidelines for clinical management of HIV in children and adults or for infection prevention and control of TB.
2. Treat any medical conditions that were identified during the assessment.
3. If the client's HIV status is unknown, provide or refer for HTS.
4. If the client is HIV-positive but is not on ART, start treatment or refer for treatment according to the national guidelines for clinical management of HIV in children and adults.
5. If the client tests positive for TB but is not receiving TB treatment, ensure that treatment is initiated immediately according to the national TB guidelines.
6. If the client has HIV or TB, is receiving ART or TB treatment but is losing weight, conduct further clinical and dietary assessment to find the cause of weight loss.
7. Find out whether the client is experiencing symptoms that affect nutrition and counsel on how to manage the symptoms.
8. Assess the client for anaemia:
    - If the client has severe anaemia (Hb < 7.0 g/dL), refer the client for further assessment and treatment in inpatient care.
    - If the client has mild or moderate anaemia (male: Hb 7.0–13.7 g/dL, female: Hb 7.0–12.0 g/dL), DO NOT give iron/folic acid; ready-to-use therapeutic food (RUTF) contains iron/folic acid. As the client's nutritional status improves, it is expected that Hb levels will improve.

Step 2. Provide Nutrition Care and Support for Clients with Severe Undernutrition without Medical Complications

1. Conduct an appetite test by offering the client one sachet of RUTF. The client should eat at least half of the sachet in about 30 minutes. If the client has no appetite, try giving smaller amounts of RUTF every 10–15 minutes. If the client still does not eat the RUTF, refer the client to inpatient care.
2. If the client has a good appetite (passes the appetite test), is willing to manage severe undernutrition at home, and has someone at home to support him or her, provide three sachets of RUTF and 300 grams of *likuni phala* or Vitameal per day.
3. Explain to the client the following key messages:
    - RUTF and *likuni phala* are food-based medicines to treat your current poor nutritional status. They should not be shared.
    - If you are having trouble eating, eat small frequent meals of RUTF and *likuni phala*. Finish all the RUTF and *likuni phala* allocated for each day.
    - In addition to RUTF and *likuni phala*, eat meals with your family and snacks between meals.
    - When suffering from diarrhoea, do not stop eating. Continue to eat the RUTF, *likuni phala*, and other nutritious foods, and drink plenty of fluids.

4. RUTF and *likuni phala* provide needed micronutrients; therefore, do not give an additional micronutrient supplement.
5. Provide tailored counselling, explaining the need for adherence to medication, regular clinic visits, adequate diet, and WASH actions. **These topics are covered in the NCST counselling flipchart**.

NOTE: Severely undernourished pregnant and lactating women up to 6 months post-partum **SHOULD NOT** be treated with RUTF. Provide the client with only *likuni phala* or other supplementary food that meets recommended standards. RUTF contains high doses of vitamin A, above the recommended 10,000 IU per day. High doses of vitamin A can cause tetrogenetic effects in early pregnancy. Encourage pregnant and lactating women to meet their additional energy requirements by eating other home-prepared nutritious foods.

Step 3. Refer and Plan to Follow Up with a Client with Severe Undernutrition without Medical Complications

1. Make an appointment to review the client's progress after 2 weeks in the first month of treatment. When the client's condition improves, review progress once a month. Tell the client to return to the health facility earlier if he or she experiences any health-related problems before the next appointment.
2. Refer the client for further medical assessment if the client develops bilateral pitting oedema OR is not gaining weight OR has lost weight for two consecutive visits.
3. Ask the client if his or her economic or livelihood situation has changed in a way that impairs access to food. If so, refer the client for ES/L/FS assessment and support.
4. Transition the client to the nutrition care plan for moderate undernutrition when:
   - Opportunistic infections have been managed
   - The client has a steady weight gain and reached the BMI, BMI-for-age, or MUAC cutoffs listed in the table below for two consecutive visits.

Cutoffs for Transitioning from Severe Undernutrition without Medical Complications to Moderate Undernutrition

Group	BMI	BMI-for-age	MUAC	Weight gain
15–18 years		≥ –3	≥ 185 mm (18.5 cm)	10% or more of body weight
≥ 19 years	≥ 16.0		≥ 190 mm (19.0 cm)	
Pregnant women and lactating women up to 6 months post-partum			≥ 190 mm (19.0 cm)	At least 2.0 kg per month

- If a client was admitted for treatment of severe undernutrition due to unintentional weight loss, the client should be transitioned to the nutrition care plan for moderate undernutrition if he or she:
  - Gains 10% or more of his/her body weight
  - Has a steady weight gain and meets the BMI, BMI-for-age, or MUAC cutoffs in the table above for two consecutive visits

BRAINSTORM: Appetite test

- Ask participants: 'Why should an appetite test be performed on a client?' Compare responses with the information in the box.

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

- Refer participants to **Reference 4.6: How to Conduct an RUTF Appetite Test** in the **Participant Manual** (see below). Ask one volunteer to read all the steps aloud.

Reference 4.6: How to Conduct an RUTF Appetite Test

All adults and adolescents with HIV and/or TB who are classified as having severe undernutrition should take a ready-to-use therapeutic food (RUTF) appetite test to determine the next step for treatment. If an adult or adolescent with severe undernutrition has no appetite and cannot eat enough of the RUTF, he or she should be referred for treatment in inpatient care.

Steps for conducting an appetite test:

1. Conduct the appetite test in a quiet, separate area.
2. Explain to the adolescent/adult or caregiver the purpose of the appetite test and outline the procedures involved.
3. Wash hands before giving the RUTF, and have the client wash his/her hands before eating the RUTF.
4. Offer the client plenty of clean water in a cup to drink while eating the RUTF.
5. Observe the adolescent/adult eating the RUTF and determine if he/she passes or fails the appetite test within 30 minutes. **Adult clients should finish at least one sachet of RUTF 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.
   - Explain that in outpatient care management of severe undernutrition, 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.

PRACTICE: Providing care to clients with severe undernutrition without medical complications

- Refer participants to **Exercise 4.6** in the **Participant Manual** (shown below with the answers). Ask participants to form pairs and answer the questions in the exercise.
- When participants have finished, review their answers in plenary.

Exercise 4.6: Nutrition Care Plan for Severe Undernutrition Without Medical Complications

1. What criteria determine whether an adolescent or adult is eligible for a nutrition care plan for severe undernutrition without medical complications?

   Answer:
   Adolescents 15–18 years (non-pregnant and non-post-partum):
   - ***BMI-for-age:*** *< −3* *OR*
   - ***MUAC:*** *< 185 mm (18.5 cm)* *OR*
   - *Unintentional weight loss of more than 10%* *OR*
   - *Presence of bilateral pitting oedema + or ++* *AND*
   - *Passed appetite test*

   Adults ≥ 19 years (non-pregnant/non-post-partum):
   - ***BMI:*** *< 16.0* *OR*
   - ***MUAC:*** *< 190 mm (19.0 cm)* *OR*
   - *Unintentional weight loss of more than 10%*
   - *Presence of bilateral pitting oedema + or ++* *AND*
   - *Passed appetite test*

   Pregnant women and lactating women up to 6 months post-partum:
   - *MUAC:* *< 190 mm* *(19.0 cm)* *OR*
   - *Any weight loss*

2. What specialised food products are given to adolescents or adults under the nutrition care plan for severe undernutrition without medical complications?

   Answer: *RUTF and fortified corn-soya blend (CSB+, also known as likuni phala] or Vitameal*

3. What quantities of specialised food products should be given per day to adolescents or adults with severe undernutrition without medical complications?

   Answer: *Three sachets of RUTF and 300 g of CSB+ (likuni phala) or three sachets of RUTF and 300 g of Vitameal*

4. What key messages should be given to adolescents and adults with severe undernutrition without medical complications?

   Answer:
   - *RUTF and likuni phala are food-based medicines to treat your current poor nutritional status. They should not be shared.*

- *If you are having trouble eating, eat small frequent meals of RUTF and likuni phala. Finish all the RUTF and likuni phala allocated for each day.*
- *In addition to RUTF and likuni phala, eat meals with your family and snacks between meals.*
- *When suffering from diarrhoea, do not stop eating. Continue to eat the RUTF, likuni phala, and other nutritious foods, and drink plenty of fluids.*

5. What other interventions/services are given to adolescents and adults with severe undernutrition without medical complications?

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

6. How often should adolescents and adults with severe undernutrition without medical complications be followed up?

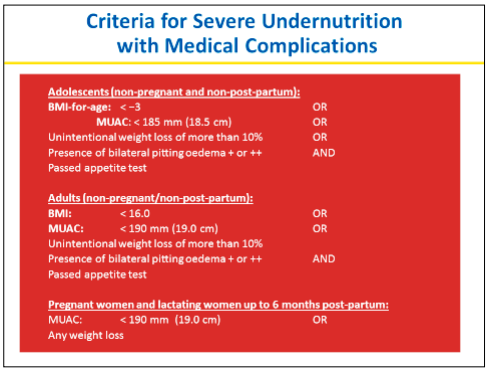
   Answer: *After 2 weeks*

4.1.5. Nutrition Care Plans for Clients with Severe Undernutrition with Medical Complications

- Refer the participants to Reference 4.7 Nutrition Care Plan for Clients with Severe Undernutrition with Medical Complications in the Participant Manual (see below).

BRAINSTORM: Criteria for severe undernutrition with medical complications

- Show **Slide 4.10** and explain the criteria used to determine that an adolescent, adult, or a pregnant or lactating woman has severe undernutrition with medical complications.



- Ask participants whether they have seen such cases in their work.

- Ask a volunteer to read aloud the following:
  - Step 1 – Medical care and support

  When finished, ask participants to read in pairs the following:
  - Step 2 – Nutrition care and support
  - Step 3 – Referral and follow-up of clients
- When the participants are finished, discuss and answer any questions.

Reference 4.7: Nutrition Care Plan for Clients with Severe Undernutrition with Medical Complications

Most adolescents and adults with severe undernutrition will present with other health problems. Some medical conditions can be treated at home, but some clients may have medical complications that require inpatient treatment. The following complications indicate that a patient requires inpatient management of severe undernutrition:

- Severe bilateral pitting oedema (Grade +++)
- Failed appetite test
- Infection that requires intravenous antibiotics
- Inability to care for oneself and lack of caretakers at home
- Severe infection that requires hospitalisation according to the national guidelines for clinical management of HIV in children and adults or the national guidelines for TB control

Bilateral pitting oedema +++

Any of the following anthropometric measurement criteria for severe undernutrition:

Adolescents 15–18 years (non-pregnant and non-post-partum):

- BMI-for-age: < –3 OR
- MUAC: < 185 mm (18.5 cm) OR
- Unintentional weight loss of more than 10%

Adults ≥ 19 years (non-pregnant/non-post-partum):

- BMI: < 16.0 OR
- MUAC: < 190 mm (19.0 cm) OR
- Unintentional weight loss of more than 10%

Pregnant women and lactating women up to 6 months post-partum:

- MUAC: < 190 mm (19.0 cm) OR
- Any weight loss

WITH any of the following medical conditions

- Failed appetite test
- Severe infections or medical conditions that require hospitalisation according to the national guidelines for clinical management of HIV in children and adults or for TB control

Step 1. Provide Medical Care and Support for Clients with Severe Undernutrition with Medical Complications

1. Treat clients with severe undernutrition with medical complications (no appetite, oedema +++, and severe infections or medical conditions that require hospitalisation) in inpatient care.
2. Review the client's medical records and condition and treat severe infections and other medical conditions, such as severe anaemia, chronic diarrhoea, and severe dehydration, according to the national guidelines for clinical management of HIV in children and adults or for infection prevention and control of TB.
3. If the client's HIV status is unknown, provide or refer for HTS.
4. If the client is HIV-positive but is not on ART, start treatment or refer for treatment according to the national guidelines for clinical management of HIV in children and adults.
5. If the client tests positive for TB but is not receiving TB treatment, ensure that treatment is initiated immediately according to the national TB guidelines.
6. If client is HIV-positive, is receiving ART, but is losing weight, conduct further clinical and dietary assessment to find the cause of weight loss.
7. If the client has TB, is receiving TB treatment, but is losing weight, conduct further clinical and dietary assessment to find the cause of weight loss.
8. If the client is an HIV-positive pregnant or lactating woman, ensure provision of ARVs for both the mother and infant according to the national guidelines for clinical management of HIV in children and adults.

Step 2. Provide Nutrition Care and Support for Clients with Severe Undernutrition with Medical Complications

1. After the client is admitted to inpatient care, give him or her F-75 therapeutic milk as an initial feed for the first 1–2 days based on weight (130 ml/kg/day). If the client has severe (+++) oedema, his or her weight will not be a true weight; the weight may be as much as 30% higher due to excess fluid. To compensate for the excess weight, give the client only 100 ml/kg/day of F-75.

   The table below shows daily amounts of F-75 feeds for adolescents and adults who are severely underweight or have bilateral pitting oedema + or ++, and admitted to inpatient care.

Weight of patient (kg)	Amount of each feed (ml) (8 feeds per day)
15.0–19.9	260
20.0–24.9	290
25.0–29.9	300
30.0–39.9	320
40.0–60.0	350

   The table below shows daily amounts of F-75 feeds for adolescents and adults with severe bilateral pitting oedema (+++).

Weight of patient (kg)	Amount of each feed (ml) (8 feeds per day)
15.0–19.9	210
20.0–24.9	230
25.0–29.9	240
30.0–39.9	255
40.0–60.0	280

   - **How to prepare F-75:** When using commercial prepackaged F-75, mix one packet of F-75 (102.5 g) with 500 ml of cooled boiled water.

2. It will take about 2–3 days for a client to transition from F-75 to a more energy-dense therapeutic food, such as RUTF or F-100 therapeutic milk. Transition a client when the following criteria are met:
   - The client has good appetite (easily finishes the F-75 feeds).
   - Bilateral pitting oedema is subsiding, e.g., severe oedema (+++) has reduced to moderate (++).
   - No serious medical problems or complications that require intravenous treatment exist.
3. When the condition is improving and the client is ready to transition, gradually introduce RUTF. Test the acceptability of RUTF by offering it to the client every meal time. Ask the client to first eat RUTF before providing F-75 feeds. If the client does not finish at least two sachets of RUTF for the day, 'top up' with F-75 milk feeds. The amount of F-75 to top up with will be determined by the number of RUTF sachets consumed. If less than one sachet of RUTF is consumed, the top-up amount of F-75 is equal to the daily ration size of F-75. If one to two sachets are consumed, then top up with 50% of the daily ration size of F-75.

4. When the client is able to consume at least two sachets of RUTF, stop giving the F-75 milk feeds. Encourage the client to drink water freely.
5. Monitor intake of RUTF for the next 1–2 days, ensuring that the client can consume the recommended daily ration of three sachets of RUTF. During this period, encourage the client to consume *likuni phala* when he or she has completed the daily RUTF ration.
6. If the client develops complications during the transition period, return him or her to the initial phase using F-75 feeds and provide appropriate medical care. If the client tolerates RUTF and complications have stabilised during this period, discharge to continue treatment in outpatient care.
7. If the client has difficulty eating RUTF due to mouth sores or severe oral thrush, use F-100 therapeutic milk instead of RUTF during the transition period.

   The table below shows daily amounts of F-100 feeds to give adolescents and adults during the transition period.

Weight of patient (kg)	Amount of each feed (ml) (6 feeds per day)	Amount of each feed (ml) (5 feeds per day)
15.0–19.9	300	400
20.0–24.9	320	450
25.0–29.9	350	450
30.0–39.9	370	500
40.0–60.0	400	500

   - **How to prepare F-100:** When using prepackaged F-100, mix one packet of F-100 (114 g) with 500 ml of cooled boiled water.

   NOTE: Severely undernourished pregnant and lactating women **SHOULD NOT** be treated with RUTF or F-100 during transition or rehabilitation. Provide the client only with *likuni phala* or another supplementary food that meets recommended standards. RUTF and F-100 contain high doses of vitamin A, above the recommended 10,000 IU per day. High doses of vitamin A can cause tetrogenetic effects in early pregnancy. Encourage pregnant and lactating women to meet their additional energy requirements by eating other home-prepared nutritious foods**.**

8. When the client successfully transitions to F-100 feeds (i.e., easily finishes daily amount of F-100 feeds and medical condition has stabilised), increase the amount of F-100 gradually by 10–20 ml during each feed. Ensure that the F-100 feeds do not exceed the amounts in the table below during the rehabilitation period.

Weight of patient (kg)	Amount of each feed (ml) (6 feeds per day)	Amount of each feed (ml) (5 feeds per day)
15.0–19.9	550	650
20.0–24.9	650	780
25.0–29.9	750	900
30.0–39.9	850	1,000
40.0–60.0 kg	1,000	1,200

   If the client is in the rehabilitation phase and taking F-100, add one crushed tablet of ferrous sulphate (200 mg) to each 2–2.4 L of F-100. If smaller amounts of F-100 are needed, ferrous

sulphate must first be diluted. For 1,000 to 1,200 ml of F-100, dilute one tablet of ferrous sulphate (200 mg) in 4 ml water and add 2 ml of the solution. For 500–600 ml of F-100, add 1 ml of the solution.

9. For clients with oral thrush or mouth sores, conduct an RUTF appetite test. If the client passes the test, monitor the RUTF intake for 1 day and discontinue the F-100 feeds. When the client is eating RUTF, stop giving iron/folic acid because RUTF contains adequate amounts of iron/folic acid.
10. After the client is able to eat the RUTF, give the client three sachets of RUTF and 300 g of *likuni phala.* Explain to the client the following key messages:
    - RUTF and *likuni phala* are food-based medicines to treat your current poor nutritional status. They should not be shared.
    - If you are having trouble eating, eat small, frequent meals of RUTF and *likuni phala*. Finish all the RUTF and *likuni phala* allocated for each day.
    - In addition to RUTF and *likuni phala*, eat meals with your family and have snacks between meals.
    - When suffering from diarrhoea, do not stop eating. Continue to eat the RUTF, *likuni phala*, and other nutritious foods, and drink plenty of fluids.

Step 3. Refer and Plan to Follow Up a Client with Severe Undernutrition with Medical Complications

1. Refer the client for management of severe undernutrition without complications in outpatient care when:
    - The client has good appetite (can consume the full day's ration of RUTF and *likuni phala*).
    - Medical conditions have resolved or chronic conditions have stabilised.
    - Bilateral pitting oedema is subsiding (if applicable).
2. Provide the client with 42 sachets (three per day for 14 days) of RUTF and 4.5 kg of *likuni phala* (300 g per day for 14 days). Refer the client for monitoring and weighing after 2 weeks at a health facility near his or her home.
3. Encourage the client to eat nutritious home-cooked meals after finishing the daily ration of RUTF and *likuni phala* to meet additional nutritional needs.
4. Follow up to ensure that the client is examined at the referral health facility after 2 weeks.

ROLE PLAY: Nutrition care plan for severe undernutrition with medical complications

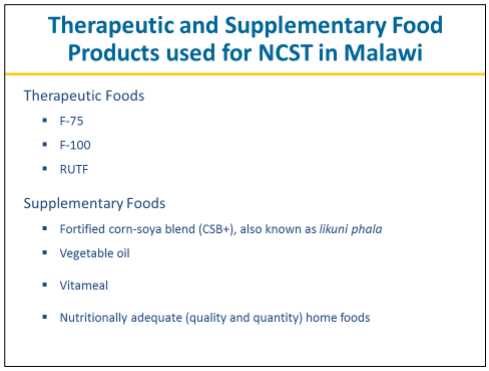
- Divide participants into groups of three people.
- Refer the groups to part 2 of the case study in **Exercise 4.2 (Chisomo)** in the **Participant Manual.** Explain that Chisomo has severe undernutrition with medical complications.

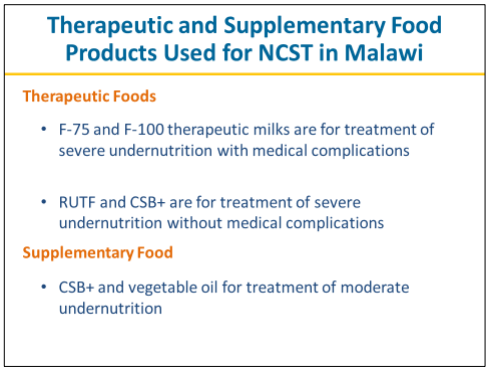
- Ask the groups to demonstrate the nutrition care and support that will be given to Chisomo. One participant will act as Chisomo's father, the second as Chisomo, and the third as a service provider.
- Give the groups 10 minutes to complete the role play.
- When the groups are finished, ask participants to highlight some of the challenges they might face in providing care and support to clients who are severely undernourished with medical complications.

4.2 Summary of Therapeutic and Supplementary Food Products Available for Adolescents and Adults in Malawi (1½ hours)

PRESENTATION: Therapeutic and Supplementary Food Products

- Show **Slides 4.11 and 4.12** on specialised food products for moderately and severely undernourished clients. Ask a volunteer to read them aloud.

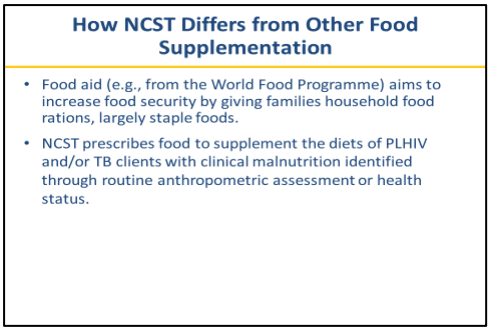




- Facilitate discussion about how specialised food products can improve adherence to medication. Explain that they can improve nutrition to make medicines more effective and be an incentive for clients to return for follow-up visits).
- Facilitate discussion about how specialised food products can improve birth outcomes and child survival (for example, a well-nourished woman has a lower chance of giving birth to a low-birth-weight infant).

BRAINSTORM: How NCST therapeutic and supplementary food products differ from other food aid support

- Ask participants: 'How are specialised therapeutic and supplementary food products different from other food aid support?'
- Show **Slide 4.13**.



- Stress that therapeutic and supplementary 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 aid support is usually staple foods given to households to improve food security. Facilitate discussion.

GROUP WORK: Preparing and tasting therapeutic and supplementary food products

- Divide the participants into groups of five or six. Give each group RUTF sachets; containers, water, and CSB packets; and spoons to prepare and taste the foods.
- Ask the groups to open their sachets of RUTF. Ask **all participants** to taste the RUTF. Ask them to consider the flavour, taste, texture, and whether or not they like the food.
- Then ask the groups to prepare the CSB+, reading aloud the directions on the sachet. Move around the groups to make sure the CSB is prepared correctly. After the food is prepared, ask all participants to taste it. Again, ask them to consider the flavour, taste, texture, and whether or not they like the food. **Encourage all participants to taste the food**.
- Refer the groups to **Exercise 4.7. Understanding Therapeutic and Supplementary Food Products for NCST in Malawi** in the **Participant Manual** (shown below with the answers). Ask the groups to answer the questions, referring to the food packages as needed. Give the groups 10 minutes for this activity.

Exercise 4.7: Understanding Therapeutic and Supplementary Food Products for NCST in Malawi

Question	RUTF	CSB
1. Name of the food	**Plumpy'Nut**	**Fortified corn-soya blend (CSB+) (also known as Likuni Phala) or Vitameal**
2. Number of grams in the sachet	**92**	**300**
3. Total calories per sachet	**500**	**1,350 (450 kcal per 100 g)**
4. Level of Recommended Dietary Allowance (RDA) of most of the micronutrients	**Approximately 1**	**0.5–1.2**

5. Is water needed for preparation?	**No**	**Yes**
6. Is water needed for consumption?	**Yes**	**No**
7. Taste, consistency, and texture	**(Up to each participant)**	**(Up to each participant)**
8. Expiry date	**(Depends on the package)**	**(Depends on the package)**

- After 10 minutes, ask one group to present its results. Note that Questions 7 and 8 will have different responses based on each participant's experience and the food's package.
- Facilitate discussion about challenges clients might face in preparing and eating specialised food products. Write the responses on a flip chart.
- Refer participants to Reference 4.8: Protocol for Storing and Handling Therapeutic and Supplementary Food Products at the Facility Level in the Participant Manual (see below). Emphasize that each facility should have regulations for managing stock to ensure accountability and efficient use of the available resources.

Reference 4.8: Protocol for Storing and Handling Therapeutic and Supplementary Food Products at the Facility Level

1. Store food products in a dry, well-lit, and well-ventilated storeroom—out of direct sunlight.
2. Protect the storeroom from water penetration. There should be adequate drainage, no stagnant water, and no leaks in the walls or roof.
3. Clean and disinfect the storeroom regularly; it should be cleaned daily or at least every other day. Take precautions to prevent harmful insects and rodents from entering the storage area. The storeroom should be fumigated regularly to control pests.
4. Store food products away from insecticides, chemicals, flammable products, hazardous materials, old files, office supplies, and equipment; always take appropriate safety precautions.
5. Keep fire safety equipment available, accessible, and functional, and train employees to use it.
6. Limit storage area access to authorised personnel and lock up controlled substances.
7. When possible, stack cartons at least 10 cm (4 in.) off the floor, 30 cm (1 ft.) away from the walls and other stacks, and no more than 2.5 m (8 ft.) high.
8. Arrange cartons with arrows pointing up (🡅) and with identification labels, expiry dates, and manufacturing dates clearly visible.

9. Store food products commodities to facilitate 'first-to-expire, first-out' (FEFO) procedures and stock management when the commodities have different expiry dates. If the commodities have the same expiry date, use the 'first in, first out' (FIFO) approach.
10. Immediately remove damaged and expired food products and dispose of them using established procedures.
11. Staff designated to store and handle food products should be trained in the required specifications for those foods and in food storage, handling, hygiene, and sanitation.
12. Staff designated to store and handle food products should fill out the stock card each day.
13. The RUTF is packed in plastic bags. The RUTF sachets are not biodegradable and can pollute the soil and water if they are burned or thrown in the garbage. Clients should return the empty bags and sachets to the health facility, and staff should dispose of them appropriately in a landfill.

4.3 Referral from the Facility to Community Economic Strengthening, Livelihoods, and Food Security Support (1 hour)

BRAINSTORM: Importance of referring clients to community economic strengthening, livelihoods, and food security services

- Ask participants: 'Why should clients be referred to community economic strengthening, livelihoods, and food security (ES/L/FS) services?'
- Summarise the responses on a flipchart and compare them to the answers in the box below.

> - Sustained improvement in household food access can prevent relapse after management of severe and moderate undernutrition.
> - Increasing food security contributes to increased retention in HIV care (Weiser et al. 2014).
> - Illness and undernutrition reduce labour productivity and disrupt household livelihood patterns, which can reduce food access and income.
> - Food insecurity and poverty may lead to negative coping strategies, such as selling off assets or engaging in high-risk sexual behaviours, thereby increasing vulnerability to HIV and other diseases.

BRAINSTORM: Establishing a referral system between health facilities and community-based ES/L/FS services

- Explain that for a referral system to function well, it is important to create a service directory and ensure that it is updated on a regular basis.
- Ask participants: 'What organisations provide community-based ES/L/FS services in the districts?'

- Write the answers on a flipchart.
- Explain that establishing a good referral system between health facilities and these community-based ES/L/FS services would make health care providers' work easier by reducing the workload of district and facility staff and improving short- and long-term outcomes for patients.
- Ask participants: 'What would an organised referral system consist of?'
- Write the responses on a flipchart and fill in any gaps with the points in the box below.

  - An organised referral system should include a complete directory of available support services that lists criteria necessary for accessing services, where and when services are offered, and which organisations offer the services.
  - The referral directory should contain contact information for service providers, program and project details, and eligibility criteria that will allow for targeted referrals to address each client's unique needs.

- Ask participants: 'Who can champion the referrals between the health facilities and community-based ES/L/FS services?'
- Explain that the District Assembly-based Nutrition Coordinating Committees, working in close collaboration with the District Health Office Nutritionists, should champion these referrals.
- Refer participants to **Reference 4.9: Suggested Strategy for Establishing a Facility-to-Community Referral System** in the **Participant Manual** (see below). Explain that these are only suggested steps and that they serve as a guide to developing a referral system within the respective districts.
- Ask participants to read aloud the steps in turns.

Reference 4.9 Suggested Strategy for Establishing a Facility-to-Community Referral System

The District Assembly-based Nutrition Coordinating Committees, working in close collaboration with the District Health Office Nutritionists, should champion referrals between health facilities and community-based ES/L/FS services. Referral systems can be either paper-based or electronic (using mobile phones or electronic tablets). To establish a facility-to-community referral system, follow the suggested steps below.

Step 1. Make a Paper-Based or Electronic Service Directory

A paper-based directory would have, for example, a separate sheet of paper for each community-based ES/L/FS service and programme. Each sheet would list information about the community service (e.g., name of catchment area, what support services are offered and when, name of service provider, project details, and eligibility criteria). A separate sheet would show the names of clients referred to each community service.

Step 2. Conduct Community Mapping

Knowing all the resources in a community will help you make the best referrals.

1. Identify and map all the ES/L/FS services and programmes in each catchment area.
2. Obtain all relevant information about each service and programme needed to fill out the service directory (type of service, contact information, eligibility requirements, etc.). Note existing collaborations, relationships, and current referral mechanisms.
3. Enter the information from the mapping exercise into your service directory.

Step 3. Hold Stakeholder Meetings to Validate the Service Directory

Hold a meeting with government and non-governmental stakeholders in each catchment area to share and validate the community mapping results. Work with stakeholders to develop and agree on priorities for improving linkages between NCST services at the health facility and ES/L/FS services in the community. Distribute the service directory to the stakeholders for review and finalisation. Update the service directory based on stakeholders' feedback.

Step 4. Establish and Manage the Referral System

The District Health Office Nutritionist should work closely with the District Assembly and stakeholders to:

1. Lead the implementation, maintenance, and monitoring of the referral system.
2. Share relevant and appropriate referral data and information with partners.
3. Help ensure follow-up of referred clients.
4. Coordinate stakeholder meetings among service providers.
5. Work with stakeholders to update the service directory annually, address gaps and inefficiencies in the system, track referral outcomes, and ensure the quality of the system.

4.4 Discussion and Module Evaluation (15 minutes)

- Allow time for questions and discuss any issues that need clarification.
- Refer participants to **Reference 4.0: NCST Competencies and Standards for Nutrition Care Plans and Support**. Emphasize the required competencies for nutrition care plans and support.
- Distribute copies of the **Module 4 Evaluation Form**.
- Explain to the participants the following:
  - Participants should rate whether the training achieved the module's objectives.
  - The evaluation form has five scoring criteria: 1= strongly disagree, 2=disagree, 3=neither agree nor disagree, 4 = agree, and 5=strongly agree.
  - Tick on the appropriate box of the scoring criteria (1– 5).

MODULE 4 EVALUATION FORM

Date: _____ Place of work: _____

Please rate each training objective in the table using the scoring system; tick where appropriate.

	1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree
The training achieved its objective of explaining how to choose an appropriate nutrition care plan and support for a client based on his/her nutritional status					
The training achieved its objective of describing the therapeutic and supplementary food products available for adolescents and adults in Malawi, and how to manage the supplies					
The training achieved its objective of explaining the process of referring clients from the facility to community ES/L/FS services					

General comments:

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

What was good about this module?

What was not good about this module?

What information would you like added to this module to assist you in your work?

MODULE 5

NCST Monitoring and Reporting

8 Hours

#	Description	Duration
5.0	Module Introduction	30 minutes
	Review (20 minutes)	
	Module Objectives (10 minutes)	
5.1	Purpose of Recording NCST Data	20 minutes
5.2	NCST Data Collection and Reporting Tools	3 hours
5.3	Coordinating Data and Reports from ART, ANC/PMTCT, TB, and OPD Service Delivery points	30 minutes
5.4	NCST Indicators	45 minutes
5.5	Using District Health Information System—Version 2 (DHIS-2) to Report on NCST Service Delivery	2 hours
5.6	Data Analysis	1 hour
5.7	Routine Data Quality Assessment	3 hours
5.6	Discussion and Module Evaluation	10 minutes

Learning Objectives

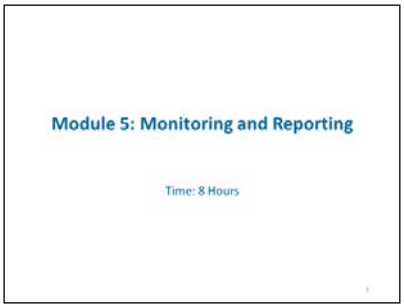
By the end of this module, participants will be able to:

1. Understand how to use NCST data collection tools
2. Report on NCST service delivery
3. Understand the definition of NCST indicators
4. Enter NCST data in the District Health Information System—Version 2 (DHIS-2) software
5. Understand the principles and processes of NCST data analysis
6. Understand how to conduct routine data quality assessments (RDQA)

Materials needed	• Flipchart and stand • Markers and tape • LCD projector • **PowerPoint slides** for **Module 5** • NCST Adolescent and Adult Nutrition Register • NCST Undernourished Client Management Form • Ministry of Health stock card • NCST -Monthly Report Form • **Module Evaluation Form** for **Module 5** • **Participant Manual—Module 5** • **District Health Information System –Version 2 (DHIS2) User's Guide** • **Laptop computers (to practice using DHIS2)**
Advance preparation	• Review PowerPoint slides for Module 5 • Review Participants Manual—Module 5 • If possible, review data collection forms used in TB, ART, ANC/PMTCT and OPD

5.0 Module Introduction (30 minutes)

- Show Module 5 heading on **Slide 5.1.**



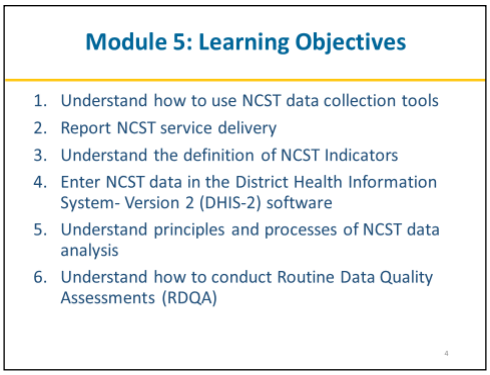
- Explain the following: This module describes tools and indicators that will be used to monitor individual clients in nutrition care, support, and treatment (NCST). The module also describes how to analyse and report NCST service data at the health facility and district level.

Review (20 minutes)

- Ask the participants to stand in a circle with a pen and paper.
- Ask each participant to write one data-related question about NCST. The question can cover any of the modules already discussed, such as nutrition assessment, nutrition counselling, or nutrition care and support.
- Instruct the participants to fold the paper with the question so it cannot be seen and then pass the paper to any person standing on their left.
- Ask the participants to keep passing the paper to the left in random fashion until you say 'Stop!' (after about 15 seconds). Make sure everyone has a paper in their hand.
- Ask one participant to read the question on the paper. 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 all questions are asked and answered.

Module objectives (10 minutes)

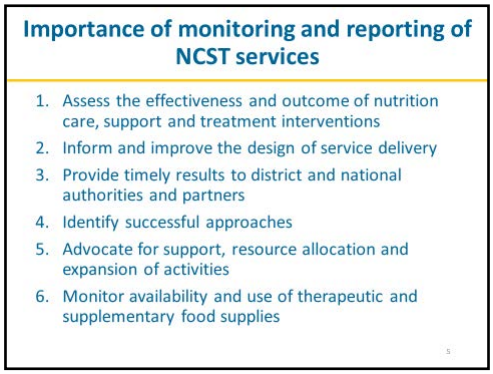
- Show the module objectives on **Slide 5.2.**



5.1 Purpose of Recording NCST Data (20 minutes)

BRAINSTORM: Why is it important to monitor and report on NCST services?

- Ask participants: 'Why should health care workers routinely monitor and report on NCST service delivery'? Write the responses on a flipchart.
- Review **Slide 5.3** with participants.



- Refer participants to **Reference 5.0** (also shown below). Ask one volunteer to read through the competencies and standards for monitoring and reporting in NCST.

Reference 5.0: NCST Competencies and Standards for Monitoring and Reporting of NCST Service Delivery

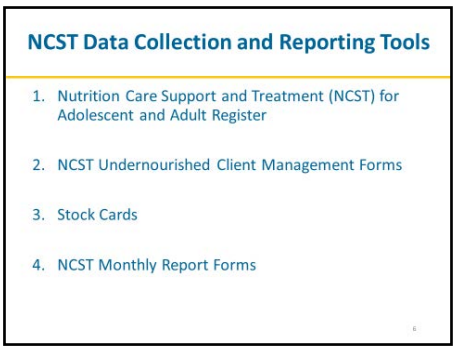
Competence can be defined as the ability to apply knowledge and skills to produce a required nutrition outcome.

Competency standards are the range of skills that are needed to achieve a desired nutrition outcome.

Competency	Minimum Standards
Monitor and report on adolescents and adults receiving nutrition assessment, counselling, and support	Record client data in the adult and adolescent nutrition register
	Monitor severely and moderately undernourished clients using the client management forms
	Prepare and submit the NCST monthly report

5.2 NCST Data Collection and Reporting Tools (3 hours)

- Show **Slide 5.4**.



- Explain the following:
  - Adolescent and adult clients visiting the health facility to receive health services should continue to be monitored using the existing standard MOH electronic data system and manual registers.
  - It is important that information on nutrition assessment, counselling, and therapeutic and supplementary food support is captured and reported using the nutrition data collection and reporting tools.
  - This module will explain in detail how to use key NCST data collection and reporting tools.

PRACTICE: NCST for Adolescent and Adult Register (1 hour)

- Refer participants to **Reference 5.1: NCST Adolescent and Adult Register** in the Participant Manual (also see below).
- Explain the following points:
  - The NCST adolescent and adult register is used to record clients' nutrition assessment and classification information. The register is also used to record whether the assessed client is provided with nutrition counselling or referred for therapeutic or supplementary food.
  - Each contact point providing nutrition assessment (e.g., ART, ANC/PMTCT, or TB) should have one adolescent and adult nutrition client register.
  - The NCST adolescent and adult register should be used every day to record information during client visits. The data should be aggregated at the end of each month. If a client visits the clinic more than once in a month, data should only be captured once.
- Ask participants: 'Who will be responsible for completing the information at the health facility level'? Write the responses on a flipchart.
- Refer participants to **Reference 5.2: How to Use the NCST Adolescent and Adult Register**.
- Ask volunteers to read aloud (in turns) the data elements in the NCST adolescent and adult register.

Reference 5.1: NCST Adolescent and Adult Register

Health Contact point/Clinic: _____Month: _____ Year: _____

No.	Programme # (ART/ANC/ PMTCT/TB etc.)	Date	Client Name	Sex (M/F)	Adolescent (15–18 years) ☑	Adult (19 years or older) ☑	Pregnant/lactating up to 6 months postpartum ☑	Bilateral pitting oedema (0, +, ++, +++)	Weight (kg)	Weight loss or gain? (change in kg since last visit)	Height (cm)	BMI	BMI-for-age	MUAC (cm)	Complications (Y/N)	Counselled on diet? (Y/N)	Referred for therapeutic or supplementary food? (Y/N)	HIV Status ☑			Classification of Nutritional Status ☑				Next Appointment Date (Should be the same as the next appointment date for HIV, TB, ANC/PMTCT, or other health service)
																		+	–	Unknown	Severe	Moderate	Normal	Overweight or obese	
TOTALS																									

Reference 5.2: How to Use the NCST Adolescent and Adult Register

Instructions on what should be recorded	
Month	Month in which information is recorded
Year	Year in which the information/data are recorded
No.	The client's registration number
Programme # (ART/ANC/PMTCT/TB etc.)	The client's programme specific number (e.g., if at an ART clinic, the ART number; if at a TB clinic, the TB number)
Date	The date on which nutrition services are provided
Client name	The client's first name and surname
Sex	Write M for male or F for female
Adolescent (15–18 years)	Tick (✓) if the client is 15–18 years of age
Adult	Tick (✓) if the client is 19 years or older
Pregnant/lactating up to 6 months postpartum	Tick (✓) if the client is a pregnant or lactating woman up to 6 months postpartum
Bilateral pitting oedema	Write (**0**) if the client has no bilateral pitting oedema; (**+**) if the client has oedema on both feet and ankles; (**++**) if oedema is in both feet plus lower legs, hands, and/or lower arms; (**+++)** if oedema is generalized, including both feet, legs, arms, and face
Weight	Write the client's weight in kg to one decimal point (e.g., 25.7 kg)
Weight loss or gain	Write the client's weight change in kg since the last visit. If client has gained weight, indicate change with a + sign (e.g., +1.3 kg); if client has lost weight indicate with a – sign (e.g., –2.2 kg)
Height	Write height in cm to one decimal point (e.g., 165.8 cm)
Body mass index (BMI)	Write the BMI of the adult client (≥19 years) who is not pregnant or lactating up to 6 months postpartum (e.g., 25.6)
BMI-for-age	Write the colour that the BMI-for-age of the adolescent client (15–18 years) is within (e.g., red, orange, green or purple)
Mid-upper arm circumference (MUAC)	Write the MUAC in cm (e.g., 23.5 cm). MUAC should only be measured for pregnant women, lactating women up to 6 months, or adult and adolescent clients who are too ill to have their height taken.
Complications	Write **Y** (yes) if the client has complications and **N** (no) if client has no medical complications
Counselled on diet	Write **Y** (yes) if the client received nutrition counselling and **N** (no) if client did not receive nutrition counselling
Referred for therapeutic or supplementary food?	Write **Y** (yes) if the client was referred for therapeutic or supplementary food and **N** (no) if client was not referred for therapeutic or supplementary food
HIV status	Tick (✓) on the appropriate box: positive (+), negative (–), or unknown
Classification of nutritional status	Tick (✓) on the appropriate box, based on the client's nutritional status: severe, moderate, normal, or overweight/ obese
Next appointment	Write the client's next appointment date, which should be on the same date as the next HIV, TB, or ANC/PMTCT appointment
Totals	Total of data entered on a particular page

PRACTICE: Completing the NCST Adolescent and Adult Register

- Ask the participants to break into pairs and refer them to **Exercise 5.1: NCST Adolescent and Adult Register—ART Clinic at Mbera Health Centre**. Explain that the register contains information on five adult PLHIV attending the ART clinic at Mbera Health Centre. This information is also provided in the box below.

Exercise 5.1: NCST Adolescent and Adult Register—ART Clinic at Mbera Health Centre

Use the information below on the clients seen during the month of July 2016 at Mbera Health Centre's ART clinic to fill in the NCST register.

11. Chifundo Phiri, HIV-positive woman, attends ART clinic on July 5, age 27, height is 166.0 cm, weighs 72.4 kg, MUAC 29.6 cm, no bilateral pitting oedema or other medical complications, lost 1 kg since the last visit. Received nutrition counselling.

12. Stanley Chimwemwe, HIV-positive man, attends the ART clinic on July 7, age 46, height is 160.0 cm, weighs 60.0 kg, no weight change since the last visit, MUAC 25.0 cm, no bilateral pitting oedema or other medical complications.

13. Elizabeth Mphatso, HIV-positive woman, attends the ART clinic on July 7, age 19, height is 164.0 cm, weighs 45.0 kg, has gained 0.5 kg since the last visit, MUAC 20.5 cm, no bilateral pitting oedema or other medical complications. Received nutrition counselling.

14. Blessings Moyo, HIV-positive man, attends the ART clinic on July 7, age 26, height is 178.0 cm, weighs 84.0 kg, gained 1 kg since the last visit, MUAC 24.0 cm, no bilateral pitting oedema or other medical complications. Received nutrition counselling.

15. David Banda, HIV-positive man, attends the ART clinic on July 8, age 19, height is 157.0 cm, weighs 38.5 kg, no weight change since the last visit, MUAC 18.3 cm, no bilateral pitting oedema or other medical complications. Received nutrition counselling.

- Give the participants about 15 minutes. When the participants have completed the exercise, ask one or two pairs to present their results while the other pairs fill in gaps. The correct answers appear in the form below.

Answers to Exercise 5.1: NCST Adolescent and Adult Register—ART Clinic at Mbera Health Centre

Health Contact Point/Clinic: _____ART Clinic_____ **Month:** _____July ____ **Year:** _____2016_____

OPD No.	Program # (ART/ANC/ PMTCT/ TB. etc.)	Date	Client Name	Sex (M/F)	Adolescents (15–18 years)	Adults (≥ 19 years)	Pregnant/ ≤ 6 months post-partum	Bilateral pitting oedema (0, +, ++, +++)	Weight (kg)	Weight loss or gain? (change in kg since last visit)	Height (cm)	BMI	BMI-for-age z-score	MUAC (cm)	Complications (Y/N)?	Counselled on diet? (Y/N)	Referred for therapeutic or supplementary food (Y/N)?	HIV status			Classification of Nutritional Status				
																		+	–	Unknown	Severe (Inpatient)	Severe (Outpatient)	Moderate	Normal	Overweight or obese
	ART	5/7/2016	Chifundo Phiri	F		✓		0	72.4	-1	166.0	26.5		29.6	N	Y		✓							✓
	ART	7/7/2016	Stanley Chimwemwe	M		✓		0	60.0	0	160.0	23.5		25.0	N	N		✓						✓	
	ART	7/7/2016	Elizabeth Mphatso	F		✓		0	45.0	+0.5	164.0	16.8		20.5	N	Y	Y	✓					✓		
	ART	7/7/2016	Blessings Moyo	M		✓		0	84.0	+1	178.0	26.5		24.0	N	Y		✓							✓
	ART	8/7/2016	David Banda	M		✓		0	38.5	0	157.0	15.6		18.3	N	Y	Y	✓				✓			
TOTALS						**5**										**3**	**2**				**0**	**1**	**1**	**1**	**2**

PRACTICE: NCST Undernourished Client Management Form (1 hour)

- Refer participants to **Reference 5.3: NCST Undernourished Client Management Form** in the Participant Manual (also appears below).
- Tell the participants that the NCST Undernourished Client Management Form is used to monitor nutritional status, the amount of therapeutic and supplementary food provided to the client during each visit, and patient outcomes: recovered, defaulted, died, non-recovered, or transferred.
- Explain the following:
  - A client management form is needed for each severely or moderately undernourished client.
  - Clients with severe or moderate undernutrition need close monitoring to determine the progress of treatment, appropriately respond in case of a sudden deterioration, and to follow up clients who miss appointments.
  - The client management forms should be kept at the facility-designated point where clients with severe and moderate undernutrition are treated.
  - To avoid double-counting patients, it is important that each facility has one point where severely and moderately undernourished cases are monitored
  - The form should be used to monitor clients' nutritional status during the entire treatment period.
- Refer participants to **Reference 5.4: How to Use the NCST Undernourished Client Management Form** and ask for volunteers to read aloud (in turns) the data elements provided.
- When participants are finished with the review, discuss and answer any questions.

Reference 5.3: NCST Undernourished Client Management Form

Name: _____ Type of Service (Entry Point)/Referred from (*tick one* ☑): ☐ANC/PMTCT ☐ART ☐TB/DOTS ☐OPD ☐Other_____

Client #: _____ Sex (*tick one* ☑): ☐M ☐F Age (*tick one* ☑): ☐15–18 years ☐19+ years (*Tick one* ☑): ☐ Pregnant ☐ Lactating (up to 6 months postpartum)

Village: _____ Date Admitted to Treatment/Nutrition Support: _____ Date of Exit from Treatment/Nutrition Support: _____

Visit no.	Date	Weight (kg)*	Amount of weight lost since last visit	Amount of weight gained per month since last visit	Height (cm)**	BMI	BMI for-age	MUAC (cm)***	Does client have appetite? (Y/N)	Bilateral pitting oedema (0, +, ++, +++)	Medical complications? (Y/N)	Dietary assessment conducted? (Y/N)	Counselled on diet	Referred for ES/L/FS support? (Y/N)	Nutritional status ☑					Therapeutic or supplementary food given at each visit			Exit reason ☑					Next appointment date
															Severe (inpatient)	Severe (outpatient)	Moderate	Normal	Overweight or obese	RUTF (sachets)	Likuni Phala or CSB++ (kg)	Vegetable oil (litres)	Recovered (transitioned to another care plan)	Defaulted (lost to follow-up)	Died	Non-recovered (treatment failure)	Transferred Out	

* **Weight** should be taken at every visit

** **Height**: If client is 15–18 years (adolescent), measure at every visit. If client is ≥ 19 years (adult), measure height ONLY once.

*** **MUAC:** Only measure if the client is a pregnant woman, a lactating woman up to 6 months post-partum, or a non-pregnant/non-lactating (up to 6 months post-partum) adolescent or adult client who is too ill to have their height taken.

Definition of Terms

Recovered (transitioned to another care plan): Client reached the target BMI, BMI-for-age z-score, or MUAC and moved to another care plan.

Defaulted (lost to follow-up): Client did not return for two consecutive visits after the last appointment.

Died: Client died while receiving NCST services.

Non-recovered (treatment failure): Client failed to attain the targeted transition BMI, BMI-for-age z-score, or MUAC within 4 months.

Transferred out: Client left the health facility to continue with care at another facility.

Reference 5.4: How to Use NCST Undernourished Client Management Form

1) Information recorded on the day of admission to treatment of undernutrition	
Name	The client's first name and surname
Type of service (entry point)/referred from	The service or point from which the client was referred (e.g., ART, pre-ART, TB, ANC/PMTCT, Teens Club)
Client #	The client's number from the programme where he/she was referred from
Sex	Tick (✓) M for male and F for female
Age	Tick (✓) the client's age category
Pregnant or lactating up to 6 months postpartum	Tick (✓) as appropriate if client is pregnant or lactating up to 6 months post-partum
Village	Name of the village and landmark if possible for easy client tracing
Date admitted to treatment/nutrition support	Write the date when the client starts to receive treatment for severe or moderate undernutrition
2) Information recorded during each client visit	
Date	Write the date when the nutrition services are provided to the client
Weight	Write the client's weight in kg to one decimal point (e.g., 25.7 kg)
Amount of weight lost since last visit	If the client lost any weight, write the amount of weight lost since the last visit in kg to one decimal point (e.g., 1.3 kg); if the client did not lose any weight, write 0
Amount of weight gained (per month) since last visit	If the client gained weight, write the average amount of weight gained per month since the last visit in kg to one decimal point (e.g., 0.9 kg); if the client did not gain any weight, write 0
Height	Write height in cm to one decimal point (e.g., 165.8 cm)
Body mass index (BMI)	Write the BMI of the adult client (≥19 years) who is not pregnant or lactating up to 6 months post-partum (e.g., 25.6)
BMI-for-age	Write the BMI-for-age range for the adolescent client (15–18 years) (e.g., <14.4, 13.2–14.3, 20.8–24.9, ≥ 28.2, etc.)
Mid-upper arm circumference (MUAC)	Write MUAC in cm (e.g., 23.5 cm). MUAC should only be measured for pregnant women, lactating women up to 6 months post-partum, or adult and adolescent clients who are too ill to have their height taken.
Does client have appetite?	Write **Y** (yes) if the client has appetite and **N** (no) if client has no appetite; make sure you conduct an RUTF appetite test if a client is severely undernourished
Bilateral pitting oedema	Write (**0**) if the client has no bilateral pitting oedema; (**+**) if the client has oedema on both feet and ankles; (**++**) if oedema is in both feet plus lower legs, hands, and/or lower arms; (**+++)** if oedema is generalized, including both feet, legs, arms, and face
Medical complications	Write **Y** (yes) if the client has complications and **N** (no) if client has no medical complications
Dietary assessment conducted	Write **Y** (yes) if a dietary assessment was done and **N** (no) if a dietary assessment was not done
Counselled on diet	Write **Y** (yes) if the client received nutrition counselling and **N** (no) if client did not receive nutrition counselling
Referred for economic strengthening, livelihoods, and food security (ES/L/FS) support?	Write **Y** (yes) if the client was referred for ES/L/FS and **N** (no) if client was not referred for ES/L/FS
Classification of nutritional status	Tick (✓) on the appropriate box, based on the client's nutritional status: severe (inpatient), severe (outpatient), moderate, normal, or overweight/obese
Therapeutic or supplementary food given at each visit	Write the amount of therapeutic and/or supplementary food given to the client at each visit, e.g., RUTF, Likuni Phala or CSB+, vegetable oil
3) Information recorded when the client exits from treatment of severe or moderate undernutrition	
Exit reason	Tick (✓) the client's reason for exit. Definitions of exit reasons: - **Recovered (transitioned to another care plan):** Client reached the target BMI, BMI-for-age z-score, or MUAC and moved to another care plan - **Defaulted (lost to follow-up):** Client did not return for two consecutive visits after the last appointment - **Died:** Client died while receiving NCST services

	- **Non-recovered (treatment failure):** Client failed to attain the targeted transition BMI, BMI-for-age z-score, or MUAC within 4 months - **Transferred out:** Client left the health facility to continue with care at another facility
Date of exit from treatment/nutrition support	Write the date when the client exits from treatment of moderate undernutrition; clients admitted with severe undernutrition should exit from treatment after they recover from moderate undernutrition

PRACTICE: Completing the NCST Undernourished Client Management Form

- Ask the participants to break into pairs and refer them back to **Exercise 5.1: NCST Undernourished Client Management Form—ART Clinic at Mbera Health Centre**. Ask the pairs to use the information from the register to identify the two undernourished clients (Elizabeth Mphatso [moderately undernourished] and David Banda [severely undernourished]) and complete a client management form for each client.
- When participants are finished with the exercise, discuss and answer any questions during plenary.

Stock Card

BRAINSTORM: What is the importance of the stock card? Who fills it out?

- Ask participants: 'What is the importance of the stock card'? Write the responses on a flipchart.
- Refer participants to **Reference 5.5: Stock Card** in the **Participant Manual** (also appears below).
- Explain that the service provider responsible for issuing therapeutic and supplementary food to clients should always record the amount issued on the stock card.
- Ask one participant to read the columns aloud. When the participant finishes, explain the following:
  - To manage therapeutic and supplementary food, the health facility storekeeper should issue a stock card for each food commodity available for NCST. For example, the CSB+, vegetable oil, and RUTF should each have its own stock card.
  - The stock card is used to register the 'in' and 'out' flow of food commodities in the store room. The stock card should be always up to date, and the balance between 'in' and 'out' should equal the physical count of food commodities in the store room.
  - The quantity out for the month should be determined by the total number of cases (total at start of the month plus new admissions) and the amount of therapeutic or supplementary food issued to each client for the month.

Reference 5.5: Stock Card

Commodity/Item Name: _____

Date	Reference Number	Unit Measure	In	Out	Balance	Storekeeper's Name	Storekeeper's Signature

NCST Monthly Report

- Refer participants to **Reference 5.6: NCST for Adolescent and Adult Monthly Report** in the Participant Manual (also appears below).

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

- Ask the participants: 'Where does the information recorded on the monthly report come from'? Record their responses on a flipchart.
- Explain the following:
  - The information in the monthly report can be obtained from the NCST register and the undernourished client management form.
  - Use the adult and adolescent register to complete the first part of monthly report.
  - Use the client management forms to finish the severe undernutrition and moderate undernutrition sections of the monthly report.
  - Participants will fill out the therapeutic and supplementary food supplies section of the monthly report later in this module.

PRACTICE: Completing the NCST Monthly Report

- Refer participants to **Reference 5.7: Definition of NCST Monthly Report Indicators** and ask volunteers to read aloud (in turns) the data elements provided.
- When participants are finished, discuss and answer any questions.

Reference 5.6: NCST Report Form

Indicator	Pre-ART/ART	TB	ANC/PMTC	OPD	Other
1) Total who received health services (HIV, TB, ANC/PMTCT, OPD):					
2) Total who received nutrition assessment at contact point:					
a) Of those assessed # with **severe undernutrition**					
b) Of those assessed # with **moderate undernutrition**					
c) Of those assessed # with **normal nutritional status**					
d) Of those assessed # who are **overweight/obese**					
3) Total who received nutrition counselling at contact point:					

		Total at the start of the month (Old cases) (A)	New admissions (B)	Total in treatment (Old + New) (C)=A+B	EXITS						Total at the end of the month (J)	Total who received therapeutic and/or supplementary food
					Recovered (transitioned) (D)	Default (lost to follow-up) (E)	Died (F)	Non-recovered (treatment failure) (G)	Transferred out (H)	TOTAL Exits (I) = D+E+F+G+H		
Severe Undernutrition in Adolescents (15–18 years) and Adults (19 years or older)	Adolescents 15–18 years											
	Adults 19 years or older											
	Pregnant/lactating women*											
	TOTAL											
Moderate Undernutrition in Adolescents (15–18 years) and Adults (19 years or older)	Adolescents 15–18 years											
	Adults 19 years or older											
	Pregnant/lactating women*											
	TOTAL											

	Commodity	Packaging and unit	Stock on the first day of the month	Deliveries received in the month	Quantity distributed to beneficiaries	Quantity used for cooking demonstration	Quantity lost	Stock on the last day of the month	Request for the following month
Therapeutic and Supplementary Food Supplies	RUTF	Sachets							
	F-75	Sachets/tins							
	F-100	Sachets/tins							
	CSB+/Likuni Phala	Kg							
	Vitameal	Kg							
	Vegetable oil	L (litres)							
	Other specify_____								

***** Up to 6 months post-partum

Reference 5.7: Definition of NCST Monthly Report Indicators

1. General NCST Indicators

To report on the nutrition indicators listed in this section, you will need to use the adolescent and adult nutrition registers. The number of clients who receive health services can be found in the respective HIV, TB, or ANC/PMTCT monthly registers or reports.

Indicator	Definition
Total number who received health services (HIV, TB, ANC/PMTCT)	The number of adolescent and adult clients who received HIV, TB, or ANC/PMTCT services at any point during the reporting month.
Total who received nutrition assessment at contact point	The number of adolescent and adult clients in care and treatment who were nutritionally assessed during the reporting period. Nutrition assessment means anthropometric measurement, which includes calculation of BMI for non-pregnant adults, BMI-for-age z-score for adolescents, and MUAC and weight gain for pregnant women.
Total who received nutrition counselling at contact point	The number of clients in care and treatment who were nutritionally assessed and also received nutrition counselling at any point during the reporting period. Nutrition counselling is individual, active, one-on-one counselling in which a service provider and client discuss the client's individual dietary practices, preferences, constraints, and options; ask and answer questions; and identify feasible actions to improve dietary practices.

2. Indicators to Monitor Treatment of Severe and Moderate Undernutrition

To report on severely and moderately undernourished client indicators listed in this section, you will need to use the undernourished client management forms.

Indicator	Definition
Total at the start of the month	Total number of clients who are receiving treatment for severe (inpatient or outpatient) or moderate undernutrition on the first day of the reporting month. Total at the start of the month **=** total at the end of the month of the previous month.
New admissions	Clients who meet the criteria for severe or moderate undernutrition and begin treatment in a particular month. Admissions also include clients who are **'transferred in'** from another health facility where they were receiving treatment and clients within the same healthy facility who have transitioned either from severe undernutrition to moderate undernutrition or from moderate undernutrition to severe undernutrition.
Exits	Clients who leave treatment for severe or moderate undernutrition. Clients exiting from treatment are classified as **recovered** (transitioned to another care plan), **defaulted** (lost to follow-up), **died**, **non-recovered** (treatment failure), or **'transferred out'** to another facility.
Recovered (transitioned to another care plan)	Clients who exit from treatment for severe or moderate undernutrition after reaching the target BMI, BMI-for-age z-score, or MUAC. If a patient recovers from severe undernutrition and moves to the care plan for moderate undernutrition, he or she is considered an admission in the care plan for moderate undernutrition.
Defaulted (lost to follow-up)	Clients who have not returned for NCST services and are not known to have been transferred to another facility or to have died. A client is defined as a defaulter if she or he does not return for services for two consecutive visits/appointments.
Died	There is a reliable report of the NCST client's death, regardless of the cause.
Non-recovered (treatment failure)	A client exits from treatment for severe or moderate undernutrition after failing to reach the targeted BMI, BMI-for-age z-score, MUAC, or weight gain, as appropriate, within 4 months. Before treatment is considered as failed, all social, economic, and medical factors should have been considered and addressed.
Transferred	**'Transferred out'** refers to clients who have left the facility for another facility where they will continue to receive therapeutic and/or supplementary food. 'Transferred out' also includes moderately undernourished clients whose condition deteriorates and are transferred to treatment for severe undernutrition. 'Transferred out' clients should be considered as exits. **'Transferred in'** clients come to the facility from another facility where they received therapeutic and/or supplementary food. 'Transferred in' clients should be considered admissions in the facility where treatment is continued.
Total at the end of the month	Total number of clients who are receiving treatment for severe or moderate undernutrition on the last day of the reporting month. Total at the end of the month **=** total at the start of the month **+** admissions **–** exits.

Total who receive therapeutic or supplementary food	The number of severely or moderately undernourished adolescent and adult clients who received therapeutic and/or supplementary food at any point during the reporting month. 'Therapeutic foods' are foods designed for the management of severe undernutrition, including RUTF (also known as Chiponde), an energy-dense, fortified peanut-based paste locally produced in Malawi. RUTF is nutritionally equivalent to F-100 therapeutic milk. 'Supplementary foods', used to manage mild and moderate undernutrition, are primarily fortified blended foods (e.g., CSB, commonly known as Likuni Phala or CSB +).

PRACTICE: Reviewing a sample completed NCST Monthly Report (Mbonera Health Centre)

- Refer participants to **Exercise 5.2: NCST Monthly Report for Mbonera Health Centre** in the Participant Manual (also appears below).
- Ask participants to form pairs and check for errors in the NCST monthly report. Give the pairs about 10 minutes for the exercise.
- When the participants have finished reviewing the report, ask the following questions:
  - What problems have you identified in this report?
  - What do you observe in the severe and moderate undernutrition section of the report?
  - How should the quantity distributed to beneficiaries (in the therapeutic food supplies section) be calculated?
- Refer the participants to the severe and moderate undernutrition sections of the monthly report. Explain the following:
  - The total number of clients assessed and classified with severe or moderate undernutrition in pre-ART/ART, TB, ANC/PMTCT, OPD or other should equal the total # of new admissions with severe undernutrition or total # of new admissions with moderate undernutrition
- Refer the participants to the therapeutic and supplementary food supplies section of the monthly report.
- Give participants 10 minutes and ask them to answer the questions on exercise 5.2. (Also provided below with answers).
- When finished, review the answers with the participants.

Exercise 5.2: Questions

- How many severely undernourished clients did Mbonera Health Centre have during the reporting month?

  Answer: 36

- If there were no deliveries of Supercereal and RUTF in that month, and the facility only had 3,500 sachets of RUTF from the previous month, how much RUTF will be distributed to the beneficiaries?

  Answer: (38*6*7*2) = 3,192

Remind participants that an individual with severe undernutrition will require 6 sachets per day for 14 days (2 weeks) before he/she returns for the follow-up visit.

- How many moderately undernourished clients did Mbonera have during the month?

  Answer: 107

- If the facility had no CSB+/Likuni Phala and vegetable oil in stock on the first day of the month, how much CSB+ and vegetable oil would the facility have required during the month?

  Answer: (107*300*30)/1,000=963 kgs CSB+ and (107*33.3*30)/1,000= 106.8 (or 107) litres of vegetable oil
  Remind participants that an individual with moderate undernutrition will require 300 grams per day (or 9 kgs per month) of CSB and 33.3 mls per day (or about 1 litre per month) of vegetable oil

- How much RUTF, CSB+, and vegetable oil should the facility request for the next month?

  Explain to participants that they should base requests for the following month on total admissions at the end of the month

Exercise 5.2: Monthly Report for Mbonera Health Centre

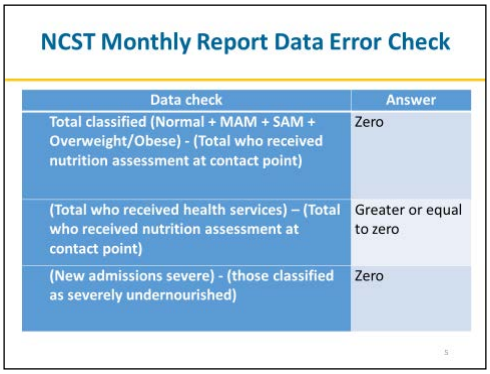
Indicator	Pre-ART/ART	TB	ANC/PMTC	OPD	Other
1) Total who received health services (HIV, TB, ANC/PMTCT, OPD):	75	5	15	201	0
2) Total who received nutrition assessment at contact point:	66	4	15	60	0
a) Of those assessed # with **severe undernutrition**	10	2	0	1	0
b) Of those assessed # with **moderate undernutrition**	20	1	1	55	0
c) Of those assessed # with **normal nutritional status**	30	1	14	3	0
d) Of those assessed # who are **overweight/obese**	6	0	0	1	0
3) Total who received nutrition counselling at contact point:	75	4	13	17	0

		Total at the start of the month (Old cases) (A)	New Admissions (B)	Total in treatment (Old + New) (C)=A+B	EXITS						Total at the end of the month (J)	Total who received therapeutic and/or supplementary food
					Recovered (transitioned) (D)	Default (lost to follow-up) (E)	Died (F)	Non-recovered (treatment failure) (G)	Transferred out (H)	TOTAL Exits (I) = D+E+F+G+H		
Severe Undernutrition in Adolescents (15–18 years) and Adults (19 years or older)	Adolescents 15–18 years	3	7	**10**	2	1	0	0	0	3	7	**10**
	Adults 19 years or older	21	6	**27**	16	0	0	0	0	16	11	**27**
	Pregnant/lactating women*	1	0	**2**	0	0	0	0	0	0	1	**0**
	TOTAL	**23**	**13**	**36**	**18**	**1**	**0**	**0**	**0**	**19**	**19**	**36**
Moderate Undernutrition in Adolescents (15–18 years) and Adults (19 years or older)	Adolescents 15–18 years	4	20	**24**	1	0	0	0	0	1	23	0
	Adults 19 years or older	24	56	**80**	20	0	0	0	0	20	60	0
	Pregnant/lactating women*	2	1	**3**	0	0	0	0	0	0	3	0
	TOTAL	**30**	**77**	**107**	**21**	**0**	**0**	**0**	**0**	**21**	**86**	0

	Commodity	Packaging and unit	Stock on the first day of the month	Deliveries received in the month	Quantity distributed to beneficiaries	Quantity used for cooking demonstration	Quantity lost	Stock on the last day of the month	Request for the following month
Therapeutic and Supplementary Food Supplies	RUTF	Sachets							
	F-75	Sachets/tins							
	F-100	Sachets/tins							
	CSB+/Likuni Phala	Kg							
	Vitameal	Kg							
	Vegetable oil	L (litres)							
	Other specify_____								

***** Up to 6 months postpartum

- Show **Slide 5.5** and summarise by reviewing the NCST monthly report data error check with participants.



5.3 Coordinating Data and Reports from ART, ANC/PMTCT, TB, and OPD Service Delivery Points (30 minutes)

REVIEW: Where does the information on assessment come from? Where is it documented? Who fills it out?

- Note participants' responses on the flipchart.
- Explain that the assessment data come from the service delivery points of ANC/PMTCT, ART, TB, and OPD.
- Also explain to participants that for severely and moderately undernourished clients, the data should be collated by the nutrition focal point who is responsible for monitoring the client and issuing therapeutic and supplementary food commodities.

PRACTICE: Coordinating NCST data at health facility level

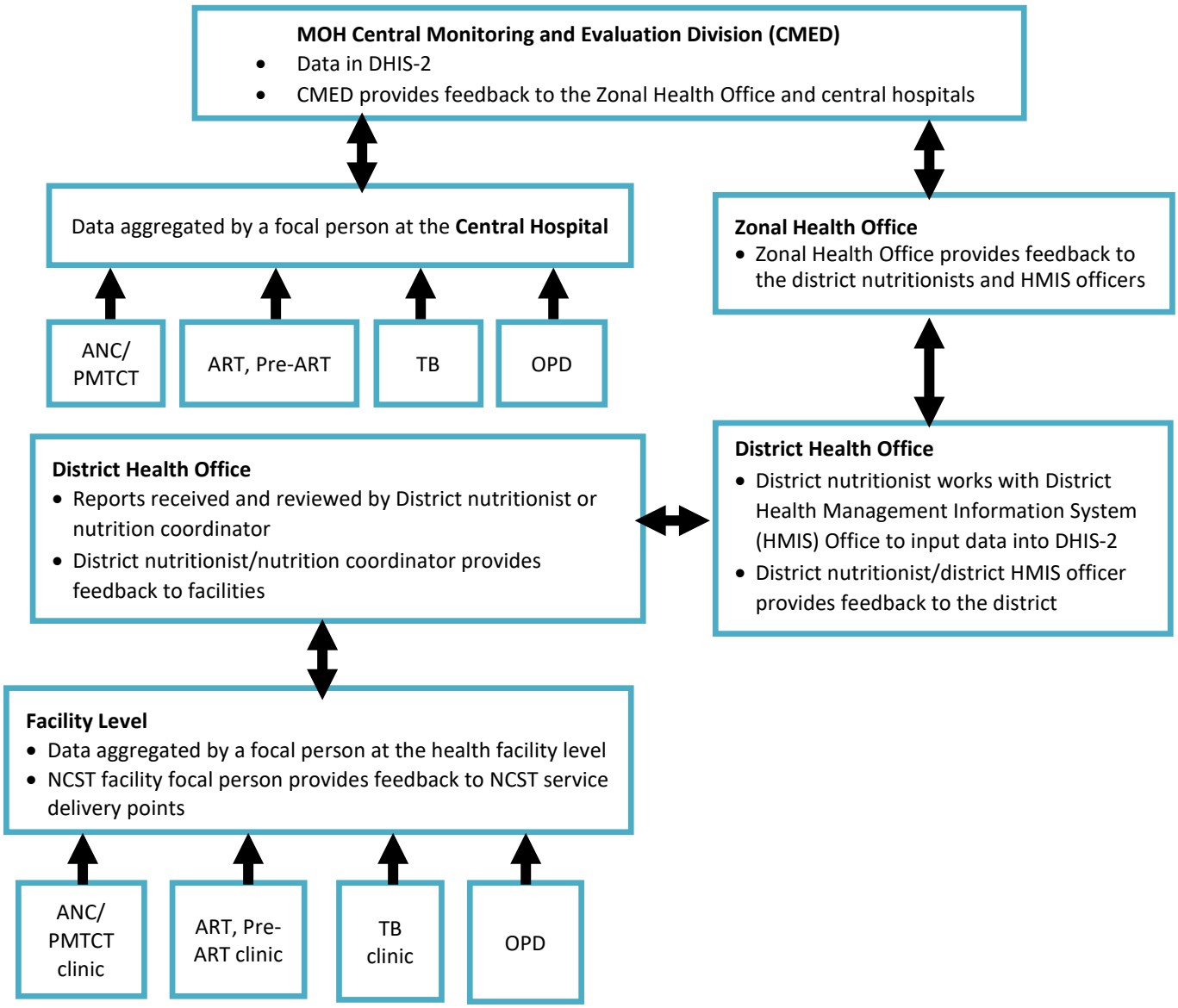
- Ask participants to form groups of 5–6 people based on their facility or district. Each group should have a representative from ART, TB, ANC/PMTCT, and OPD.
- Give the groups 15 minutes to discuss and answer the following three questions:
  1. How can we coordinate documentation of assessment and client management data in the NCST monthly report?
  2. How should the data generated in TB, ANC/PMTCT, ART, and OPD flow through to the nutrition focal person?
  3. How can ART, ANC/PMTCT, TB, and OPD work together with the nutrition focal person to complete the NCST monthly report?
- After the small group discussion, each group should present what they discussed.
- Summarise the discussion by explaining the following:

- Completion of the monthly report requires collaboration of nutrition focal person and the focal persons from each service delivery point where NCST services are provided, i.e., TB, ANC/PMTCT, ART, and OPD.
- The focal persons should schedule a monthly meeting to consolidate data on nutrition assessment and classification and cross-check for any inconsistencies between the NCST for Adolescent and Adult Registers used at each contact point with data completed in the Undernourished Client Management Forms.
- After the health facility team meeting, the nutrition focal person should finalise the NCST monthly report for submission to the facility in-charge and district level.

BRAINSTORM: How do data move from the point of generation (health facility) to the district and central level?

- Ask participants: 'How can NCST data be reported from the facility to national level'? Write responses on a flipchart.
- Show **Slide 5.6** and facilitate a discussion.

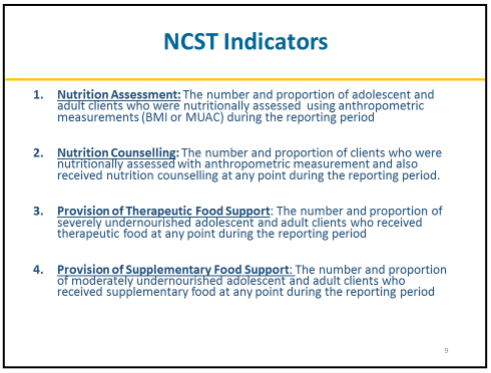
NCST Data Flow from Facility to National Level



5.4 NCST Indicators (45 minutes)

BRAINSTORM: What is an indicator?

- Ask participants: 'What is an indicator'? Write the responses on a flipchart.
- Explain that 'indicators' are ways of measuring (i.e., indicating) progress that NCST service delivery achieves, with 'progress' being determined by the aims and objectives.
- Explain that there are four main NCST indicators that facilities and districts will need to report on. Show **Slide 5.7**.



- Refer participants to **Reference 5.8: Definition of NCST Indicators** (also shown below) and give them 10 minutes to review the detailed definitions the four NCST indicators.
- When the participants are finished, review and answer any questions.

Reference 5.8: Definition of NCST Indicators

Indicator Name	Indicator Definition	Method of measurement and data collection
1. Nutrition assessment	The number and proportion of adolescent and adult clients in care and treatment who were nutritionally assessed during the reporting period Nutrition assessment means anthropometric measurement, which includes calculation of BMI for non-pregnant adults, BMI-for-age for adolescents, and MUAC and weight gain for pregnant women and lactating women up to 6 months post-partum	**Primary data source:** NCST Adolescent and Adult Register **Numerator**: Number of clients who had their nutritional status assessed and classified at ART, TB, ANC/PMTCT, or other contact point at any point during the reporting period **Denominator**: Total number of clients who attended the clinic (ART, TB, ANC/PMTCT, or other specified contact point) during the same reporting period **NOTE:** Count every client who received services at least once during the reporting period once in the denominator and once in the numerator if he or she received nutrition assessment at any point during the reporting period
2. Nutrition counselling	The number and proportion of clients in care and treatment who were nutritionally assessed with anthropometric measurement and received nutrition counselling at any point during the reporting period	**Primary data source**: NCST Adolescent and Adult Register **Numerator**: Number of clients, including adults, adolescents, and pregnant and lactating women, who received nutrition counselling during the reporting period **Denominator**: Total number of clients who received nutrition assessment during the same reporting period
3. Provision of therapeutic food support	The number and proportion of severely undernourished adolescent and adult clients who received therapeutic food at any point during the reporting period 'Therapeutic foods' are defined as foods designed for the management of severe undernutrition, include RUTF, also known as *Chiponde*, an energy-dense, fortified peanut-based paste locally produced in Malawi. RUTF is nutritionally equivalent to F-100 therapeutic milk.	**Primary data source**: Undernourished Client Management Form **Numerator:** Number of severely undernourished clients who received therapeutic food at any point during the reporting period **Denominator**: Number of clients who were nutritionally assessed and found to be severely undernourished, including those previously admitted for treatment of severe undernutrition (i.e., total severely undernourished at the start of the month + new admissions) **NOTE:** Count severely undernourished clients once in the denominator and once in the numerator (if they received the therapeutic food at least once during the reporting period)
4. Provision of supplementary food support	The number and proportion of moderately undernourished adolescent and adult clients who received supplementary food at any point during the reporting period 'Supplementary foods', used to manage mild and moderate undernutrition, are primarily fortified-blended foods (e.g., CSB, commonly known as *likuni phala* or CSB ++).	**Primary data source**: NCST Undernourished Client Management Form **Denominator**: Number of clients who were nutritionally assessed and found to be moderately undernourished, including those previously admitted for treatment of moderate undernutrition (i.e., total moderately undernourished at the start of the month + new admissions). **NOTE:** Count moderately undernourished clients in the denominator and once in the numerator (if they received the supplementary food at least once during the reporting period)

PRACTICE: Collecting and reporting NCST indicators

- Ask participants to return to their facility or district groups of 5–6 people.
- Refer participants to **Exercise 5.3: Collecting and Reporting NCST Indicators in the Participant Manual** (also shown below).
- Ask the groups to spend about 10 minutes completing the exercise. When they have finished, discuss the answers and answer any questions.

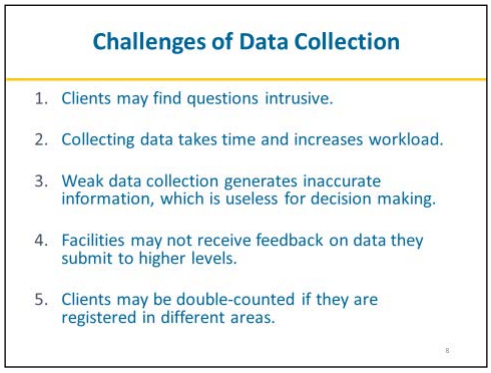
Exercise 5.3: Collecting and Reporting NCST Indicators

For each NCST indicator, write how the data will be collected, who will collect the data, and who will report the data.

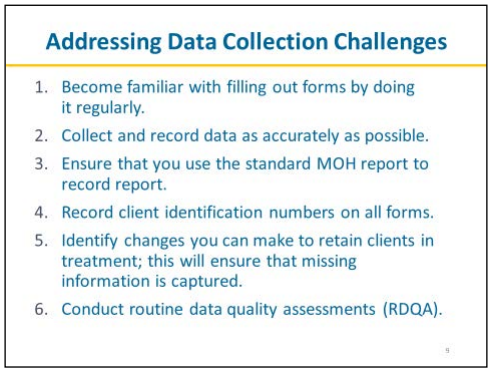
Indicator	How will the data be collected?	Who will collect which data?	Who will report the data?
1. # of clients who receive nutrition assessment *(non-pregnant/post-partum, pregnant/post-partum, 15–18 years, over 19 male or female)*			
2. # of clients classified with severe undernutrition			
3. # of clients classified with moderate undernutrition			
4. # of clients classified as normal nutritional status			
5. # of clients classified as overweight/obese			
6. # of clients who receive nutrition counselling *(non-pregnant/post-partum, pregnant/post-partum, 15–18 years, over 18, male or female)*			
7. # of clients who are severely and moderately undernourished who received therapeutic or supplementary food products *(non-pregnant/post-partum, pregnant/post-partum, 15–18 years, over 18, male or female)*			
8. # of sachets/boxes of specialised food products in stock			

BRAINSTORM: Challenges of data collection

- Ask participants: 'What challenges would you expect when collecting and reporting data coming from the different service delivery points'? List the responses on a flipchart and compare them to the information on **Slide 5.8.**



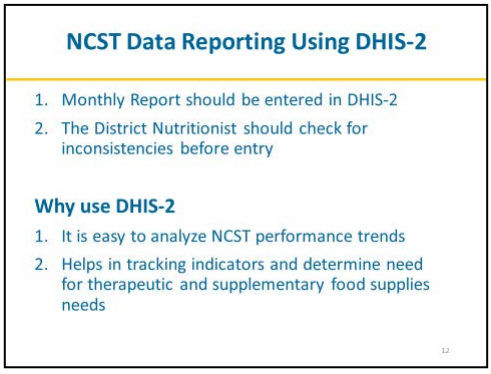
- Ask participants: 'How could these challenges be addressed'? List responses on a flipchart.
- Summarise by showing **Slide 5.9**.



5.5 Using District Health Information System—Version 2 (DHIS-2) to Report NCST Service Delivery (2 hours)

BRAINSTORM: Why is it important to enter NCST data in DHIS-2? How can DHOs use this information?

- Ask participants: 'Why is it important to enter NCST data in DHIS-2'? List the responses on a flipchart.
- Show Slide 5.10.



- Explain the following:
  - Data should be entered in DHIS-2 monthly. The data should come from the monthly report.
  - It is important that the report is cross-checked for any inconsistencies before it is entered. The report is entered at the HMIS office by the data clerk.
  - After data entry and analysis, the HMIS officer/nutritionist should:
  - Save the generated report.
    - Identify areas that are not being reported well or that need improvement and should plan to support the facilities.
    - Support the health facilities with coaches during mentoring visits. Share the report and congratulate them where they are doing well. Work with them on areas that need improvement.

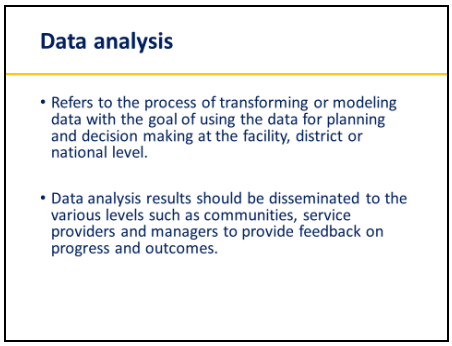
PRACTICE: How to enter and analyse NCST data using DHIS-2

- Ensure that each participant has access to a computer.
- Ask participants to go to the website: http://www.hispmalawi.org.mw/dhis and enter their log-in details.
- Refer to the *DHIS V.2 Quick User Guide* to practice using the DHIS-2, and ask them to follow th guide to practice using the DHIS2.

5.6 Data Analysis (1 Hour)

BRAINSTORM: What is data analysis? How can data be analysed?

- Ask participants: 'What does data analysis mean? How can NCST data be analysed?' List the responses on a flipchart**.**
- Show **Slide 5.11.**

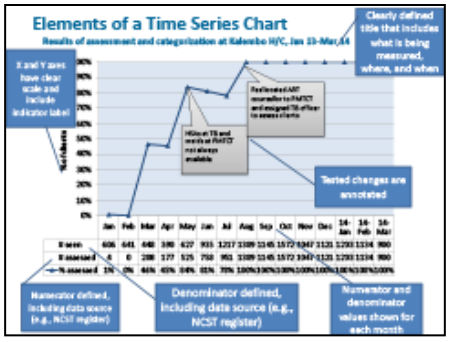


- Explain that the following service providers are responsible for analysing NCST data at the facility level:

- The health facility NCST quality improvement (QI) team
- The district nutritionist/nutrition coordinator, working with the district HMIS officer and district QI coaches

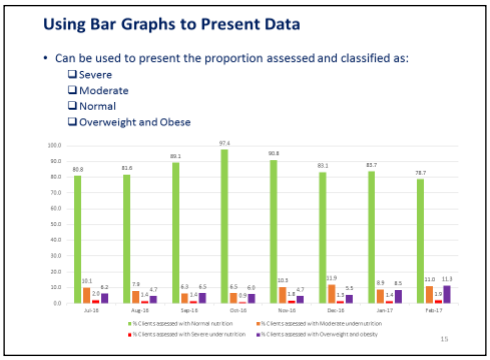
- Data should be analysed using run (or time series) charts and graphs clearly indicating the unit of measure and the denominator and numerator of each analysed NCST indicator.

- Show **Slide 5.12** and explain the elements of a run/time series chart. Be sure to note that a run/time series chart should have:
  - A clear, well-defined title on the top that includes what is being measured and when
  - X and Y axes that have a clear scale and include the indicator label
  - A numerator and denominator that are defined and include a data source
  - Values for the numerator and denominator shown for each month (or relevant period)



- Explain that the run/time series chart can be used to present data on the following NCST indicators:
  - Nutrition assessment
  - Nutrition counselling

- Show **Slide 5.13**.



- Explain that a bar graph can be used to present the nutrition classification of clients who receive nutrition assessment.

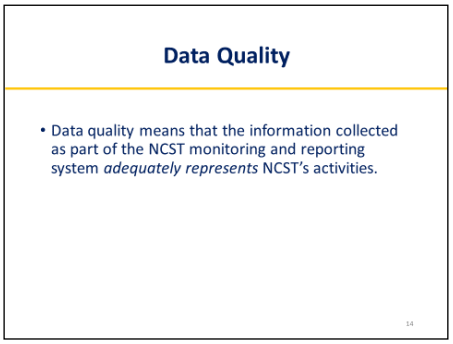
- Summarise the presentation by highlighting the following principles of data analysis:

- Data used for analysis should be complete and accurate.
- Data should be analysed using run/time series charts and graphs clearly indicating the unit of measure and the denominator and numerator of each analysed NCST indicator.
- Data analysis results should be disseminated and discussed with all facility staff at least every 2 weeks.
- Health facility staff and QI team members should develop, implement, and track action plans for NCST services using the data they generate and analyse.

5.7 Routine Data Quality Assessment (RDQA) (3 hours)

BRAINSTORM: Data quality

- Ask participants: 'What does "data quality" means? What are the key dimensions of data quality?' List the responses on a flipchart. Show **Slide 5.14.**



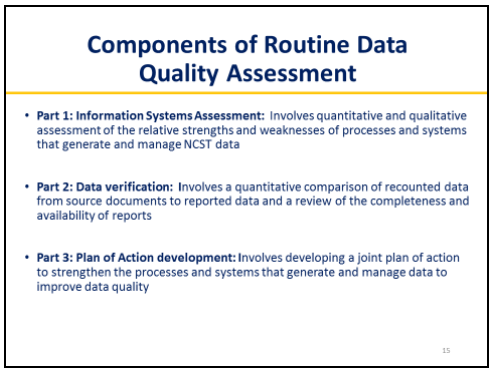
- Explain that to ensure that quality data are always available, facility and district level service providers and managers should institute routine data quality assessments (RDQA) with the following objectives:
  - **Assess** the ability of NCST information systems to collect, manage, and report quality data on NCST indicators.
  - **Verify** the quality of reported data at the health facility level.
  - **Take corrective measures** with action plans for strengthening the data management and reporting system and improving data quality.
- Refer participants to **Reference 5.9: Dimensions of Data Quality** (also provided below) and ask a volunteer to read through dimensions of data quality.

Reference 5.9: Dimensions of Data Quality

Dimension	Operational Definition
Main dimensions of data quality	
Accuracy/ Validity	Accurate data are considered correct: The data measure what they are intended to measure. Accurate data minimize error (e.g., recording bias) to a point of being negligible. For example, in NCST, weight should be measured to the nearest 0.1 kg.
Reliability	The NCST data generated through the NCST monitoring & reporting processes is based on protocols and procedures that do not change according to who is using them and when or how often they are used. In NCST, there are standardized data collection tools that should consistently be used.
Precision	This means that the data have sufficient detail. For example, when collecting data on nutrition assessment, the data lack precision if the client's age is not recorded.
Completeness	Completeness means that an information system from which the results are derived is appropriately inclusive: It represents the *complete* list of eligible persons, units, or data elements and not just a fraction of the list. For example, when capturing data in the Adolescent and Adult Nutrition Register, all required data elements must be recorded.
Timeliness	Data are timely when they are up-to-date (current) and when the information is available on time. For example, data in the Adolescent and Adult Nutrition Register must be recorded at the time of assessment; the NCST Monthly Report must be submitted by the 5th day following the end of the reporting month; and NCST data must be entered in DHIS-2 by the 15th day following the end of the reporting month.
Integrity	Data have integrity when the system used to generate them are protected from deliberate bias or manipulation for political or personal reasons.

PRESENTATION: Components of Routine Data Quality Assessment (RDQA)

- Show Slide 5.15 and review the three components of RDQA with participants.



- Explain that 10 steps need to be following when preparing and implementing RDQA:

1. **Form an RDQA team**: This should comprise the district HMIS officer, district data clerk responsible for nutrition, district nutritionist/nutrition coordinator, and all district NCST coaches.
2. **Assign a team leader** to lead the RDQA exercise; and a note taker for the DQA. The team leader should be the district HMIS officer.
3. **Select health facilities to be visited and develop an implementation plan:** At the start of implementing the RDQA, all health facilities that are implementing NCST

must be assessed. However, the frequency of subsequent RDQA for a health facility should be based on its previous RDQA scores.

4. **Identify indicators and determine the reporting period** to verify the reported results.
5. **Conduct a site visit for RDQA**: Interview the relevant staff and review the documentation at the facility level.
6. **Review sources of data** for selected indicators and re-calculate the cases/results.
7. **Compare** the results from the re-calculation with the results reported and calculate variance for each indicator.
8. **Analyse the score and discuss** findings as a group and agree on the findings.
9. **Jointly develop** a strengthening plan and follow-up actions for the information system.
10. **Conduct follow-up** data verification assessment within 3 months of the RDQA to support the necessary corrections for improving data quality. A follow-up assessment should be conducted at following intervals, depending on the facility score: after 3 months if the score is <50%, after 6 months if the score is 50–70%, and once every year if the score is >75%.

- Refer participants to Reference 5.10: Data Verification Tool and Reference 5.11: Routine Data Quality Assessment Action Plan.
- Give participants 15 minutes to review the tools. When they are finished, answer any questions on the tools.

Reference 5.10: Data Verification Tool

Name of district/health facility	
Name of people who were interviewed	
Level of data collection (district/facility)	
Selected indicators verified	
Reporting period verified (3 months)	
Date of assessment	

Indicator	Source documents available* (No=0, Yes=1)	Source documents complete** (No=0, Yes=1)	Dates of source documents correct*** (No=0, Yes=1)	Number/results reported (A)			Number/results verified (B)			Variance = (A–B) X 100 / B
				Month 1	Month 2	Month 3	Month 1	Month 2	Month 3	
Nutrition assessment (and classification)										M1: M2: M3: Average:
Nutrition counselling										M1: M2: M3 Average:
Provision of therapeutic food										M1: M2: M3 Average:
Provision of supplementary food										M1: M2: M3 Average:

Notes:

* Review available source documents for each indicator for the reporting period being verified. Is there any indication that source documents are missing? The source document for the nutrition assessment and classification and nutrition counselling indicators is the NCST Adolescent and Adult Register. The actual document for the provision of therapeutic food and provision of supplementary food indicators is the Undernourished Client Management Form.

** Are all available source documents complete? If no, determine how this might have affected reported numbers.

*** Review the dates on the source documents. Do all dates fall within the reporting period?

A) Copy the data reported by the health facility during the reporting period for each selected indicator from the NCST monthly report or DHIS-2.

B) Recount the data recorded during the reporting period for each selected indicator by reviewing the *source document*s such as the Adolescent and Adult Nutrition Register, Stock Card, and Undernourished Client Management Form for Adolescent and Adults.

Variance: Calculate the variance of recounted to reported numbers for each selected indicator based on the formula {(A–B) x 100}/B. What are the reasons for the discrepancy (if any) observed (i.e., data entry errors, arithmetic errors, missing source documents, other)? For each indicator where variance is greater than **+/–5%,** further analysis is warranted.

Reference 5.11: Routine Data Quality Assessment Plan of Action

Based on the findings of the information systems' review and data verification at the health facility, please describe any challenges to data quality identified and recommended strengthening measures, with an estimate of the length of time that the improvement measure could take. These should be discussed with the health facility NCST team (or the district NCST team and the district HMIS Office).

Name of district/health facility					
	Identified gaps	Description of action plan	Person (s) Responsible	Timeline	Technical assistance needs
1					
2					
3					
4					
5					
Overall score of information system assessment					
Date of next RDQA					
Reviewed by:	**Health facility in-charge** Name: ---------- Position: ---------- Signature: ---------- Date: ……		**RDQA team leader** Name: ---------- Position: ---------- Signature: ---------- Date: ……		

5.8 Discussion and Module Evaluation (10 minutes)

- Allow time for questions and discuss any issues that need clarification.
- Refer participants to **Reference 5.0: NCST Competencies and Standards for Monitoring and Reporting of NCST Service Delivery**. Emphasize the required competencies for NCST monitoring and reporting.
- Distribute copies of the **Module 5 Evaluation Form**.
- Explain to the participants the following:
  - Participants should rate whether the training achieved the module's objectives.
  - The evaluation form has five scoring criteria: 1= strongly disagree, 2=disagree, 3=neither agree nor disagree, 4 = agree, and 5=strongly agree.
  - Tick on the appropriate box of the scoring criteria (1–5).

Module 5 Evaluation Form

Date: _____ Place of work: _____

Please rate each training objective in the table using the scoring system; tick where appropriate.

	1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree
1. The training achieved its objective of describing how to use NCST data collection tools					
2. The training achieved its objective of explaining how to report on NCST service delivery					
3. The training achieved its objective of explaining the definition of NCST indicators					
4. The training achieved its objective of describing how to enter NCST data in the District Health Information System—Version 2 (DHIS-2) software					
5. The training achieved its objective of explaining the principles and processes of NCST data analysis					
6. The training achieved its objective of describing how to conduct routine data quality assessments (RDQA)					

General comments:

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

What was good about this module?

What was not good about this module?

What information would you like added to this module to assist you in your work?

MODULE 6

Managing the Quality of NCST Services

16 hours

#	Description	Duration
6.0	**Module Objectives**	**5 minutes**
6.1	**Quality Improvement and Assurance Terms**	**30 minutes**
6.2	**Principles of Quality Improvement**	**1 hour**
6.3	**The Model for Improvement**	**2½ hours**
6.4	**Applying the Quality Improvement Model** Identifying the Problem (2¼ hours) Analysing the Problem (2¾ hours) Developing Changes (3½ hours) Testing and Implementing Change Ideas (2 hours)	**10½ hours**
6.5	**Monitoring Quality Improvement Activities**	**1 hour**
6.6	**Discussion and Module Evaluation**	**10 minutes**

Learning objectives

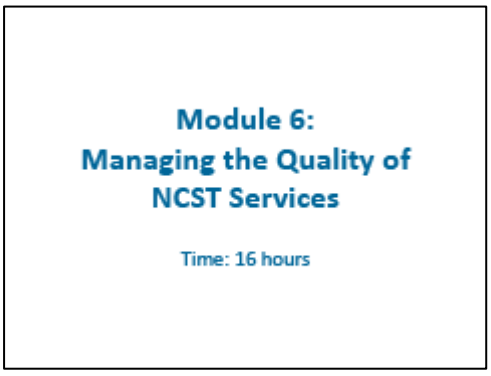
By the end of this module, participants will be able to:

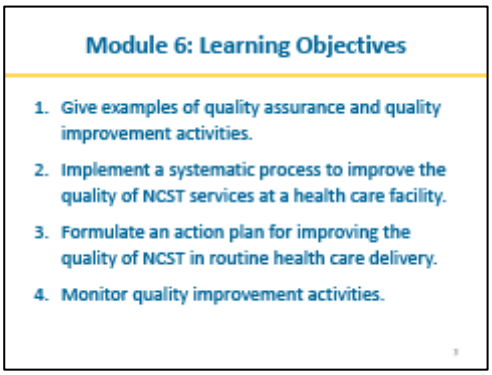
1. Give examples of quality assurance and quality improvement activities
2. Implement a systematic process to improve the quality of NCST services at a health care facility
3. Formulate an action plan for improving the quality of NCST in routine health care delivery
4. Monitor quality improvement activities

Materials needed	• Flipchart and stand • Markers and tape • LCD projector • **Module 6 PowerPoint** • Copy of the **Module 6 Evaluation Form** for each participant • **Participant Manual—Module 6**
Advance preparation	• Review PowerPoint slides for Module 6. • Review Module 6 in the Participant Manual. • Prepare for the module's gallery walk on using the model of improvement. Identify one to three health facilities that are using the model to strengthen the quality of nutrition activities in HIV and TB care and treatment. Ask the facilities to describe their quality improvement work on flipcharts that can be shared with participants during a gallery walk. The posters/flipcharts should include: o Health facility background o Summary of the facility improvement process o The improvement objective o Analysis of the problem o Changes tested o Results o Challenges and successes in the improvement process o Lessons learned and recommendations to new facilities

6.0 Module Objectives (5 minutes)

- Show the Module 6 heading on **Slide 6.1** and present the module objectives on **Slide 6.2.**





- Refer participants to **Reference 6.0: NCST Competencies and Standards for Managing the Quality of NCST Services** (see below) and explain that, in this module, they will get a chance to practice most of these competencies.

Reference 6.0: NCST Competencies and Standards for Managing the Quality of NCST Services

Competence can be defined as the ability to apply knowledge and skills to produce a required nutrition outcome.

Competency standards define the range of skills that are needed to achieve a desired nutrition outcome.

Competency	Minimum Standards
Use the 'model for improvement' method to improve the quality of NCST service delivery	Identify a problem that needs to be addressed
	Analyse available information on how the problem occurs, its causes, and its effects
	Develop improvement ideas
	Test and implement change ideas using the plan-do-study-act (PDSA) cycle
	Monitor quality improvement activities

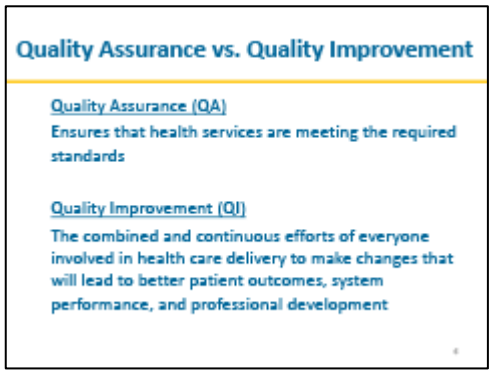
6.1 Quality Improvement and Assurance Terms (30 minutes)

BRAINSTORM: What does it mean to provide 'high-quality health care services'?

- Ask participants how they can tell if the health care services provided at a facility are of good quality. Write their answers on a flipchart and complete their responses with the following answers:
  - Services are provided in accordance with established standards and policies.
  - Data show that patients' clinical outcomes meet expectations/standards.
  - Services are patient-centred.
  - Patients express satisfaction with services.
  - Patients have good access to care.
  - Services are provided efficiently.
  - Services are provided cost-effectively.
  - Services are provided equitably to all populations.
  - Services are provided safely, in a way that minimizes harm to the patient.

- Summarise by showing **Slides 6.3** and **6.4**.

- Explain that the health care system and its actors should constantly strive to maintain and improve the quality of the health care they provide by using both 'quality assurance' and 'quality improvement' methods.
- Quality assurance activities ensure that health services meet the required standards, whereas quality improvement activities work to make health services better by continually trying new ways to deliver services to patients.
- Show **Slide 6.5** and review the differences.



PRACTICE: Quality assurance vs. quality improvement (15 minutes)

- Refer participants to **Reference 6.1: Quality Improvement Terms** in the **Participant Manual** (see below) and ask them to spend 5 minutes reviewing the definitions of quality assurance and quality improvement.

Reference 6.1 Quality Improvement Terms

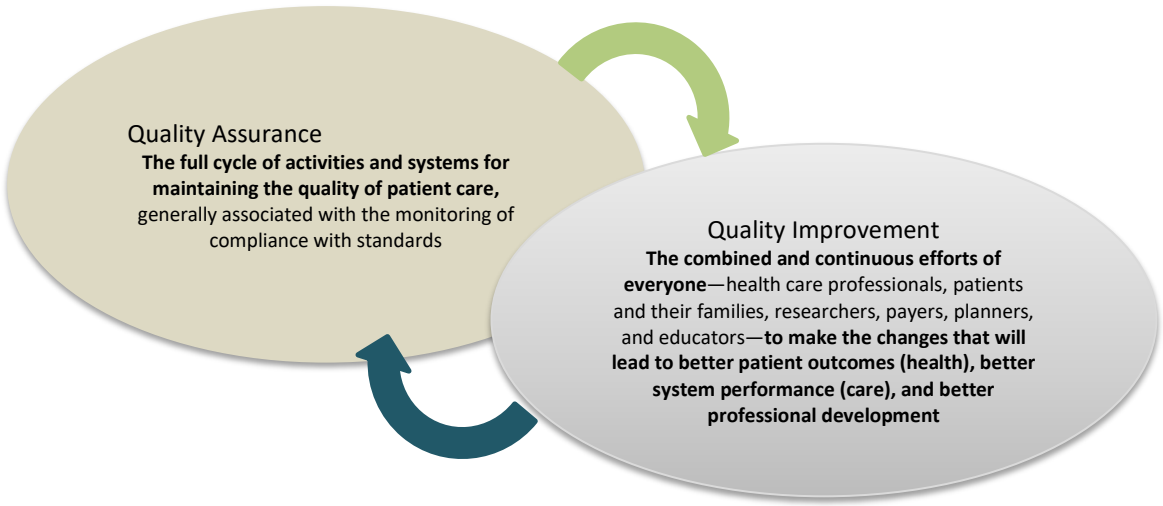
Quality means satisfying the stated or implied needs of a person/population, performing according to standards or expectations, conforming to requirements, being appropriate for purpose or use, meeting the client's reasonable expectations, and doing the right things right.

Quality improvement (QI) refers to the combined and continuous efforts of everyone involved in family health—including health care professionals, patients and their families, researchers, payers, planners, and educators—to make changes that will lead to better patient outcomes (health), better system performance (care), and better professional development (Batalden and Davidoff 2007).

Quality assurance (QA) refers to the full cycle of activities and systems for maintaining the quality of patient care and is generally associated with the monitoring of compliance with standards.

QI and QA are distinct but intersecting components, both of which are critical for improving and sustaining the quality of services. They are not mutually exclusive terms, and neither can be successful without the other.

Quality Assurance and Quality Improvement



Source: Batalden, P.B. and Davidoff, F. 2007. "What Is 'Quality Improvement' and How Can It Transform Healthcare?" *Quality & Safety in Health Care.* 16.1: 2-3.

- After participants finish reviewing **Reference 6.1,** ask them to turn to **Exercise 6.1** in the **Participant Manual** (see below). Participants should write down whether each activity listed would be considered 'quality assurance' or 'quality improvement'. Answers are shaded in the table below.

Exercise 6.1 Quality Assurance vs. Quality Improvement

Activity	Term
Using an observation checklist to ensure all steps of NCST were followed	**Quality assurance**
Opening the clinic on Saturdays to accommodate patients who are unavailable during the week	**Quality improvement**
Conducting periodic review of patient charts	**Quality assurance**
Conducting a patient satisfaction survey	**Quality assurance**
Introducing a new patient tracking system	**Quality improvement**
Measuring patient wait times after introducing task shifting	**Quality improvement**

6.2 Principles of Quality Improvement (1 hour)

- Explain that quality improvement (QI) activities will succeed if they adhere to four main principles. Show **Slide 6.6** and lead a discussion of the four principles of QI using the suggested questions and answers below:

1. Client focus

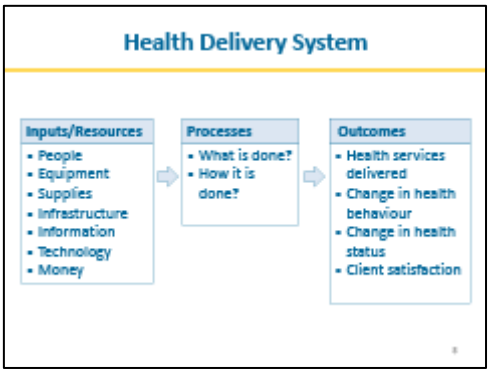
- Ask participants what they think 'client focus' means. Possible answers are in the box below.

Client Focus
- Focuses on maximizing the quality of patient care (safe, effective, patient-centred, efficient, equitable)
- Involves patients in making decisions about their own care
- Recognizes the value of patients' experiences and opinions
- Empowers the patient as an active partner in care
- Measures success by patient outcomes and satisfaction

- Explain that client-focused care helps ensure that clients' needs are met and that they will return for services.

2. Focus on processes

- Explain that the second principle of QI is to focus on processes.
- Explain that sometimes health workers know what standards should be followed and what proven interventions are needed to care for a patient, but the environment makes it difficult to follow those standards and do their jobs well.
- Show **Slide 6.7** and refer participants to the 'Inputs/Resources' box. Explain that health workers often can't control inputs and resources.

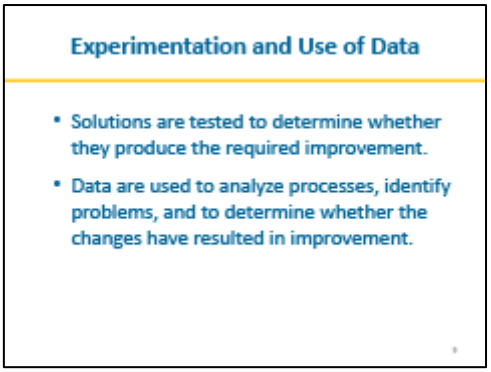


- Refer participants to the 'Processes' box on the slide and explain:
  - Health workers usually have more control over 'processes', or what they do with those resources and how they do their jobs with the available resources. This is the focus of QI.
  - Weak processes can cause inefficiencies in delivering services by adding unnecessary steps, complexity, waste, or extra work. These inefficiencies reduce the overall quality of care.
  - Sometimes processes need to be completely changed, and other times they just need to be better explained or refined. Using QI can help teams identify weaknesses and improve processes to achieve better results.
- Refer participants to the 'Outcomes' box in the slide and explain that QI activities are meant to find ways to overcome or manage challenges and find more effective ways to use proven interventions to achieve better results.
- Ask for a volunteer to share an instance where he/she changed the way something was done to achieve a better outcome.

3. Experimentation and use of data

- Explain that the third principle of QI is experimentation and use of data.
- Explain that the best way to improve the quality of health care is to experiment with changes to how things are done.
- Explain that the only way to know if a change improved the quality of care is to monitor results by collecting and analysing data. Explain that some changes will fail, and others will succeed. Emphasize that this learning process is central to QI.

- Review **Slide 6.8**.



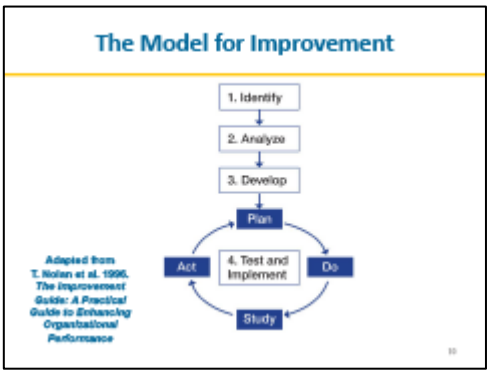
- Explain that:
  - QI efforts should use facts and data, rather than feelings or opinions, to identify the problem, propose solutions, and determine whether the solutions were effective.
  - Data collection and analysis are used to test hypotheses/assumptions. Comparing data from before and after a change indicates whether sufficient improvement has resulted. One way to measure whether a change resulted in improvement is to monitor and track specific indicators over a specific period.
  - Monitoring results helps determine whether the change is helping solve the problem. If it does, the change can be adopted. If not, a different idea can be tested.

4. Teamwork

- Explain that the last principle of QI is teamwork.
- Ask participants why teamwork is important. Complete their answers with the following information:
  - Health care processes consist of inter-dependent steps that are executed by different people, including patients. No one's work is done in isolation.
  - Lapses in quality often occur when tasks are handed over from one worker to another or when the important role that each actor plays to ensure high-quality care is not recognized.
  - Therefore, QI should be done by a team that includes subject matter experts, people involved with various tasks at the health facility, and people impacted by how the facility is run, including patients.
  - Participation in a team improves ideas, increases buy-in, and reduces resistance to change.
  - Accomplishing things together increases each team member's confidence and motivation.

6.3 The Model for Improvement (2½ hours)

- Show **Slide 6.9**.



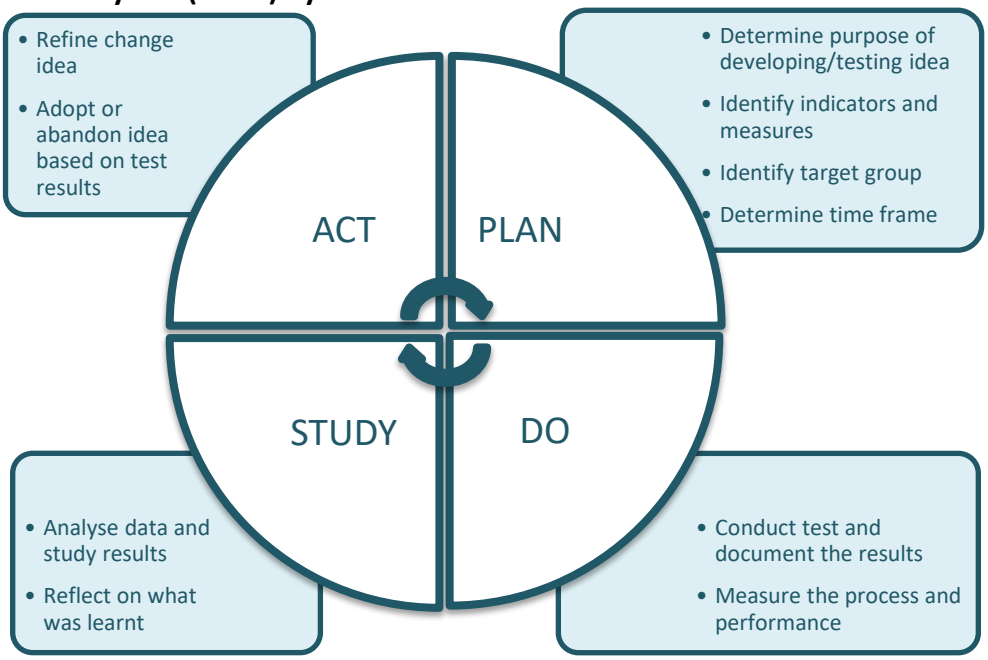
- Explain that the model for improvement allows health workers to systematically identify weaknesses in health care quality; analyse the potential causes of those weaknesses; and develop, implement, and test potential solutions/improvements that will strengthen services.
- Explain that the model for improvement asks these four questions, which are fundamental to making improvements:
  1. What are we trying to accomplish?
  2. What do we need to understand to make an improvement?
  3. What changes can we make that will result in an improvement?
  4. How will we know that a change is an improvement?
- Refer participants to **Reference 6.2: The Model for Improvement** in the **Participant Manual** (see below). Explain each step in the model for improvement using the information below. Mention that you will go into the details of each step later in this module.
- Then refer participants to the plan-do-study-act (PDSA) test cycle in **Reference 6.2** and explain that the steps in the model for improvement are combined with the PDSA cycle to form a framework for successful improvement activities.
- Explain the PDSA cycle using the information in the second box.

Reference 6.2 The Model for Improvement

Identify	**What are we trying to accomplish?** • What is the problem? *(Example: Not all malnourished clients in the HIV clinic are being identified.)* • How do you know that it is a problem? *(Example: Very few clients have MUAC recorded.)* • How frequently does the problem occur, or how long has it existed? *(Example: Every clinic day)* • What are the effects of this problem? *(Example: Clients are becoming sicker due to poor nutrition.)*

	*These questions encourage us think about the **'aim,' which should be specific, measurable, ambitious yet achievable, relevant, and time-bound.***
Analyse	**What do we need to understand to make an improvement?** • Who is involved in the care process? • Who is affected by the problem? • Why, when, and where does the problem occur? *(Example: Not enough staff on clinic days in the HIV clinic)* • What happens when the problem occurs?
Develop	**What changes can we make that will result in an improvement?** • Changes are possible solutions to problems and are developed based on knowledge and beliefs about likely causes of and solutions to the problem. *(Example: One hypothesis is that assessment of clients will improve if expert clients are trained to measure clients' MUAC at triage and record it in the register, leaving more time for staff to run the HIV clinic.)* **How will we know that a change is an improvement?** • **Measurement** is important for determining if the change led to an improvement. Teams have to find a way to measure whether they achieved their aim.
Test/ implement	Test the change using plan-do-study-act (PDSA) cycles to see if it leads to improvement. Based on the results, decide whether to abandon, modify, or adopt the solution.

The Plan-Do-Study-Act (PDSA) Cycle



PLAN: *Develop a plan to address the problem*	• Determine: o What the change is o Who is responsible for making the change o Where and when will the change occur o For how long will we test the change o On what scale will we implement the change (small or large scale)

	• Collect baseline data to measure the effects of change. • Educate and communicate: Inform people about the change being tested and include people who are involved in the change.
DO: *Test the change*	• Make sure that the change is being tested according to the plan. • Collect data about the process being changed. • Document any changes that were not in the original plan.
STUDY: *Verify that the change tested was implemented*	• Stop and review what happened. • See if the data are complete and accurate; compare the data with the baseline information to see if an improvement has occurred. • Determine what we can be concluded from the data. • Summarise what was learnt.
ACT: *Summarise and communicate what was learnt from the previous steps*	• If the change does not produce the desired results, then either modify the change and repeat the PDSA cycle or abandon the change. • If the change was successful, then implement it as a standard procedure.

- Explain that the QI process can be used when NCST services are just starting or already exist. If service delivery is already in progress, existing data and information can be used to measure quality and identify needs for quality improvement.

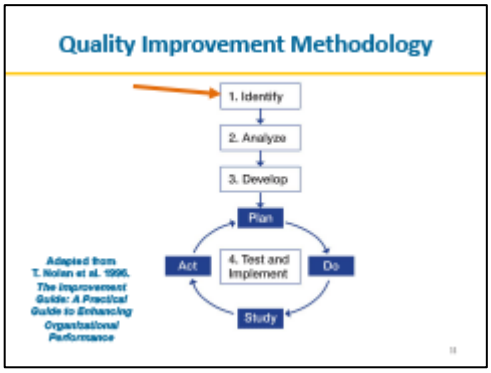
GALLERY WALK: Applying the model for improvement at the health facility level

- Before the gallery walk, set up the posters/flipcharts from the health facilities that are applying the model for improvement.
- Divide participants into groups according to their health facilities, and direct each group to one of the poster/flipchart presentations. Ask participants to spend 15–20 minutes at each presentation and then move clockwise to the next presentation.
- Tell participants to take note of the following from the presentations:
  The health facility's problem and 'aim statement' (or improvement objective)
  - Whether the changes tested led to an improvement
  - Improvement results
  - Challenges and successes
  - Lessons learned and recommendation(s)
- **Exercise 6.2** in the **Participant Manual** provides space to record the information.
- When all groups have finished reviewing the presentations, take 10 minutes to answer questions or discuss major issues identified in during the gallery walk. The gallery walk should take about 2 hours.

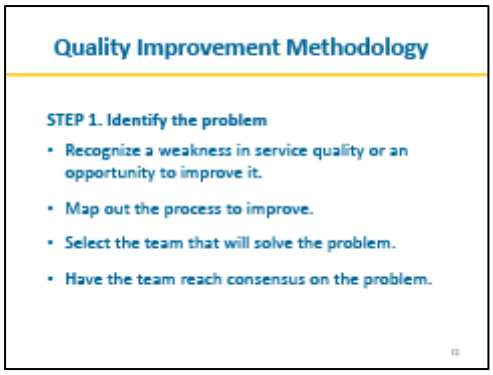
6.4 Applying the Quality Improvement Model (10½ hours)

PRESENTATION: Identify the Problem (2¼ hours)

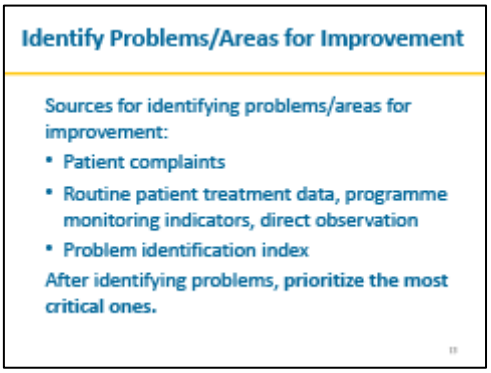
- Show **Slide 6.10**.



- Show **Slide 6.11** and explain that the first step of quality improvement is recognizing that there is a weakness in service quality or that an opportunity for improvement exists.



- Explain that identifying a problem also involves mapping out the process to improve, deciding who should be on the team that will solve the problem, and agreeing on the problem as a team.
- Show **Slide 6.12**.



- Explain that problems can be identified in a number of ways. A patient might express dissatisfaction with the quality of care provided, or routinely collected health data

might reveal needs for improvement. Other useful data sources include health records, management records, direct observation, and interviews.

- Explain that service providers need to know and understand standard NCST activities that must be implemented when providing care to patients at their facility, as well as where, when, and who does each activity. This will enable service providers to identify problems or barriers to implementing NCST care.
- Ask the participants to describe some of the activities conducted when delivering NCST services. Record their responses on a flipchart.
- Refer participants to **Reference 6.3: Description of NCST Activities** in the **Participant Manual** (see below). Review with participants the tasks that should be undertaken when implementing each activity: assessment, classification, counselling, education, care plans and support, follow-up, and referral.

Reference 6.3 Description of NCST Activities

Activity	Description of Activity
1. Assessment	Clients receive nutrition assessment using: • Anthropometry (weight, height, BMI, BMI-for-age, and MUAC) • Biochemical lab tests • Clinical evaluation (medical conditions associated with malnutrition are assessed; tests for bilateral pitting oedema and appetite are conducted) • Dietary assessment (using 24-hour recall to assess food intake)
2. Classification	Each client's nutritional status is classified and recorded on the register, treatment card, and/or health passport. Nutritional status is classified as: • Severe undernutrition • Moderate undernutrition • Normal • Overweight • Obese
3. Counselling	Clients receive nutrition counselling according to need and the identified nutrition problem.
4. Education	All clients receive nutrition education on the Critical Nutrition Actions.
5. Care plans and support	• All clients are put on a care plan appropriate for their nutritional status. • Severely and moderately undernourished clients receive therapeutic and supplementary food support.
6. Referral	• Clients who need additional medical, health, or nutrition support are referred to other health facility contact points. • From the health facility, clients are linked and/or referred to economic strengthening, livelihoods, and food security support in the community.
7. Follow-up	Clients who are severely undernourished, moderate undernourished, overweight, or obese are followed up.

- Review with the participants Reference 6.4: Problem Identification Checklist in the Participant Manual (see below).

Reference 6.4 Problem Identification Checklist

NCST Activity	Quality Improvement Principle	Principle Met? (Yes/No)
1. Assessment	Do all eligible patients receive nutrition assessment?	
	Is there a clearly documented flow chart of work that indicates who does what during nutrition assessment and when?	
	Is nutrition assessment implemented as part of routine HIV and TB care for every client?	
	Is there a team to oversee implementation of nutrition assessment?	
	Are nutrition assessment data routinely recorded according to the national guidelines?	
	Are results of nutrition assessment used for decision-making at the facility level?	
2. Classification	Do all patients who receive nutrition assessment have their nutritional status classified?	
	Is there a clearly documented flow chart of work that indicates who classifies nutritional status and when?	
	Is classification of nutritional status implemented as part of routine HIV and TB care for every client?	
	Is there a team to oversee classification of nutritional status?	
	Are data on nutrition classification routinely recorded according to the national guidelines?	
	Are results of nutrition classification used for decision-making at the facility level?	
3. Counselling	Do all eligible patients receive nutrition counselling?	
	Is there a clearly documented flow chart of work that indicates who does nutrition counselling and when?	
	Is nutrition counselling implemented as part of routine HIV and TB care for every client?	
	Is there a team to oversee implementation of nutrition counselling?	
	Are nutrition counselling data routinely recorded according to the national guidelines?	
	Is the client information from the nutrition counselling session used for decision-making at the facility level?	
4. Education	Do all eligible patients receive nutrition education?	
	Is there a clearly documented flow chart of work that indicates who does what during nutrition education and when?	
	Is nutrition education implemented as part of routine HIV and TB care for every client?	
	Is there a team to oversee implementation of nutrition education?	
	Are nutrition education data routinely recorded according to the national guidelines?	
	Are results on nutrition education used for decision-making at the facility level?	
5. Care plans and support (including	Are all patients given a nutrition care plan?	
	Is there a clearly documented flow chart of work that indicates who does what during the care and support process and when?	

provision of therapeutic and supplementary foods)	Are nutrition care and support for severely/moderately undernourished, overweight, and obese clients implemented as part of routine HIV and TB care for every client?	
	Is there a team to oversee implementation of nutrition care and support?	
	Are data on nutrition care and support provided routinely recorded according to the national guidelines?	
	Are results on nutrition care and support used for decision-making at the facility level?	
6. Referrals	Do all eligible patients receive a referral or linkage to other services?	
	Is there a clearly documented flow chart of work that indicates who does what during the referral process and when?	
	Are referral and linkage activities implemented as part of routine HIV and TB care for every client?	
	Is there a team to oversee implementation of referrals and linkages to other health services or to economic strengthening, livelihoods, and food security (ES/L/FS) services?	
	Are data on referrals and linkages routinely recorded according to the national guidelines?	
	Are results on referrals and linkages used for decision-making at the facility level?	
7. Follow-up	Are all severely/moderately undernourished, overweight, and obese clients followed up?	
	Is there a clearly documented flow chart of work that indicates who does what during follow-up and when?	
	Are follow-ups conducted as part of routine HIV and TB care for every client?	
	Is there a team to oversee the follow-up of eligible clients?	
	Are data on follow-up routinely recorded according to the national guidelines?	
	Are results on follow-ups used for decision-making at the facility level?	

Problem Prioritization

Determine which problem needs the most immediate attention. Prioritization should be based on the following:

- **High risk**: Could have the most negative effect if the quality is poor
- **High volume**: Occurs often and affects a large number of people
- **Problem-prone:** An activity susceptible to errors
- **Early step in care process**: Problem occurs during the first steps in providing care

PRACTICE: Identify problem areas (30 minutes)

- Group the participants according to their health facilities. Ask them to use **Reference 6.4: Problem Identification Checklist** to identify opportunities for improvement in their facilities.
- Have the teams prioritize the problem that needs the most immediate attention. Prioritization should be based on the following:

- **High risk**: Could have the most negative effect if the quality is poor
- **High volume**: Occurs often and affects a large number of people
- **Problem-prone:** An activity susceptible to errors
- **Early step in care process**: Problem occurs during the first steps in providing care

- Ask the teams to write the problem in the spaces in **Reference 6.4** and note how the current situation diverges from practices outlined in the national NCST guidelines or fails to meet client expectations and needs.

Example: ***Records show that patients wait up to 3 hours for service. Many patients say the long wait time is why they don't return to the hospital for follow-up nutrition assessments.***

- When the groups are finished, ask each group to present their priority problem area.

DISCUSSION: Form a team (15 minutes)

- Show **Slide 6.13**.
- Explain the following:

- Participants will serve as key members of the QI team at their facilities. When they start the improvement work, participants should include other members on the team.
- To decide who else should be on the team, participants will need to think in detail about what might be causing the problem.

- Refer participants to **Reference 6.5: Scope of Work for QI Teams** (see below), which details the QI team's roles and responsibilities. Review the reference and discuss any questions or concerns about the scope of work.

Reference 6.5 Scope of Work for the QI Team

Quality improvement (QI) teams will be established at each health facility that is starting or strengthening the process of integrating nutrition into HIV and TB service delivery.

Purpose

Ensure that all HIV and TB patients are provided with adequate and continuous care and treatment, including nutrition services.

Composition

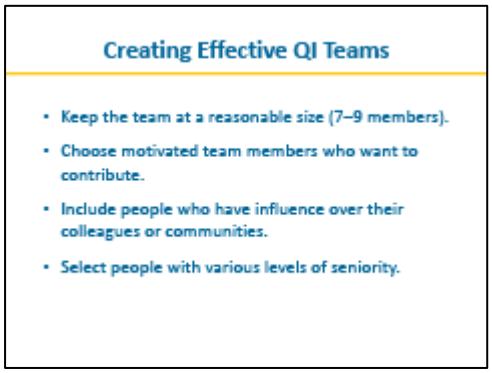
- The team should include people involved at different levels of service, e.g., clinicians, the facility in-charge, nurses, health surveillance assistants (HSAs), expert clients, and volunteers**.**
- Keep the team small (seven to nine members).

Responsibilities

- Regularly review the integration of nutrition services into HIV and TB service delivery at the health facility.
- Conduct regular meetings (every 1 to 2 weeks). Prepare a meeting schedule for at least 6 months and share with facility and district managers and/or coaches. Make sure the schedule is posted at the health centre.
- Lead continuous QI activities at the health centre:
    - Based on the team's review of how NCST services are provided and integrated, determine the areas in which patient care can be improved.
    - Identify and prioritize issues/problems with delivering/receiving NCST services.
    - Liaise with patients to understand their views about problems and potential solutions.
    - Develop and test solutions to the problems; create work plans for implementing specific solutions.
    - Collect data, and monitor and review/analyse whether the solutions have improved service delivery; based on review, determine next steps or new solutions.
    - Send representatives to trainings and learning sessions on how to improve the integration of nutrition into HIV and TB service delivery.
    - Share your facility's improvement work (especially results and data) and learning solutions with other health facilities.
- After reviewing **Reference 6.5**, explain that:
    - Selecting the team should be an interactive, inclusive process. Participants should consult with colleagues to ensure that a critical team member isn't left out.
    - For QI of NCST services, the team may include nurses, clinicians, facility managers or leaders, health surveillance assistants, expert clients, community leaders,

volunteers, and family members. The team should include some leaders or managers. The team should be inclusive enough to reflect many views but not have too many of one type of team member. For example, several nurses might want to participate, but the team shouldn't include all of them.

- Present tips on how to create a good QI team on **Slide 6.14.**



- Refer participants to **Reference 6.6: Guide to Creating a High-Performance Team** in the **Participant Manual** (see below), which provides tips on how to build and sustain a team for achieving common improvement goals. Encourage the participants to read the reference on their own time.

Reference 6.6: Guide to Creating a High-Performance Team

Building a team that functions well requires hard work and commitment. Some of the most important practices in creating high-performance teams include:

- ***Establish urgency and direction.*** All members need to believe that the team has an urgent and worthwhile purpose.
- ***Pay particular attention to first meetings and actions.*** First impressions mean a lot. During a team's first meeting, participants will want to understand who will have the greatest influence on the team and whether they will play an important role. It is important that roles are shared among the team members at this time.
- ***Spend a lot of time together.*** Teams must spend time together, especially at the beginning. The time spent together should be planned and unplanned, formal and informal. Meetings should be held **every 1 to 2 weeks** to keep the initiative moving ahead.

Conducting an effective team meeting

One way to improve the productivity of teams is to run effective team meetings. Here are some tips for making a meeting more effective and efficient.

1. ***Encourage attendance***. Teams should place a high priority on meetings and recognize that everyone must be there in order for the best work to emerge.
2. ***Prepare a meeting agenda***. An agenda defines the purpose of the meeting. It should include who will attend the meeting, a list of items to be covered, meeting start and ending times, and the location.

3. ***Make sure meetings begin and end on time.*** Use good time management to keep meetings on schedule.
4. ***Keep the discussion focused on relevant issues.*** Meetings are **forums to analyse data, brainstorm on effective changes, and make decisions based on results**.
5. ***Encourage and support participation of all members***. Ensure that everyone has the opportunity to contribute. Make sure tasks and responsibilities are distributed among all members to avoid overburdening anyone. Remind members to complete any assignments before the next meeting.
6. ***Bring proper closure***. Close a meeting by summarising the group's decisions and accomplishments, ensuring that tasks that must be completed before the next meeting are assigned, scheduling the next meeting, and preparing its agenda.

PRACTICE: Forming a QI team (30 minutes)

- Divide participants into groups according to their health facilities. Ask participants to turn to **Exercise 6.3: Forming a Health Facility Quality Improvement Team** in the **Participant Manual** (see below).
- Ask the groups to think about the problem they identified in the previous exercise and determine who would be needed on the QI team to solve the problem.
- Ask the groups to write the QI team members they identified on a flipchart, noting the type of service provider they are and where they work in the facility (e.g., a nurse in the ART clinic, an HSA in the PMTCT clinic) or, for people outside the facility, what their roles are (e.g., a community leader). Tell the groups they can use the form in **Exercise 6.3** as a guide. Ask the groups to post their flipcharts on the wall.

Exercise 6.3: Forming a Health Facility Quality Improvement Team

- Think about the problem your health facility group identified in the previous exercise and determine who would be needed on the QI team to solve the problem.
- In the space below, write down the QI team members your group identified, noting the type of service provider they are and where they work in the facility (e.g., a nurse in the ART clinic, an HSA in the PMTCT clinic) or, for people outside the facility, what their roles are (e.g., a community leader).

Health Facility: _____

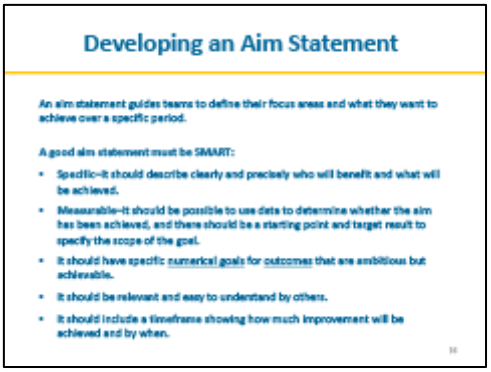
QI Team Members

Type of service provider or role (for people outside the facility)	Where they work (e.g., ART, PMTCT, lab, community)
1.	
2.	

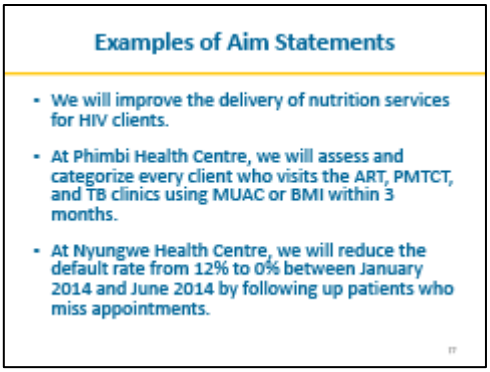
3.	
4.	
5.	
6.	
7.	
8.	
9.	

PRESENTATION: Develop an aim statement (10 minutes)

- Explain that the last part of the 'identify' step is to develop an aim statement. The aim should clearly communicate what the team is trying to accomplish.
- Show **Slide 6.15**.



- Show **Slide 6.16.** Review each aim statement and ask participants whether the statement is good and, if not, what should be improved.



PRACTICE: Developing an aim statement (30 minutes)

- With the participants again divided by health facility, refer them to **Exercise 6.4: Developing an Aim Statement** in the **Participant Manual** (see below). Ask them to develop an aim statement for the problem they identified earlier.

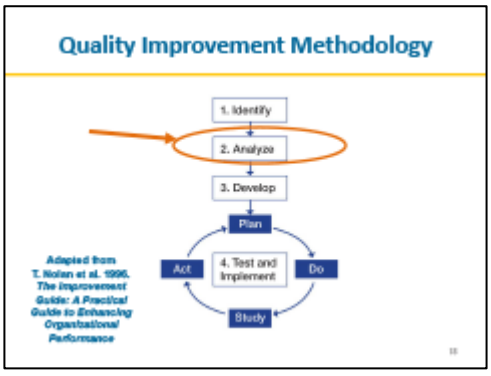
Exercise 6.4 Developing an Aim Statement

Specific scope of goal (e.g., increasing percentage of clients who receive nutrition counselling from 25% to 90%)	
Numerical goal for outcome	
Timeframe	
How aim will be achieved	
Aim statement	

- When the groups have finished, ask a representative from each group to read their aim statement aloud. Ask the other participants to provide feedback on each group's aim statement.
- Allow the groups 5–10 minutes to refine their aim statement based on feedback and write it down on a flipchart.

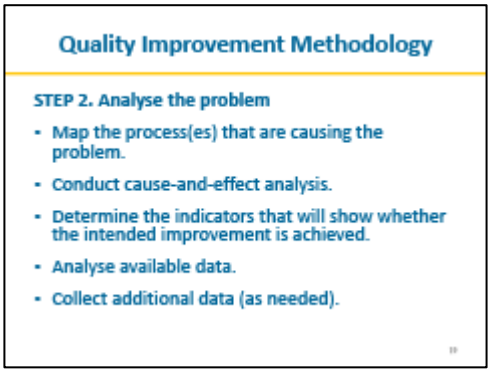
DISCUSSION: Analyse the Problem (2¾ hours)

- Show **Slide 6.17**.



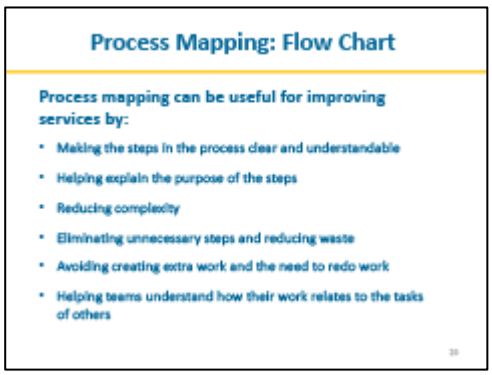
- Explain that once a problem or opportunity for improvement has been identified, the second step is to analyse the problem to find the root cause.
- Mention that problem analysis can be like peeling an onion: Many layers may have to be removed before reaching the core, i.e., the main cause of the problem.

- Show **Slide 6.18** and explain the steps necessary to get to the root of the problem. Explain that there are several tools and resources that can help with problem analyses, such as a flow diagram, a cause-and-effect (fishbone) analysis, and existing service delivery data.

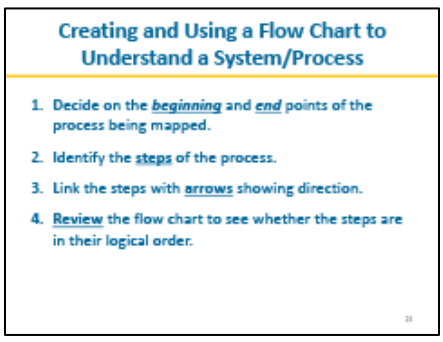


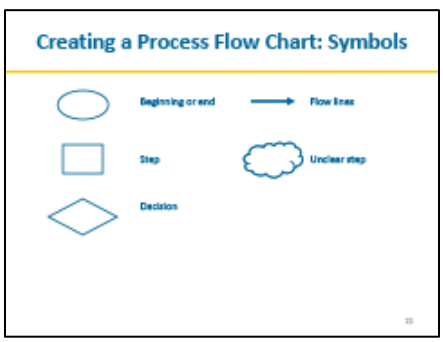
PRESENTATION: Describe and understand the process that is causing the problem

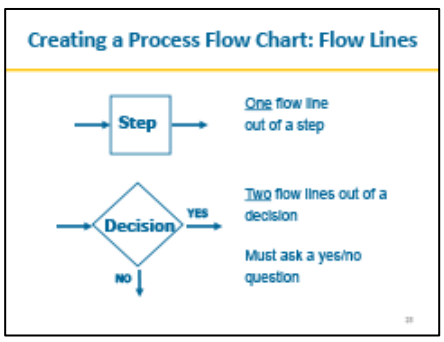
- Explain that most problems or quality deficiencies relate to how work is conducted (the process), including how tasks done by one staff member affect work done by another.
- Explain that the first step is to map out the various processes involved with providing the problematic service. One tool for mapping the processes is a flow chart, which shows the whole process that leads to the output or outcome targeted for improvement.
- Show **Slide 6.19** and facilitate a discussion on process mapping.



- Show **Slides 6.20–6.22** and explain the steps for creating and using a flow chart to analyse systems and processes.







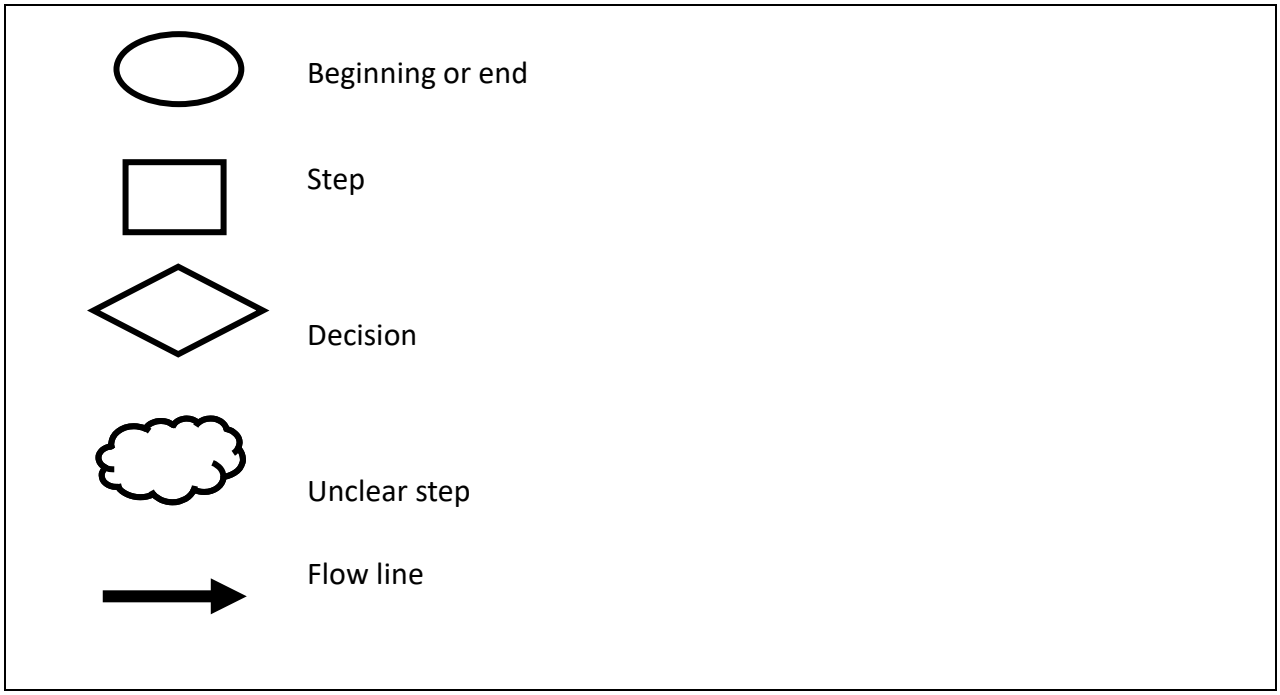
PRACTICE: Creating a flow chart (1 hour)

- Divide participants into groups according to their health facilities and have them draw a flow chart for current HIV/TB/ANC/PMTCT patients who should receive NCST services at their facilities. The flow chart should show all the steps health workers and patients take during a visit to the health facility. Explain that problems/bottlenecks should be indicated with the cloud sign, which indicates that step of the process is not clear.
- Tell participants that they can use Reference 6.7: Creating a Flow Chart to Understand a System/Process in the Participant Manual for guidance (see below).
- With your co-facilitator, observe the groups and assist as they develop the flow charts.
- When all the groups have finished, ask each group to present its flow chart to the rest of the groups.
- The groups should review their charts and answer the following questions:
  - 'Have you identified bottlenecks or additional problems in your service delivery?'
  - 'Does the flow chart make you think of anyone who should be added to your QI team?'
- After the group presentations, give participants 10 minutes to document the following:
  - Any specific bottlenecks/problems
  - People who will need to be added to their QI teams

Reference 6.7: Creating a Flow Chart to Understand a System/Process

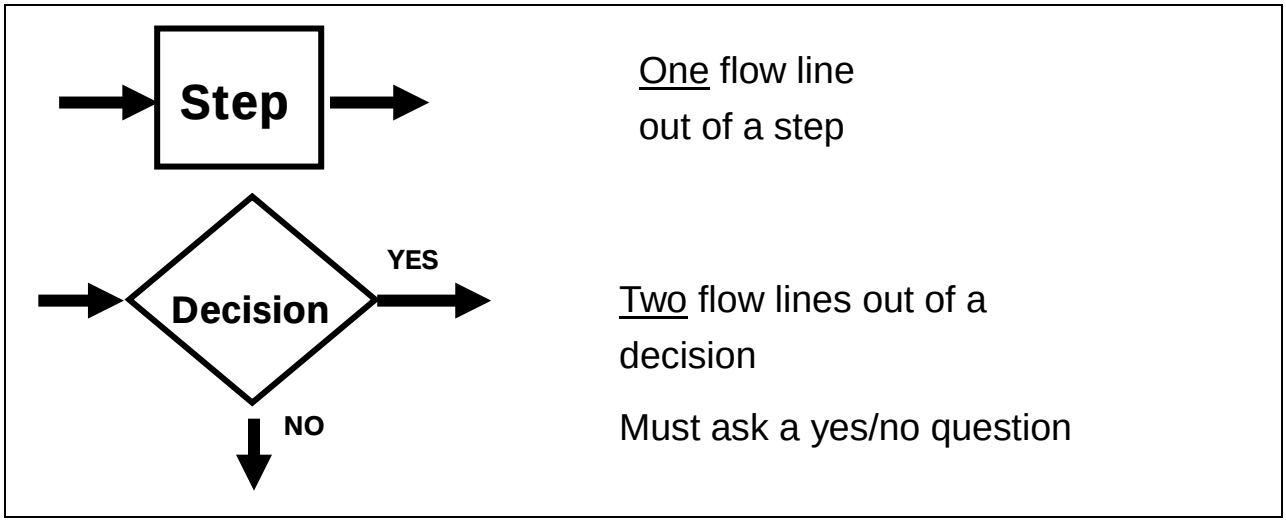
1. Decide on the beginning and end points of the process being mapped.
2. Identify the steps in the process and use the symbols below for each point in the process.
3. Using the flow lines in the diagram below, link the steps with arrows showing the direction of the steps.
4. Review the flow chart to see whether the steps are in their logical order.

Flow chart symbols



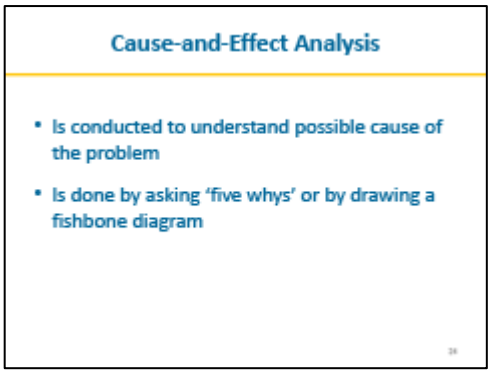
Flow lines of a flow chart

Connect the steps using the flow lines as shown in the diagram below.



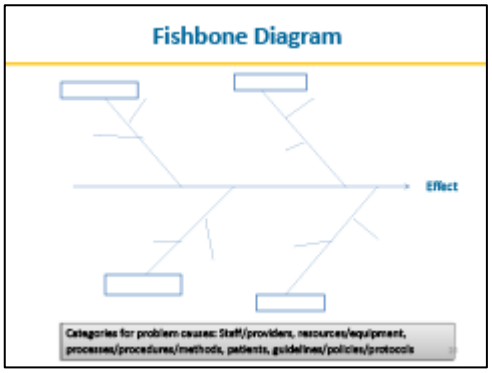
PRESENTATION: Conducting a cause-and-effect analysis

- Explain that once the problem has been identified more specifically using the flow chart, teams need to identify the root cause of the problem. This is done by conducting a cause-and-effect analysis.
- Show **Slide 6.23** and explain that a cause-and-effect analysis can help identify and document all the potential causes of the problem. Explain that this analysis is done by asking the **'5 Whys'**, a technique for determining the root cause of a problem by repeating the question 'why?' five times, with each question forming the basis for the next question.

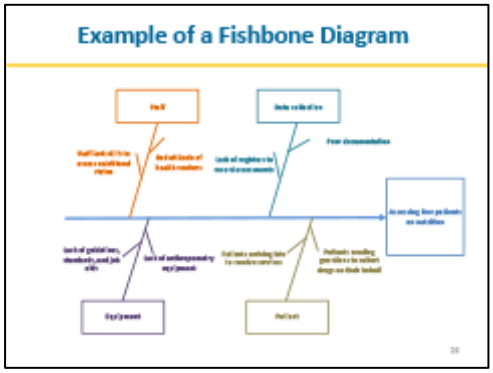


PRACTICE: Cause-and-effect (fishbone) analysis (45 minutes)

- With participants divided into their health facility groups, ask them to brainstorm and list all the possible causes of the problem they identified. When they have finished brainstorming, ask them to categorize the possible causes by source, such as staff/providers, resources/equipment, processes/procedure/methods, patients, and guidelines/policies/protocols.
- Show and explain **Slide 6.24** and refer the groups to **Reference 6.8: Fishbone Diagram** in the **Participant Manual** (see below). Ask a volunteer to read the instructions in the reference.



- Ask the groups to create a fishbone diagram on a flipchart. Show the example of a fishbone diagram on **Slide 6.25,** and tell the groups to refer to **Reference 6.8** in the **Participant Manual** if necessary.



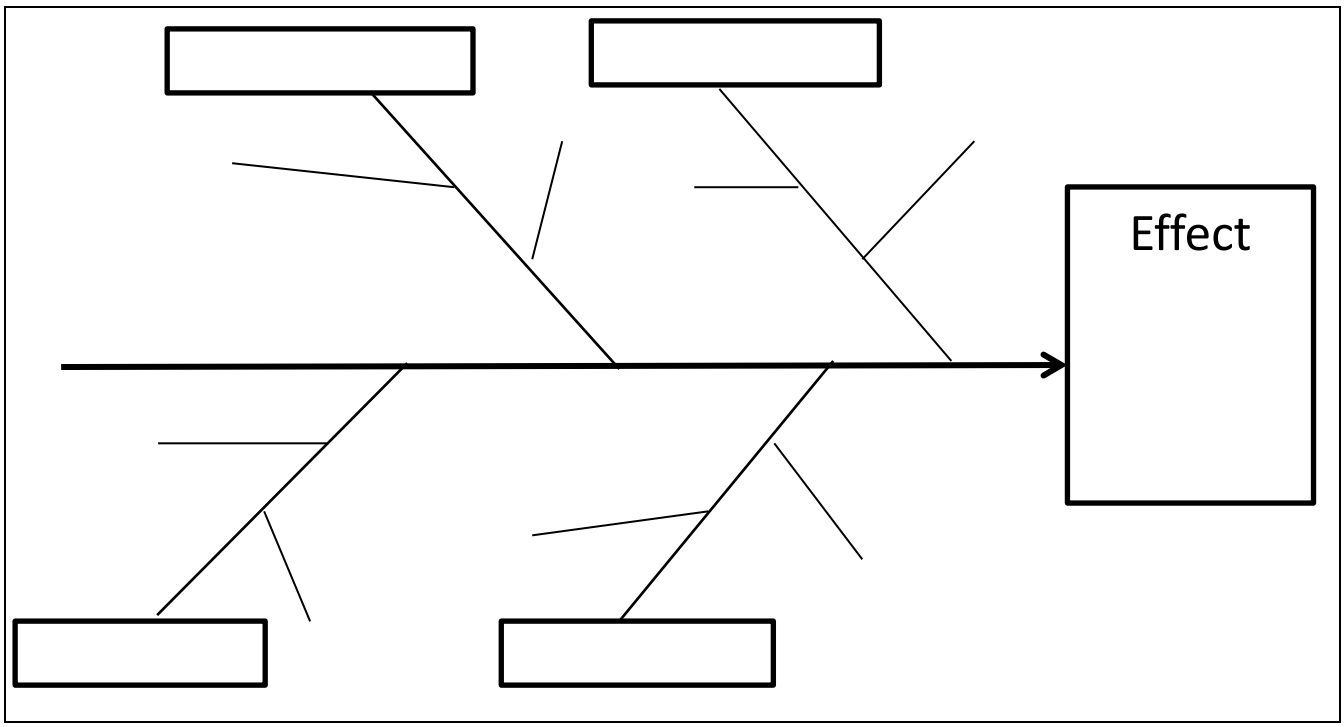
- With your co-facilitator, observe each group to review and assist with the exercise.
- When the groups finish, ask each group to paste its fishbone diagram on the wall. Explain that they will use their possible causes of the problem to come up with ideas for making an improvement.

Reference 6.8 Fishbone Diagram

1. Brainstorm and list all the possible causes of the problem.
2. Write the problem (the effect) in the box at the far right of the diagram.
3. To the left of that box, draw a central line (the spine), and from this central line, draw diagonal lines (fishbones) to represent different categories for the causes of the problem (see diagram below).
4. Group the possible causes according to the relevant categories listed below and write the categories in the boxes.

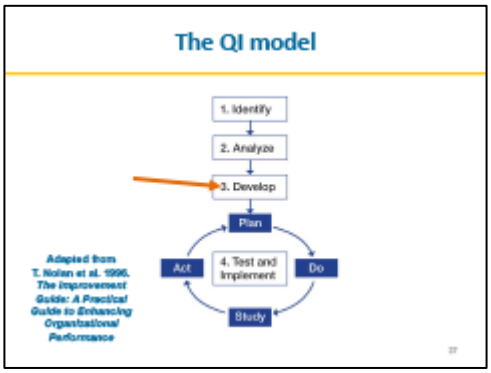
   Categories:
   - Providers/staff
   - Policies/guidelines/protocols
   - Patients
   - Resources/equipment
   - Procedures/processes/methods

- Starting from the diagonal line under each category, draw a smaller diagonal line for each cause in the corresponding category and write the cause next to the smaller line.



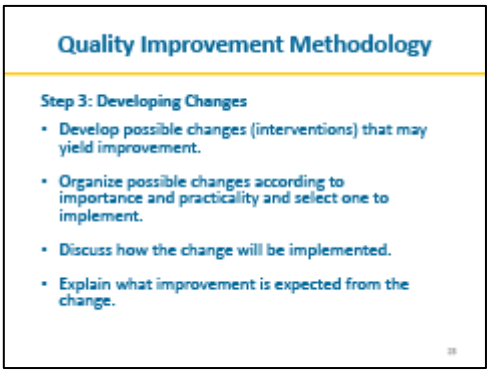
PRESENTATION: Developing Changes (3½ hours)

- Show **Slide 6.26**.



- Explain that the first two steps helped to: (a) identify what to improve and (b) analyse the information needed to make the improvement.
- Explain that the third step, 'develop', uses the information from the previous steps to learn what changes will lead to improvement.

- Show **Slide 6.27** and explain the steps for developing changes.



PRACTICE: Developing changes (1 hour)

- With participants divided into their health facility groups, ask the groups to brainstorm on possible solutions to their problem. Have them list all changes they would want to try in **Exercise 6.5: Developing Changes** in the **Participant Manual** (see below).
- If possible, share changes that you know have been tested in facilities and proved to be effective. Refer participants to **Reference 6.9: Examples of Change Ideas for Improving Nutrition Assessment and Classification** in the **Participant Manual** (see below), which provides examples of change ideas that have been tested and proved effective for improving nutrition assessment and classification. Ask participants to review the ideas to determine if they want to test any of them.
- Ask participants to prioritize their changes according to importance and practicality and write the changes on a flipchart.
- Ask participants to create timelines for testing the changes and add the timelines to the flipchart. Have them paste their flipcharts on the wall.

Exercise 6.5 Developing Changes

With your health facility group, brainstorm on possible solutions to the problem. In the space below, list all the changes your group wants to try to solve the problem.

Change ideas (possible solutions)	**How the change idea would be implemented**

Reference 6.9 Examples of Change Ideas for Improving Nutrition Assessment and Classification

Change Idea (Solution)	Implementation	Change Idea Improved Nutrition Assessment by:
Giving number tags to patients on arrival at the facility	Patients received the tags on arrival and left the tags at the last step of care. At the end of the day, health workers counted the tags.	• Tracking the number of patients who receive nutrition assessment on a particular clinic day • Ensuring that all patients who attend a clinic do not miss the nutrition assessment step
Using an electronic system to register ART patients	All patients who visited the ART clinic were registered in the computer. At the end of the clinic day, health workers could determine how many patients they had seen.	• Tracking ART patients who receive nutrition assessment
Counting all clients who visited the clinic during the month as shown in the TB, ART, and ANC/PMTCT registers	All patients who visited the clinics were documented in the register.	• Reporting of patients who receive nutrition assessment at ART, TB, and ANC/PMTCT clinic
Counting the patient registration cards used in ART clinics at the end of each clinic day	All patients received their treatment cards at the start of the clinic day and left them with the nurse who Dispensed drugs. Service providers could count the cards to determine how many patients they had seen.	• Tracking the number of patients who receive nutrition assessment on a particular clinic day
Improvising a register to record all clients assessed	A hardcover notebook was improvised as a register to record details of all patients assessed.	• Tracking the number of patients who receive nutrition assessment on a particular day • Reporting patient outcomes at the end of each clinic day and month
Tallying all clients that were assessed in a notebook	A notebook was used to tally patients assessed at every clinic.	• Reporting patient outcomes at the end of the clinic day and month
Developing forms to record the information of all clients assessed	Paper forms were used to record patient information.	• Reporting patient outcomes at the end of the clinic day and month
Using health surveillance assistants (HSAs) to assess clients	HSAs were trained on how to assess nutritional status. The trained HSAs measured MUAC, height, and weight	• Facilitating nutrition assessment of every patient attending ART, TB, and ANC/PMTCT clinic

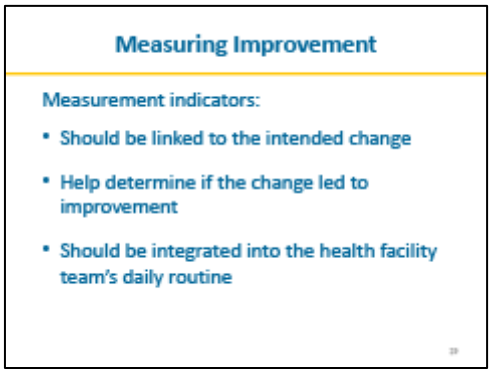
	and classified nutritional status using MUAC and BMI of clients attending the clinic.	• Reducing patient waiting time • Reducing staff workload in facilities with a limited number of staff
Using expert clients to assess nutritional status of clients	Expert clients were provided an orientation on how to assess nutritional status using MUAC, weight, and height. The oriented expert clients measured MUAC, height, and weight of clients attending the clinic.	• Facilitating nutrition assessment of every patient attending ART, TB, and ANC/PMTCT clinic • Reducing patient waiting time • Reducing staff workload in facilities with a limited number of staff
Using nurses to assess nutritional status of clients	Nurses were trained on how to assess nutritional status. The trained nurses measured MUAC, height, and weight and classified nutritional status using MUAC and BMI of clients attending the clinic.	• Facilitating nutrition assessment of every patient attending ART, TB, and ANC/PMTCT clinic • Reducing patient waiting time • Reducing staff workload in facilities with a limited number of staff
Using support staff such as security guards, hospital cleaning or maintenance staff, clerks, and ground labourers to assess nutritional status of clients	Support staff were provided an orientation on how to assess nutritional status using MUAC, weight, and height. The oriented support staff measured MUAC, height, and weight of clients attending the clinic.	• Facilitating nutrition assessment of every patient attending ART, TB, and ANC/PMTCT clinic • Reducing patient waiting time • Reducing staff workload in facilities with a limited number of staff
Shifting point of assessment from the nutrition focal persons' desk to the ART, TB, or ANC/PMTCT registration point	An individual would conduct assessments at registration, and a tool for recording nutrition information was placed at registration.	• Reducing patient waiting time • Ensuring that every patient who attends ART, TB, or ANC/PMTCT clinic does not miss the nutrition assessment step
Developing a roster for facility staff to take turns conducting assessments	A roster for conducting assessments was placed in the clinic.	• Ensuring that there is always a person available to conduct nutrition assessment for clients on the ART, TB, or ANC/PMTCT clinic day

GALLERY WALK: Reviewing the health facility groups' work (1½ hours)

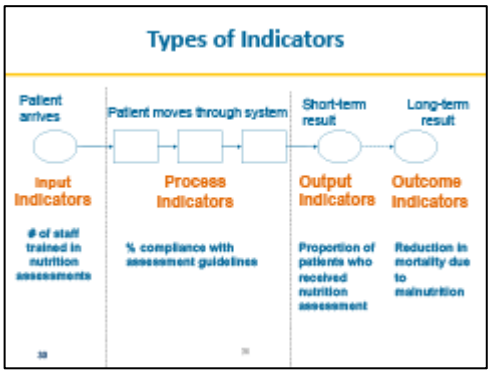
- Before the gallery walk, make sure that the health facility groups have pasted on the wall flipcharts with their work on the aim statement, flow chart, QI team, fishbone diagram, and changes to be tested and their timelines.
- With participants in their health facility groups, ask the groups to spend 10 minutes at each presentation and then move clockwise to the next presentation.
- Ask the groups to note the following from the presentations:
  - The facility's problem and aim statement
  - The problems identified through the flow chart and the cause-and-effect (fishbone) analysis
  - The prioritized changes that the facilities plan to test
- When all groups have finished reviewing the presentations, take 30 minutes to answer questions or discuss major issues identified in during the gallery walk.

PRESENTATION: Measuring the impact of the implemented changes

- Explain that measuring the quality improvement change's effect on the problem shows whether the change is working.
- Show and review **Slide 6.28**.

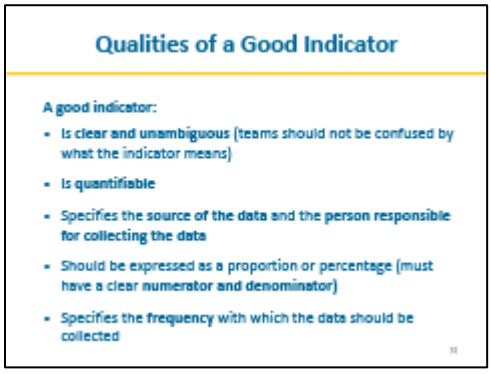


- Explain that data make it possible to make decisions based on fact, not opinion. Indicators are used to measure whether there is an improvement.
- Show **Slide 6.29** and explain that there are different types of indicators**.** Ask participants to give an example of each type.

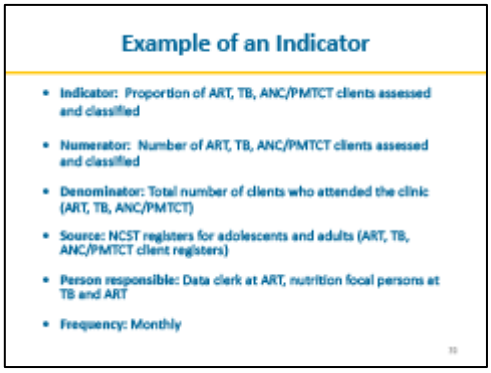


- Explain that teams need to develop a measure or indicator that reflects their improvement aim and shows whether their efforts are solving the problem.

- Show **Slide 6.30** and explain the qualities of a good indicator.



- Show **Slide 6.31** and explain the example indicator**.**



- Explain that, to be useful at the facility level, indicator data must be tracked and analysed at intervals that make sense for the indicator. Indicators can be tracked daily, weekly, fortnightly, and monthly.
- Point out that before changes are tested, teams must collect baseline data on their indicator to compare and measure their results. Explain that each NCST activity has at least one indicator that will require baseline data.

PRACTICE: Developing indicators (45 minutes)

- With participants divided into their health facility groups, ask the groups to develop indicators to track to measure their change. Tell participants they can review **Reference 6.10: NCST Indicators** in the **Participant Manual** (see below) for examples.
- Have the groups fill out the table in **Exercise 6.6: Developing Indicators** in the **Participant Manual** (see below) to guide them in developing the indicators.
- When the groups are finished, ask each group to present its indicators. The rest of the participants should provide feedback.
- When all the groups have presented, give them 5–10 minutes to revise their indicators based on feedback.

Exercise 6.6: Developing Indicators

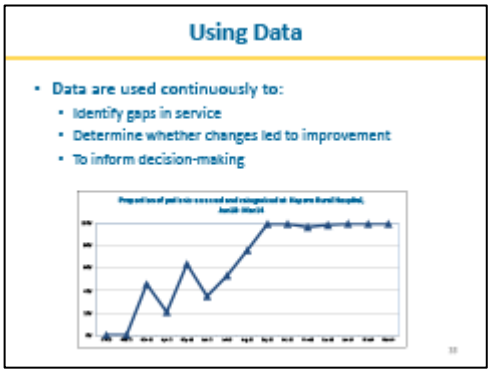
Indicator	
Numerator	
Denominator	
Source of information	
Person responsible	
Frequency	

Reference 6.10 NCST Indicators

	Assessment	Classification	Counselling	Nutrition care plans and support	Follow-up	Referral for community-based ES/L/FS support	Nutrition education
Aim	All clients attending HIV, TB, and ANC/PMTCT clinics receive nutrition assessment at each visit	All clients who receive nutrition assessment have their nutritional status classified	All clients whose nutritional status is assessed and classified receive nutrition counselling	All severely and moderately undernourished clients receive supplementary or therapeutic food	All clients who miss one appointment are followed up	Eligible clients are referred from the facility to community-based ES/L/FS support services	All clients attending HIV, TB, and ANC/PMTCT clinics receive nutrition education
Indicators	% of HIV, TB, ANC/PMTCT patients who received nutrition assessment each month	% whose nutritional status was classified	% who received nutrition counselling	% of severely and moderately undernourished clients who received supplementary or therapeutic food	% of clients who missed an appointment who returned for scheduled follow-up visits % of clients who defaulted on treatment	% of clients referred from the facility for ES/L/FS support	% of clients who attended HIV, TB, ANC/PMTCT clinics and received nutrition education
Numerator	# of HIV, TB, ANC/PMTCT patients who received nutrition assessment each month	# of clients whose nutritional status was classified	# who were counselled	# who received therapeutic or supplementary food	# of clients who missed an appointment who returned for scheduled follow-up visits # of clients who defaulted on treatment	# who were referred for ES/L/FS support	# who attended HIV, TB, and ANC/PMTCT clinics and received nutrition education
Denominator	# who attended HIV, TB, ANC/PMTCT clinics each month	# whose nutritional status was assessed	# whose nutritional status was assessed and classified	# who are severely/moderately undernourished	# of clients who missed one scheduled appointment	# who are eligible for referral for ES/L/FS support	# who attended HIV, TB, ANC/PMTCT clinics

DISCUSSION: Using indicator data and tracking progress

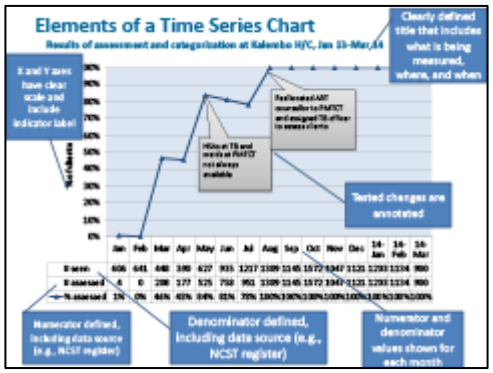
- Explain that health care providers collect and report a lot of data but rarely use that data to improve services.
- Ask participants, 'Why don't providers use data regularly?' Listen to their responses and add the following points as needed:
  - They are very busy.
  - They rarely have time to organise and analyse data.
  - They receive little or no feedback on the data they report.
  - Rarely does anyone explain how to use the data to help improve service delivery at their clinic.
  - They rarely see the value of the data they are being asked to report.
- Show **Slide 6.32** and explain why using data is crucial.



PRESENTATION: Time series charts

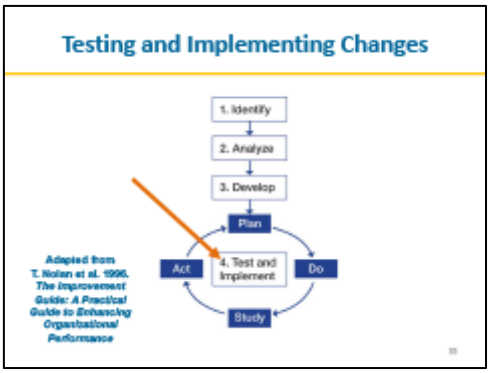
- Explain that in the QI process, teams work with data continuously to identify gaps in services, test changes, and determine if the changes led to improvement. Time series charts are used to show changes in data for an indicator over a period of time. Time series charts also allow providers to see gaps in performance.
- Ask participants whether anyone has used a time series chart.
- Show participants **Slide 6.33** and explain the elements of a time series chart. Be sure to note that a time series chart should have:
  - A clear, well-defined title on the top that includes what is being measured and when
  - X and Y axes that have a clear scale and include the indicator label
  - A numerator and denominator that are defined and include a data source

- Values for the numerator and denominator shown for each month (or relevant period)

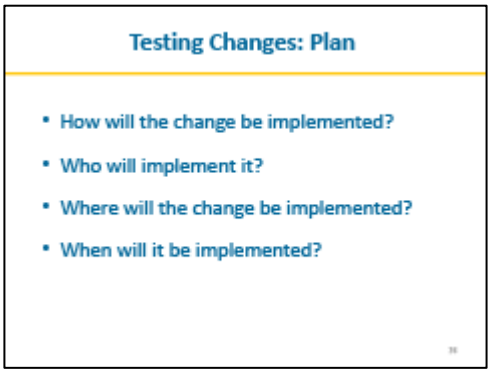


PRESENTATION: Testing and implementing change ideas (2 hours)

- Show **Slide 6.34**.



- Explain that this step builds on the previous three steps and involves a process that tests whether the proposed solutions yield the expected improvement.
- Explain that the process has four steps, the plan-do-study-act (PDSA) steps discussed earlier. Refer participants back to **Reference 6.2: The Model for Improvement** in the **Participant Manual** for additional information.
- Show **Slide 6.35** and explain the 'plan' step.



PRACTICE: Developing health facility QI implementation plans (1 hour)

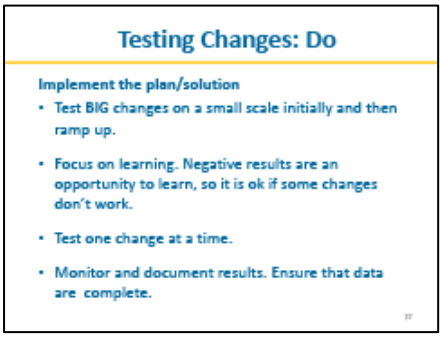
- With participants divided into their health facility groups, ask the groups to make a plan for testing the prioritized changes on their lists, using **Reference 6.11: Health Facility QI Planning Guide** in the **Participant Manual** (see below) as a guide.
- Tell participants to use information from previous exercises to complete the implementation plan and write the plan on a flipchart.
- When the groups have finished developing their plans, ask them to paste them on the wall. With your co-facilitator, review each group's plan and provide feedback.

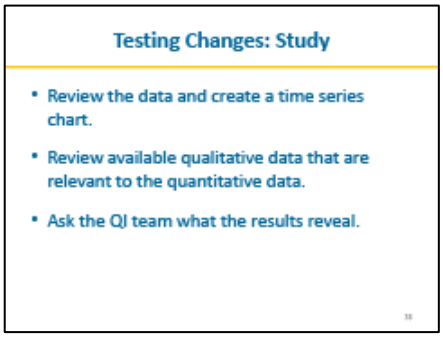
Reference 6.11 Health Facility QI Planning Guide

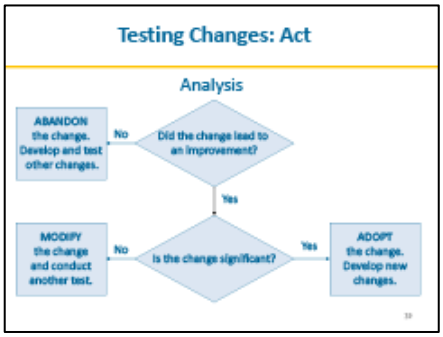
Health Facility Name: _____ Date: _____

Improvement aim	Change ideas (solutions)	How the change idea will be implemented	Who will be responsible for implementing the change idea	Where the change idea will be implemented	When the change idea will be implemented
Indicator: **Numerator**: **Denominator**:	1.				
	2.				
	3.				
	4.				
	5.				

- When the groups are finished, show **Slides 6.36–6.38** and explain the do, study, and act steps.

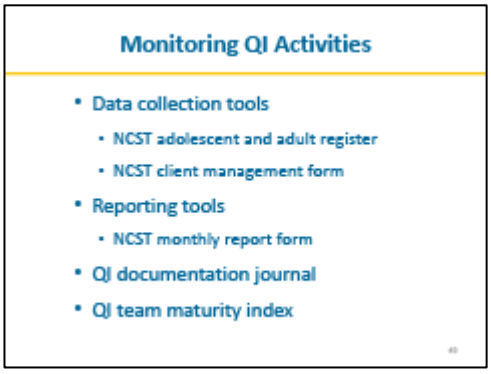






6.5 Monitoring Quality Improvement Activities (1 hour)

- Explain that NCST and QI monitoring tools can be used to monitor results of tested changes.
- **Show Slide 6.39** to review the available tools. Explain that the NCST tools are covered in detail in **Module 5: NCST Monitoring and Reporting**.



PRACTICE: Documentation journal (15 minutes)

- With participants in their health facility groups, refer the groups to **Reference 6.12: Quality Improvement Documentation Journal** in the **Participant Manual** (see below) and ask them to use information from the previous exercises to fill in the journal.
- Explain that QI teams must ensure that the journal is complete and accurate at all times.

Reference 6.12 Quality Improvement Documentation Journal

Name of the Site: _____Team Leader: _____

Team Members: _____

Journal Start Date: _____ End date: _____

Part 1. Objective, Indicator, and Problem Description

Improvement Objective: **1. _____**	**Indicator for the Objective:**
Problem Description: Briefly describe the problem being addressed and state how the current situation diverges from the national NCST guidelines or fails to meet clients' expectations or needs. Also describe some of the challenges with the current situation.	

Part 2. Changes Worksheet

List the changes that the team has tested to achieve the improvement objective. Write all changes, whether effective or not. Also note when the change was started and ended (where applicable) so the results can be annotated.

Tested Changes: Use 1–2 sentences to briefly describe each tested change.	**Start Date** DD/MM/YY	**End Date** (if applicable) DD/MM/YY	**Effective?** **(Yes/No)** Was there any improvement?	**Comments** Note any potential reasons why the change was or was not effective; also indicate any change in indicator data related to the tested change.

Part 3. PLAN-DO-STUDY-ACT Cycles for Change Ideas

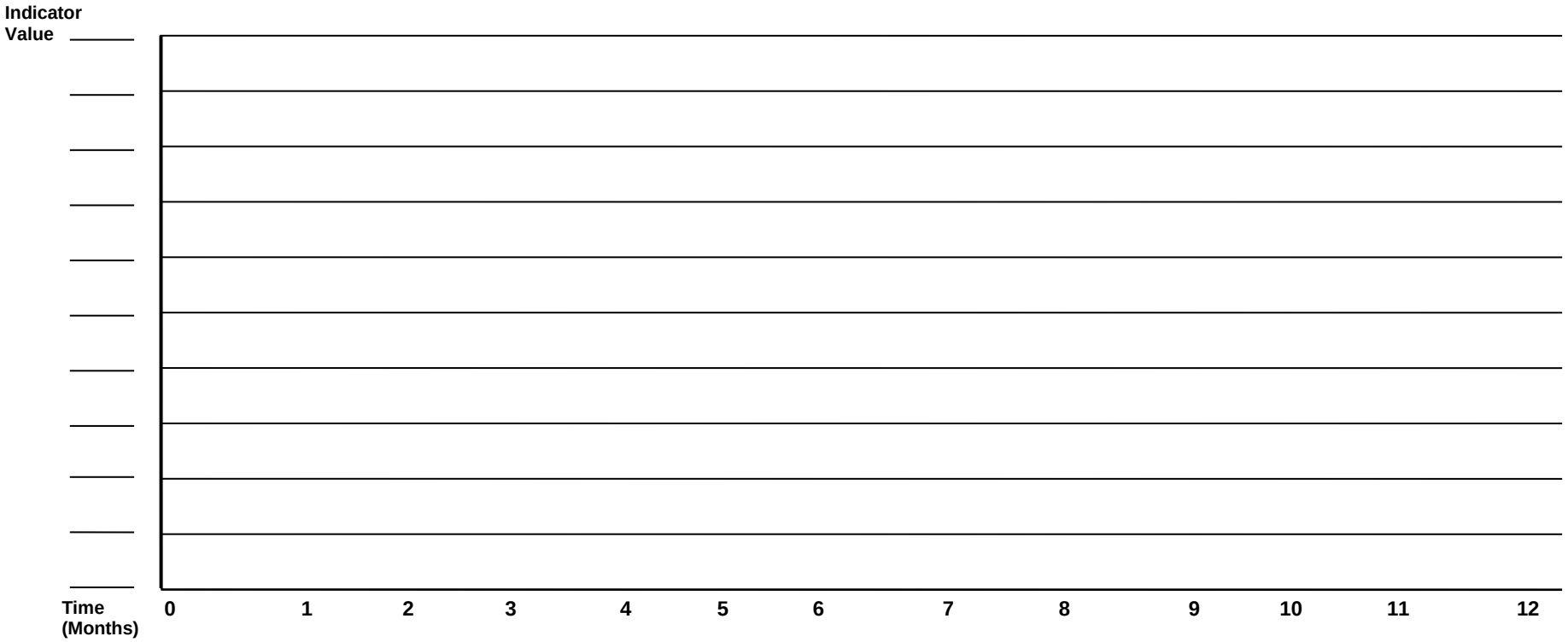
Document the PDSA cycle for each change tested; use separate forms for each round of testing.

Plan-Do-Study Act Cycle Form

Aim:	**Change idea 1:**	**Change idea 2:**	**Change idea 3:**
PLAN • Determine: o What the change is o Who is responsible for making the change o Where and when will the change occur o For how long will we test the change o On what scale will we implement the change (small or large scale) • Collect baseline data to measure the effects of change. • Educate and communicate: Inform people about the change being tested and include people who are involved in the change.			
DO • Make sure that the change is being tested according to the plan. • Collect data about the process being changed. • Document any changes that were not in the original plan.			
STUDY • Stop and review what happened. • See if the data are complete and accurate; compare the data with the baseline information to see if an improvement has occurred. • Determine what can be concluded from the data. • Summarise what was learnt.			
ACT • If the change does not produce the desired results, then either modify the change and repeat the PDSA cycle or abandon the change. • If the change was successful, then implement it as a standard procedure.			

Part 4. Time Series Chart Template—Annotated Results

Use the graph below to create a time series chart to document progress. Indicate the value of the numerator and denominator, and note on the graph the time the change was introduced.



Numerator													
Denominator													
%													

Briefly explain any notable trends in the graph(s):

***Notes on the indicator*:** Write any additional comments on the performance of indicators, if needed. Note anything derived from the changes worksheet and the graph template that might explain the performance trends of the improvement objective.

. _____ _____

_____ _____

_____ _____ _____

_____ _____

***Notes on other observed effects*:** Write any *currently* observed effects (positive or negative) resulting from the quality improvement effort, such as comments from patients, changes in providers' performance or motivation, improved efficiency, or the survival story of a sick patient.

_____ _____ _____

_____ _____ _____

_____ _____

_____ _____

_____ _____

DISCUSSION: QI team maturity index

- Refer participants to **Reference 6.13**: **QI Team Maturity Index** in the **Participant Manual** (see below) and review it with participants. Explain that this tool helps teams measure their growth in implementing quality improvement.
- With participants divided into their health facility groups, ask the groups to rate themselves using the maturity index. Encourage them to use the index each month so they can see whether they are moving to the next levels of maturity.

Reference 6.13: QI Team Maturity Index

Purpose: To monitor progress in team maturity as the team works through different stages of improvement and the NCST activities

Expectations: The team will progress through the stages of maturity during its improvement work.

Assessment/Description	Definition
1.0 Forming team	• Team has been formed and oriented on aims, target population • Team has held discussions on its improvement aim
1.5 Planning for the improvement has begun, but no changes tested	• Team is actively meeting and holding discussions • Plans for testing changes have been made • No testing of changes has begun • Some baseline data may be collected
2.0 Changes tested, but no improvement seen yet	• Some changes are being tested to improve 1 or more of the 7 NCST activities • Data on key measures are being collected, analysed, and reported • No improvement seen yet
2.5 Changes tested, some initial improvement	• Some changes are being tested in 1 or more of the 7 NCST activities • Data on key measures are being collected, analysed, and reported • Some evidence of initial improvement from sites based on simple indicators • Able to describe what changes are being made and whether the changes work
3.0 Modest improvement	• Change ideas tested; successful change ideas implemented for at least 1 of the 7 NCST activities • Testing changes for at least 2 of the 7 NCST activities • Data on key measures are being collected, analysed, and reported • Evidence of moderate improvement in process measures supported by quantitative data • Able to describe what changes are being made and whether the changes work
3.5 Improvement	• Change ideas tested; successful changes implemented for at least 3 activities • Testing changes and measuring quantitative data for at least 2 of the 7 activities • Data on key measures are being collected, analysed, and reported • Team shows ability to prioritize and analyse further details of the service delivery activities that are not showing improvement • Evidence of significant improvement in at least 3 of the 7 activities

4.0 Significant improvement	• Indicators in the documentation journal show that service delivery steps the team has worked on have improved • Indicators in the documentation journal show that the successful changes are now a priority and have been adopted • The team has started to make changes in another NCST activity • Evidence of increased numbers of people recovering from malnutrition each month
4.5 Sustainable improvement	• Indicators in the documentation journal show that the steps the team has worked on are showing sustained improvement at least 6 months after the team implemented the change • Teams are working on improvement aims beyond the 7 NCST activities
5.0 Outstanding sustainable results	• All 7 NCST activities are substantially better than at the beginning of the QI work • Improvement work is continuing, and no step has worse results compared to 12 months earlier • All measures of improvement, including the recovery rate for malnourished clients, are consistently over 95% • Teams are working on improvement aims beyond the 7 NCST activities

6.6. Discussion and Module Evaluation (10 minutes)

- Allow time for questions and discuss any issues that need clarification.
- Refer participants to **Reference 6.0: Competencies and Standards for Managing the Quality of NCST Services**. Emphasize the required competencies for managing the quality of NCST services.
- Distribute copies of the **Module 6 Evaluation Form.**
- Explain to the participants the following:
  - Participants should rate whether the training achieved the module's objectives.
  - The evaluation form has five scoring criteria: 1= strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree, and 5=strongly agree.
  - Tick on the appropriate box of the scoring criteria (1–5).

MODULE 6 EVALUATION FORM

Date: _____ Place of work: _____

Please rate each training objective in the table using the scoring system; tick where appropriate.

	1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree
1. The training achieved its objective of giving examples of quality assurance and quality improvement activities					
2. The training achieved its objective of demonstrating how to implement a systematic process to improve the quality of NCST services at a health facility					
3. The training achieved its objective of demonstrating how to formulate an action plan for improving the quality of NCST in routine health care delivery					
4. The training achieved its objective of describing how to monitor quality improvement activities					

General comments:

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

What was good about this module?

What was not good about this module?

What information would you like added to this module to assist you in your work?

Site Visit Guide

5 hours

#	Description	Duration
A.	**Purpose of the Site Visits**	**5 minutes**
B.	**Introduction to the Site Visits**	**10 minutes**
C.	**Site Visits and Materials**	**4 hours**
D.	**Discussion**	**45 minutes**

Note: The site visits should be done only with participants who have completed Modules 1 and 2 of the NCST training.

Purpose	During this module, participants will: 1. Practice assessing and classifying the nutritional status of clients 2. Diagram how clients flow through the health centre
Materials needed	• If possible, extra MUAC tapes, height boards, scales, and BMI wheels/reference tables to bring to the facilities if needed • Extra copies of the anthropometry checklists in **Annex 1** as needed for co-facilitators
Advance preparation	• Identify facilities that are already implementing NCST activities. • Contact facilities to arrange the site visits. Explain the purpose and expectations for the visits. If possible, speak with several service providers with whom participants will work. • One week before the visits, go to the site to confirm the visit and ensure that the facilities will be able to help meet the objectives. Check what anthropometric equipment each site has available. • Arrange for any necessary anthropometric equipment. • Arrange transport and other logistics.

Notes on the Site Visit

- The purpose of the site visit is for participants to get hands-on experience with nutrition assessment and classification. Therefore, it is preferable to split participants into several groups and send each group to a different facility.
- At the facility, you may also decide to split the groups up among different services (PMTCT, ART, TB, etc.). If possible, participants should rotate among services to get experience with different types of clients.
- When organizing the site visits in advance, explain to the health facility management that participants will be working directly with clients, rather than just observing. Discuss how you can achieve the visits' objectives without disrupting health services or burdening the health care providers.
- During the site visit, the trainers should rotate among the small groups, ensuring that assessment and classification are done correctly and providing feedback.
- If possible, bring extra MUAC tapes, height boards, scales, and BMI wheels/reference tables to the facilities in case they are missing any of the equipment.
- Remember to bring the **Site Visit Module,** a **pen, the Facilitator's Guide,** and the **Participant Manual** for reference.

A. Purpose of the Site Visits (5 minutes)

- Explain to participants that the purpose of the site visits is to practice what they have learned in Modules 1 and 2:
- Assessing and classifying the nutritional status of clients
- Explain that participants also will begin to prepare for their quality improvement activities by documenting the flow of ART and ANC/PMTCT clients through the health centre they are visiting.

B. Introduction to the Site Visits (10 minutes)

PRESENTATION: What to expect during the health facility visit

- Read the following points to participants before arriving at the health facility:
  - Today we will visit health facilities to practice what you have learned about nutrition assessment and classification. We will divide you into small groups that will each go to a different facility. At the facility, we may break you into smaller groups that will work at different clinics.
  - Before working with clients, each participant should draw a diagram showing how ART or ANC/PMTCT clients flow through the health facility. You may ask facility managers about any unclear areas. Use the space in **Reference SV.1: ART Clinic Client Flow Diagram** and **Reference SV.2: ANC/PMTCT Clinic Client Flow Diagram** in the **Participant Manual** to draw the diagrams.

- During the visit, each participant should assess and classify at least five clients. Before you begin the assessments, you should tell the client your name and explain that you are taking a course to help you improve your skills in nutrition assessment. The client should consent to participating before you begin.

- Tell participants to refer to **Reference SV.3: NCST Competencies and Standards for Nutrition Assessment and Classification** in the **Participant Manual** for guidance on the required performance standards when assessing nutritional status using anthropometry. (Note: This reference also appears in Module 2.)
- Explain that each group will have a co-facilitator who will serve as a facilitating team leader to observe the group's performance. The team leader will use checklists to evaluate assessment and classification.
- Refer participants to **Reference SV.4: Site Visit Record Form** in the **Participant Manual** and explain that they will record information on each of their clients on the form.
- Explain: Only one participant should interact with each client, with other participants observing to ensure that the assessment and classification are done correctly. To avoid making the client uncomfortable, no more than two people should observe at a time. Observers should remain silent while the client is in the room.
- Explain: After the interaction with each client, the observers should provide feedback on the assessment and classification.

C. Site Visits and Materials (4 hours)

- Each team should be assigned a co-facilitator who is experienced in nutrition assessment and classification to serve as a facilitating team leader.
- The facilitating team leader will observe, support the participants, and report back on the group's performance.
- The facilitating team leader should use the checklists in **Annex 1** below to observe each participant as he/she conducts nutrition assessment and classification using anthropometry.
- The facilitator should provide feedback on tasks that were performed incorrectly and take notes for the discussion with participants after the site visits.

D. Discussion (45 minutes)

After the visit, lead a discussion about what the participants experienced at the facility. Some suggested questions are below:

- Did you learn anything new? Were you surprised by anything?
- What did you learn about the flow of ART and ANC/PMTCT clients?
- What was the nutritional status of the clients you assessed?
- What were the challenges?

ANNEX 1. Anthropometry Checklists

Competency Standards Checklist for Anthropometry

Participant:_____ Team Leader: _____

Competency Standard	Verification Criteria	Y/N	Comment
Weighs an adolescent/ adult client	**Observe and record if the participant performs the following:**		
	Activates the scale and ensures that the scale is calibrated to zero		
	Asks the client to take off shoes, hats, scarves, and head wraps and to remove everything from pockets		
	Asks the client to stand straight, unassisted on the centre of the scale		
	Records the weight in kg to the nearest 100 g (0.1 kg)		
Measures the height of an adolescent/ adult client	**Observe and record if the participant performs the following:**		
	Uses a height board or fastens a non-stretchable tape measure securely to a wall		
	Places the height board vertically on a flat surface		
	Asks the client to remove shoes and headwear		
	Makes sure the client is standing straight and close to the board/wall *(Note: The shoulder blades, buttocks, and heels should touch the vertical surface of the board, with the feet flat on the floor, close together and touching the back of the board. The legs and back should be straight, with arms at the sides. The shoulders should be relaxed and touching the board. The head need not touch the board.)*		
	Asks the client to stand straight and tall and to look straight ahead		
	Ensures that the client is looking straight ahead and brings the moveable head piece to rest firmly on the top of the client's head		
	Reads and records the measurement to the nearest 0.1 cm		
Looks up BMI of an adult using **reference tables**	**Observe and record if the participant performs the following:**		
	Finds the client's height in the left column (y axis)		
	Finds the client's weight in the bottom row (x axis)		
	Correctly identifies the BMI at the point where the two lines meet		
	Records the BMI correctly to the nearest 0.1 (e.g., 17.2)		
Finds BMI of an adult using a **BMI wheel**	**Observe and record if the participant performs the following:**		
	Turns the inner/smaller disc of the BMI wheel until the client's height is aligned with the client's weight		
	Reads the number that the arrow labelled 'BMI' is pointing to on the outer disc. *(The BMI values are coloured turquoise [blue].)*		
	Looks at the box at the bottom of the wheel labelled 'Nutritional status for adults 19 years and older'		
	Reads and records the BMI correctly to the nearest 0.1 (e.g., 17.2)		
	Observe and record if the participant performs the following:		

<table>
<tr><td rowspan="6">Measures MUAC of an adolescent or adult</td><td>Measures MUAC on the left arm</td><td></td><td></td></tr>
<tr><td>Locates the mid-upper arm (from the tip of the shoulder to tip of the elbow) while arm is at a right angle and marks the midpoint</td><td></td></tr>
<tr><td>Relaxes the arm by letting the arm lie alongside the body</td><td></td></tr>
<tr><td>Wraps the MUAC tape around the mark at the midpoint of the upper arm, ensuring that it is in contact with the skin and is neither too tight nor too loose</td><td></td></tr>
<tr><td>Reads the measurement on the larger window of the MUAC tape where the arrows point inward</td><td></td></tr>
<tr><td>Records the MUAC measurement to the nearest 0.1 cm or 1 mm</td><td></td></tr>
<tr><td rowspan="3">Classifies nutritional status using BMI or MUAC and records it</td><td colspan="3">Observe and record if the participant performs the following:</td></tr>
<tr><td>Interprets BMI correctly as seen in the table below:
<table><tr><th>BMI (kg/m2)</th><th>Nutritional status</th></tr><tr><td>< 16.0</td><td>Severe underweight</td></tr><tr><td>16.0 to 18.4</td><td>Moderate underweight</td></tr><tr><td>18.5 to 24.9</td><td>Normal</td></tr><tr><td>25.0 to 29.9</td><td>Overweight</td></tr><tr><td>≥ 30.0</td><td>Obese</td></tr></table></td><td></td></tr>
<tr><td>Interprets MUAC correctly as seen in the table below:
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</table>

Competency Standards Checklist for Anthropometry

Participant:_____ Team Leader: _____

Competency Standard	Verification Criteria	Y/N	Comment
Weighs an adolescent/ adult client	**Observe and record if the participant performs the following:**		
	Activates the scale and ensures that the scale is calibrated to zero		
	Asks the client to take off shoes, hats, scarves, and head wraps and to remove everything from pockets		
	Asks the client to stand straight, unassisted on the centre of the scale		
	Records the weight in kg to the nearest 100 g (0.1 kg)		
Measures the height of an adolescent/ adult client	**Observe and record if the participant performs the following:**		
	Uses a height board or fastens a non-stretchable tape measure securely to a wall		
	Places the height board vertically on a flat surface		
	Asks the client to remove shoes and headwear		
	Makes sure the client is standing straight and close to the board/wall *(Note: The shoulder blades, buttocks, and heels should touch the vertical surface of the board, with the feet flat on the floor, close together and touching the back of the board. The legs and back should be straight, with arms at the sides. The shoulders should be relaxed and touching the board. The head need not touch the board.)*		
	Asks the client to stand straight and tall and to look straight ahead		
	Ensures that the client is looking straight ahead and brings the moveable head piece to rest firmly on the top of the client's head		
	Reads and records the measurement to the nearest 0.1 cm		
Looks up BMI of an adult using **reference tables**	**Observe and record if the participant performs the following:**		
	Finds the client's height in the left column (y axis)		
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	Reads the number that the arrow labelled 'BMI' is pointing to on the outer disc *(The BMI values are coloured turquoise [blue].)*		
	Looks at the box at the bottom of the wheel labelled 'Nutritional status for adults 19 years and older'		
	Reads and records the BMI correctly to the nearest 0.1 (e.g., 17.2)		
Measures MUAC of an adolescent or adult	**Observe and record if the participant performs the following:**		
	Measures MUAC on the left arm		
	Locates the mid-upper arm (from the tip of the shoulder to tip of the elbow) while arm is at a right angle and marks the midpoint		

<table>
<tr><td></td><td>Relaxes the arm by letting the arm lie alongside the body</td><td></td><td></td></tr>
<tr><td></td><td>Wraps the MUAC tape around the mark at the midpoint of the upper arm, ensuring that it is in contact with the skin and is neither too tight nor too loose</td><td></td><td></td></tr>
<tr><td></td><td>Reads the measurement on the larger window of the MUAC tape where the arrows point inward</td><td></td><td></td></tr>
<tr><td></td><td>Records the MUAC measurement to the nearest 0.1 cm or 1 mm</td><td></td><td></td></tr>
<tr><td rowspan="4">Classifies nutritional status using BMI or MUAC and records it</td><td colspan="3">Observe and record if the participant performs the following:</td></tr>
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Participant:_____ Team Leader: _____

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	Asks the client to stand straight, unassisted on the centre of the scale		
	Records the weight in kg to the nearest 100 g (0.1 kg)		
Measures the height of an adolescent/ adult client	**Observe and record if the participant performs the following:**		
	Uses a height board or fastens a non-stretchable tape measure securely to a wall		
	Places the height board vertically on a flat surface		
	Asks the client to remove shoes and headwear		
	Makes sure the client is standing straight and close to the board/wall *(Note: The shoulder blades, buttocks, and heels should touch the vertical surface of the board, with the feet flat on the floor, close together and touching the back of the board. The legs and back should be straight, with arms at the sides. The shoulders should be relaxed and touching the board. The head need not touch the board.)*		
	Asks the client to stand straight and tall and to look straight ahead		
	Ensures that the client is looking straight ahead and brings the moveable head piece to rest firmly on the top of the client's head		
	Reads and records the measurement to the nearest 0.1 cm		
Looks up BMI of an adult using **reference tables**	**Observe and record if the participant performs the following:**		
	Finds the client's height in the left column (y axis)		
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	Measures MUAC on the left arm		
	Locates the mid-upper arm (from the tip of the shoulder to tip of the elbow) while arm is at a right angle and marks the midpoint		
	Relaxes the arm by letting the arm lie alongside the body		

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<tr><td></td><td>Reads the measurement on the larger window of the MUAC tape where the arrows point inward</td><td></td><td></td></tr>
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<tr><td rowspan="4">Classifies nutritional status using BMI or MUAC and records it</td><td colspan="2">Observe and record if the participant performs the following:</td><td></td></tr>
<tr><td>Interprets BMI correctly as seen in the table below:
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Competency Standards Checklist for Anthropometry

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	Uses a height board or fastens a non-stretchable tape measure securely to a wall		
	Places the height board vertically on a flat surface		
	Asks the client to remove shoes and headwear		
	Makes sure the client is standing straight and close to the board/wall *(Note: The shoulder blades, buttocks, and heels should touch the vertical surface of the board, with the feet flat on the floor, close together and touching the back of the board. The legs and back should be straight, with arms at the sides. The shoulders should be relaxed and touching the board. The head need not touch the board.)*		
	Asks the client to stand straight and tall and to look straight ahead		
	Ensures that the client is looking straight ahead and brings the moveable head piece to rest firmly on the top of the client's head		
	Reads and records the measurement to the nearest 0.1 cm		
Looks up BMI of an adult using **reference tables**	**Observe and record if the participant performs the following:**		
	Finds the client's height in the left column (y axis)		
	Finds the client's weight in the bottom row (x axis)		
	Correctly identifies the BMI at the point where the two lines meet		
	Records the BMI correctly to the nearest 0.1 (e.g., 17.2)		
Finds BMI of an adult using a **BMI wheel**	**Observe and record if the participant performs the following:**		
	Turns the inner/smaller disc of the BMI wheel until the client's height is aligned with the client's weight		
	Reads the number that the arrow labelled 'BMI' is pointing to on the outer disc *(The BMI values are coloured turquoise [blue].)*		
	Looks at the box at the bottom of the wheel labelled 'Nutritional status for adults 19 years and older'		
	Reads and records the BMI correctly to the nearest 0.1 (e.g., 17.2)		
Measures MUAC of an adolescent or adult	**Observe and record if the participant performs the following:**		
	Measures MUAC on the left arm		
	Locates the mid-upper arm (from the tip of the shoulder to tip of the elbow) while arm is at a right angle and marks the midpoint		
	Relaxes the arm by letting the arm lie alongside the body		

<table>
<tr><td></td><td>Wraps the MUAC tape around the mark at the midpoint of the upper arm, ensuring that it is in contact with the skin and is neither too tight nor too loose</td><td></td><td></td></tr>
<tr><td></td><td>Reads the measurement on the larger window of the MUAC tape where the arrows point inward</td><td></td><td></td></tr>
<tr><td></td><td>Records the MUAC measurement to the nearest 0.1 cm or 1 mm</td><td></td><td></td></tr>
<tr><td rowspan="4">Classifies nutritional status using BMI or MUAC and records it</td><td colspan="3">Observe and record if the participant performs the following:</td></tr>
<tr><td>Interprets BMI correctly as seen in the table below:
<table><tr><th>BMI (kg/m2)</th><th>Nutritional status</th></tr><tr><td>< 16.0</td><td>Severe underweight</td></tr><tr><td>16.0 to 18.4</td><td>Moderate underweight</td></tr><tr><td>18.5 to 24.9</td><td>Normal</td></tr><tr><td>25.0 to 29.9</td><td>Overweight</td></tr><tr><td>≥ 30.0</td><td>Obese</td></tr></table></td><td></td><td></td></tr>
<tr><td>Interprets MUAC correctly as seen in the table below:
<table><tr><th>Group</th><th>Severe underweight</th><th>Moderate underweight</th><th>Normal</th></tr><tr><td>Adolescents (15–18 years)</td><td>< 185 mm</td><td>185 to 219 mm</td><td>≥ 220 mm</td></tr><tr><td>Adults (including pregnant and lactating women up to 6 months post-partum)</td><td>< 190 mm</td><td>190 to 219 mm</td><td>≥ 220 mm</td></tr></table></td><td></td><td></td></tr>
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