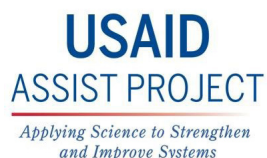# MODULE 6. Integrating Quality Improvement into NACS

MAY 2018

QI

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Introduction

Integrating Nutrition Assessment, Counseling and Support into Routine Clinical Care Through Quality Improvement (QI)

You are the head of a health clinic with a high-volume of patients, including HIV patients. You are living and working in an area where food security is not stable and malnutrition is widespread. You are aware that many of your clinic's patients are not responding well to their HIV treatment regimen, and patients are failing to return to the clinic for their scheduled appointments.

Good nutrition and food security are vital to the health of people living with HIV (PLHIV). HIV infection increases an individual's energy and other nutrient requirements. Malnutrition accelerates the progression from HIV infection to AIDS and leaves PLHIV more vulnerable to opportunistic infections that further compromise their health and well-being. Poor nutrition also affects the efficacy of antiretroviral drugs and the adherence of PLHIV to those drugs. However, nutrition support, as practiced, is not a part of routine care for PLHIV in the national health system even though it is mandated in the clinical guidelines. PLHIV with nutrition issues are therefore not receiving the comprehensive care and support they need, which subsequently impacts their ability to manage their HIV infection properly.

Recently, health facilities in your district have been informed that routine monitoring and improving the nutrition status of PLHIV attending antiretroviral therapy (ART) clinics is a priority for the year. The goal is to identify all patients who present at the clinic with severe and moderate malnutrition (SAM/MAM) and return them to normal nutrition status. SAM/MAM patients who do not know their HIV status should be referred for HIV testing, while SAM/MAM PLHIV on ART should be referred for a viral load test. You will be using the quality improvement (QI) approach to establish this as routine practice and achieve this goal.

Your country's national HIV/AIDS strategy includes the adoption, adaptation, and scale-up of nutrition assessment, counseling, and support (NACS) as a standard of care, but implementing and integrating NACS into HIV care and treatment has been a challenge.

The components of NACS are:

1) Conducting a **nutrition assessment** to classify a patient's nutrition status and follow up with the necessary interventions. Nutrition status classifications include SAM, MAM, normal nutrition status, and over-nutrition. In the context of HIV/AIDS, NACS prioritizes

identifying individuals with SAM/MAM for referral to HIV counseling and testing (HCT) if their HIV status is uncertain or PLHIV with SAM/MAM for referral for viral load (VL) testing and clinical examination to assess the contribution of underlying infection and treatment failure on weight loss and wasting. Patients should be provided therapeutic and supplementary feeding support until they exceed the MAM cutoff (MAM is defined in children 6–59 months as having a MUAC ≥ 115 to < 125 mm or a weight-to-height z-score ≥ -3 and < -2 in children 0–-–59 months. For children/adolescents 5–19 years of age, MAM (moderate thinness) is defined as a BMI-for-age z-score ≥ -3 to < -2 and among adults a BMI of < 18.5–16.0).

2) Providing clients with nutrition counseling to unpack the results of the nutrition assessment and develop a course of action to improve the client's nutrition and health status. Counseling includes interactive one-on-one and group counseling.

3) Offering nutrition support such as therapeutic and supplementary foods to treat acute malnutrition and referrals to economic strengthening and livelihood support services.

This module will help you use QI to assess the quality of care processes, integrate NACS services and improve outcomes for patients receiving those services.
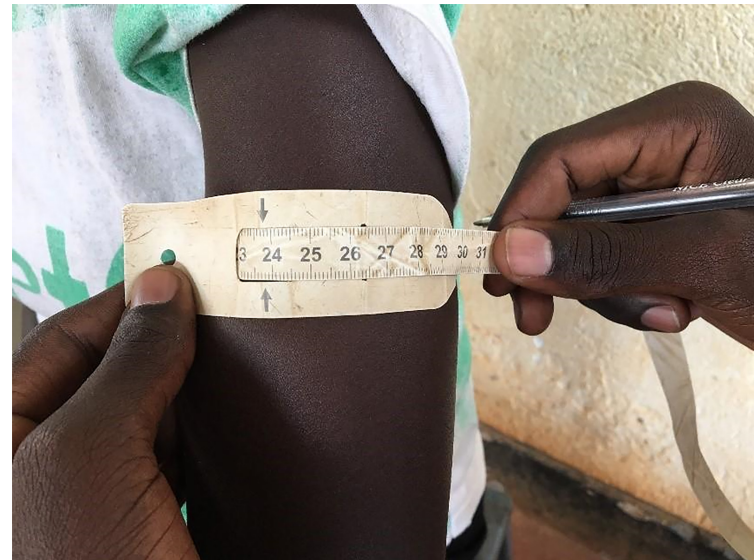
A patient's mid-upper arm circumference (MUAC) is taken to determine her nutrition status.

The Model for Improvement

QI in healthcare is an approach that places individuals who best-understand clinic processes at the heart of making changes that will improve those processes toward achieving better health outcomes for patients. These individuals are the healthcare workers, volunteers, expert patients/patient representatives, and other facility staff who provide the services and manage the daily running of the facility. They know the patients, the data, the services, and the clinic flow intimately. With this approach, improving processes becomes a part of the facility culture, conducted continuously with the use of change ideas and the analysis of data that explains whether those changes result in improvement.

This approach is based on the *Model for Improvement*, developed by Associates in Process Improvement (see figure). QI efforts can be large or small, simple or complex, and involve few or many people, within clinics or communities. Regardless of the size and complexity of the improvement effort, we will follow the same four-step sequence in this approach: identifying the area for improvement, analyzing the current quality and process of care, developing possible solutions to address the identified problem, and then testing those changes, using the Plan-Do-Study-Act (PDSA) cycle (see Step 6 for more information about the PDSA cycle).

FOUR STEPS TO QUALITY IMPROVEMENT

1. IDENTIFY
↓
2. ANALYZE
↓
3. DEVELOP
↓

PLAN

ACT | 4. TEST AND IMPLEMENT | DO

STUDY
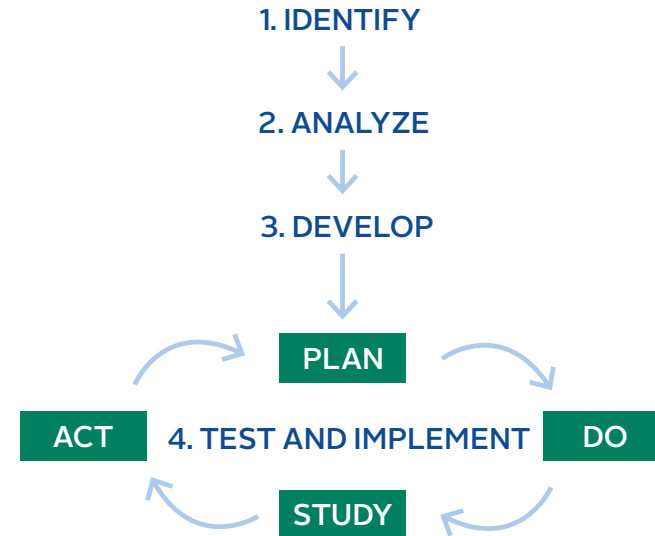
Source: The Improvement Guide: A Practical Approach to Enhancing Organizational Performance, 2nd ed. Langley and others (Jossey-Bass, 2009).

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Step 1: Developing an Improvement Aim

Improvement aims are identified using information from patient or staff feedback, clinic or patient data, program monitoring indicators, country/donor priorities, or direct observations. An improvement aim narrows down the scope of work to a very specific process that needs to be improved.

A good improvement aim has:

- A defined **boundary** that specifies the scope of the improvement goal
- Specific **numerical goals or targets** for **outcomes** that are ambitious but achievable
- A **timeframe** (how much improvement by when?)
- **Guidance** on how the aim will be achieved and measured

For example, health facilities in your area have been given a mandate to improve the nutrition status of PLHIV attending ART clinics, using NACS. This mandate is quite broad, so you must use other information at hand to understand what exactly needs to be done.

Using the NACS components as a reference (see Introduction), you know that the first step in implementing NACS is to ensure that all patients coming for their clinic appointment are assessed and categorized by their nutrition status and that status is documented.

Perform a Baseline Assessment

To inform the development of your improvement aim, you and your care team must collect at least 6 months of baseline clinic data (using medical records and/or facility data) for clients who are being assessed and categorized by their nutrition status. You may find that your baseline is at zero or is only that small fraction of patients who present with very advanced SAM. Your staff may have been trained to implement NACS, but often the provision of NACS services does not get integrated into the clinic process. This is where QI comes in—to identify problems and areas that need improvement, and then to work on improving on those areas.

Once you have collected your baseline data, you will analyze the information and develop an appropriate improvement aim.

EXAMPLE
In our clinic, we will increase routine nutrition assessment and categorization of all patients who come to the clinic from 0% to 70% within 9 months using weight-to-height (e.g., z-score, BMI/age, or BMI) calculations.

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Step 2: QI Training

It is beneficial to have at least two to three members of your care team trained in basic QI. The training can be on-line, on-site at the clinic or formal classroom style. This training will cover the key principles of improvement science and methods for implementing a QI project in any setting. During the training, the facilitators will work with participants to refine and finalize the first improvement aim.

In collaborative improvement, a group of clinics from the same area and working on the same aim meet, and can be trained together. These quarterly learning sessions provide a forum for clinics to present their progress, share ideas, and develop action plans for the next phase of their improvement work.

In most settings, it is not feasible to send the entire team away for QI training. You can engage the rest of the team by having the trained staff members lead a half-day QI orientation at your facility, ideally with the support of the organization that conducted the QI training. However, QI is an iterative approach that cannot be fully grasped in a few hours or days. Whatever the training and orientation to QI, it must be followed up with learning via application of the concepts, and supplemented with guidance from peers and advisors who are knowledgeable in improvement.

QI training module developed by USAID ASSIST

More on collaborative improvement
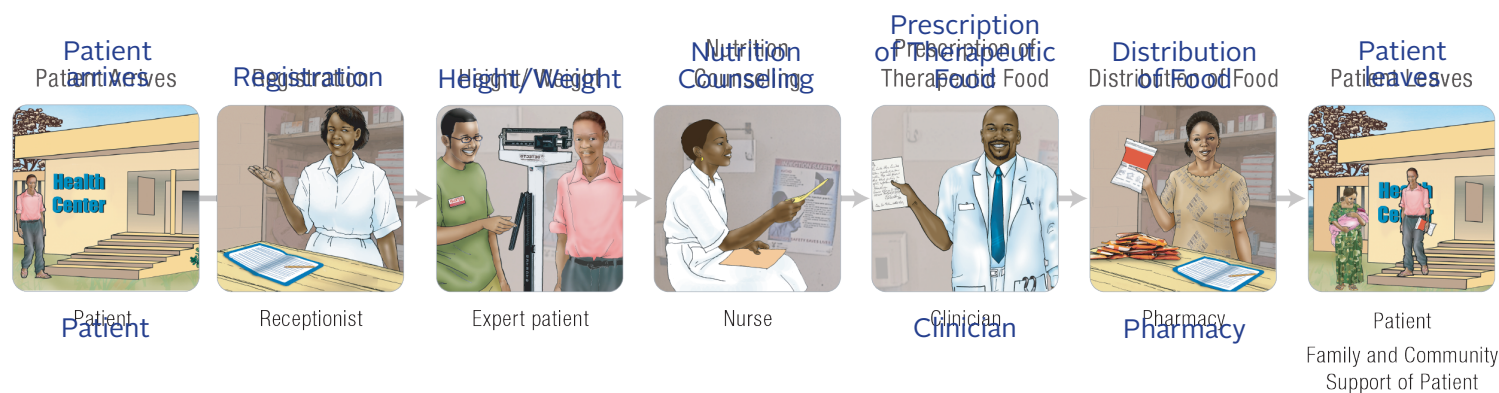
Step 3: Forming a QI Team

Once the aim for improvement has been defined and QI has been introduced to your care team, you can establish your improvement team. You need to think about the people who you need to be on the team to help accomplish the specific aim. A representative for each of the different steps of the process you are trying to improve should be included in the team. The members can include clinicians, nurses, volunteers, expert patients, receptionists, security guards etc.—anyone who is in some way involved in the clinic process and who can contribute to improving it to better integrate nutrition within clinical services.

Each team member will take on various roles. The key roles in an improvement team are:

- **Team leader:** responsible for delegation of responsibilities and guiding the team
- **Record-keeper:** documents discussions at team meetings
- **Data manager:** supervises collection and leads analyzes of data with team to determine if a change is resulting in improvement

An improvement team should not be too small or too large and may depend on the size of the clinic; 6–8 people comprise an ideal team size for a hospital or large clinic. The team leader should establish a regular time for the team to meet and review their work, and enforce that schedule to ensure that the team is making progress.

STEPS AND PARTICIPANTS IN A PATIENT VISIT TO THE CLINIC

Patient arrives — Registration — Height/Weight — Nutrition Counseling — Prescription of Therapeutic Food — Distribution of Food — Patient leaves

Patient — Receptionist — Expert patient — Nurse — Clinician — Pharmacy — Patient / Family and Community Support of Patient

Step 4: Mapping Key Processes to Identify Barriers

More detail on drawing flowcharts

The first thing the QI team should do is draw a flowchart to better understand the current clinic process for patients attending care and treatment services, including where there are barriers or unclear processes/procedures. A flowchart is a tool for mapping a process to better understand all of the steps and handoffs involved and where there is repetition, confusion, waste, or opportunity for making it more efficient.

Steps to Create a Flowchart

1. Decide on the beginning and end points of the process to be flow-charted

2. Identify the steps of the process

3. Link the steps with arrows showing direction

4. Review the draft to see whether the steps are in their logical order

Teams can review their completed flowchart using the following questions as a guide:

• Is the sequence of steps appropriate?

• Is this step needed?

• Are there missing steps?

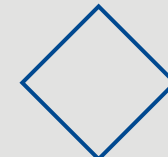• Where are the delays/errors?

• Are these steps unclear?

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Flowchart symbols:

Beginning/End   Process Step   Decision

Document   Unclear Process   Flow Arrow

One flow line out of a step:
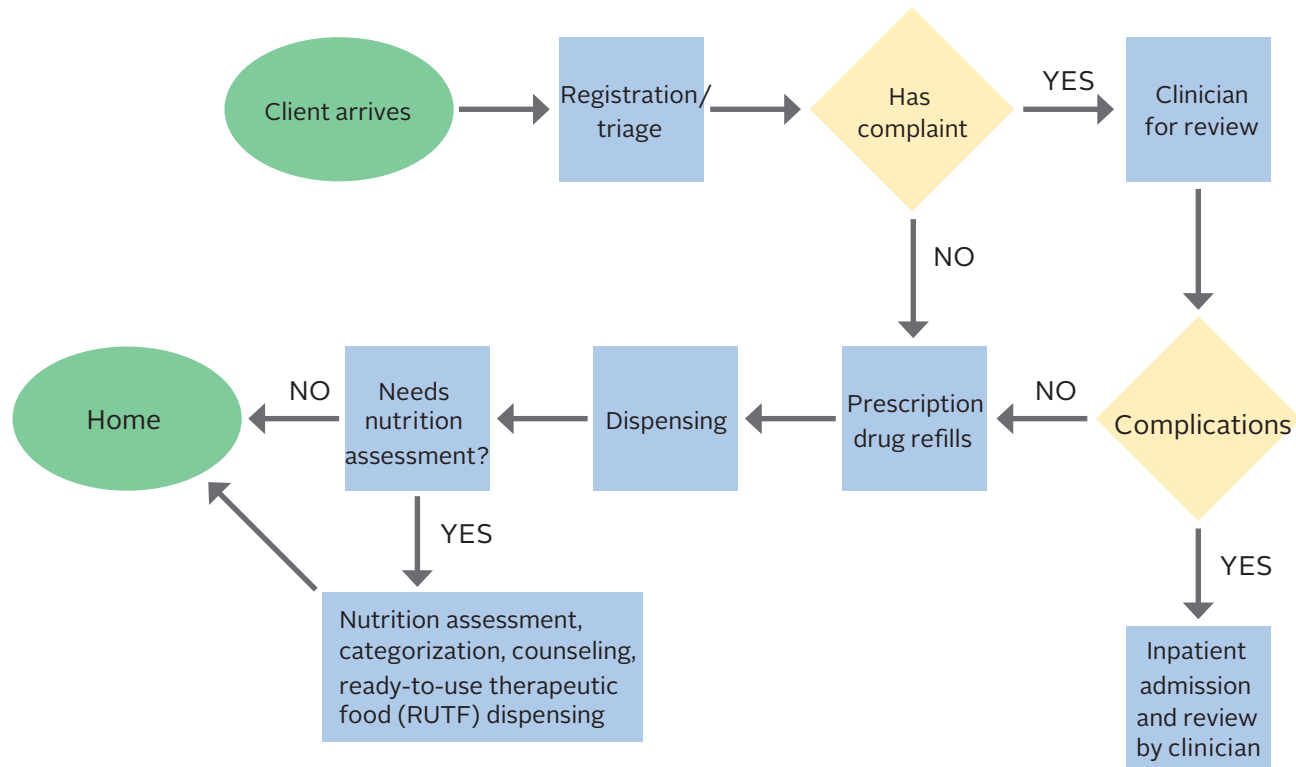
Patient picks up drugs at pharmacy

Two flowlines out of a decision (must ask YES/NO question):

Clinician orders test?   YES

NO

8
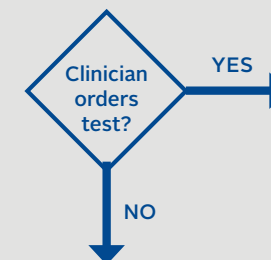
The following flow chart was developed by a QI team in Uganda before they began QI to implement nutrition interventions in their facility. Once the team mapped out their clinic process, they could better visualize the client flow and make decisions about how to adapt the flow to accommodate NACS service integration.

CLINIC FLOW BEFORE QI

This flow chart has more steps to accommodate a more detailed clinic flow. The services provided at registration are listed. It is clear when nutrition assessment is conducted and when the patient is categorized for nutrition status. The factors for inpatient admission or discharge are also more specific.

USAID ASSIST's additional tools to identify barriers

CLINIC FLOW AFTER QI

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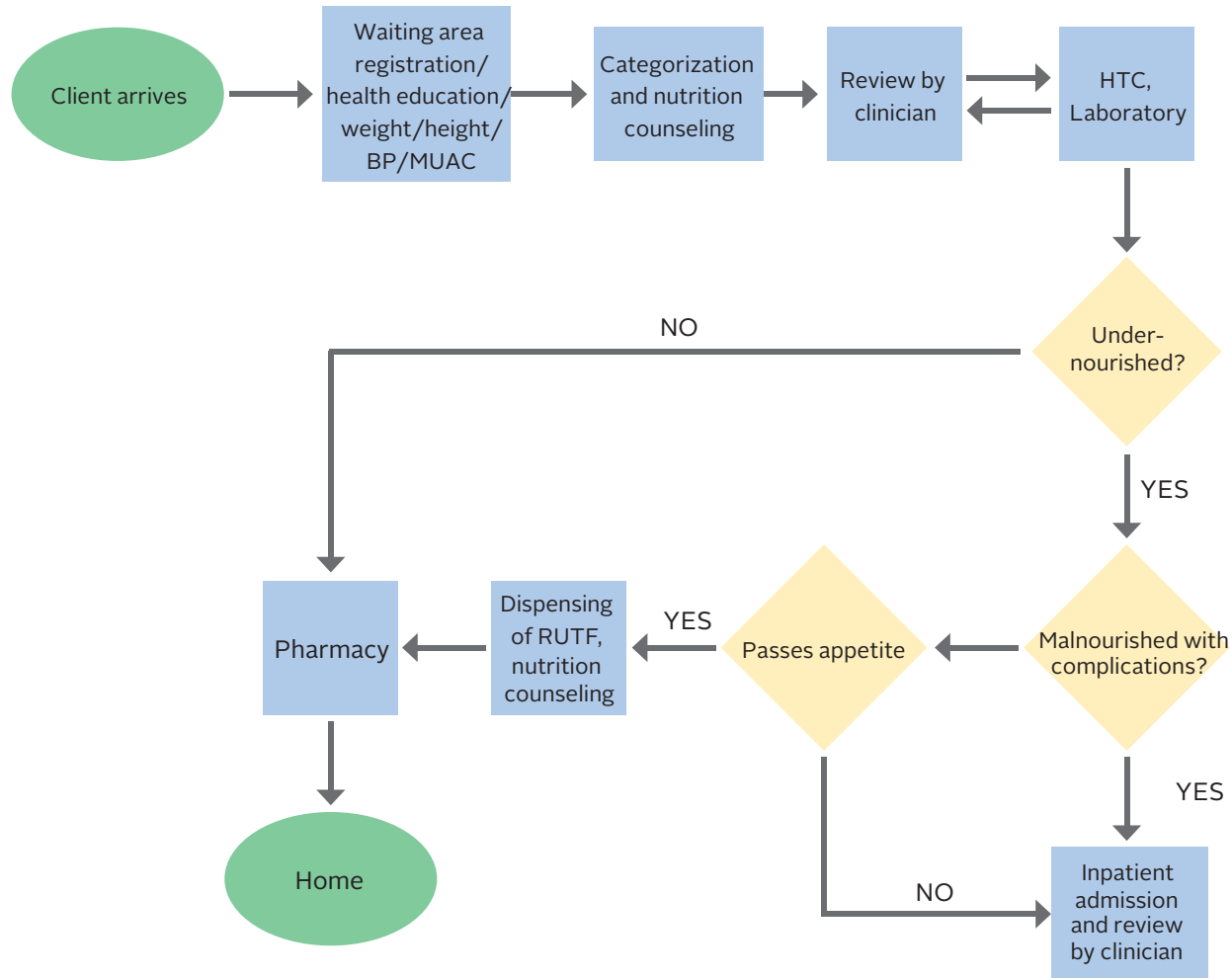
Step 5: Developing Indicators

Indicators are used to measure whether or not a change resulted in improvement in service delivery, as well as to link service delivery to clinical measures of nutrition and health status. Measuring progress using indicators helps teams understand which tested changes are effective based on how they affect the indicator from a list of all the changes they are testing.

A good indicator should:

• be clear and unambiguous

• be quantifiable

• have a clear numerator and denominator

Teams must identify the source of the indicator data, the person(s) responsible for collecting the data, and the frequency with which the data are to be collected. If the data for the indicator are not currently being recorded, teams must decide how, where, and by whom the data will be recorded. For example, QI teams integrating NACS into their clinic process draw a new column in their register to record whether a patient was assessed and categorized for nutrition status.

For example, your clinic's improvement aim is:

In our clinic, we will increase routine nutrition assessment and categorization of all patients from 0% to 70% within 9 months using BMI calculations.

From this aim, you can develop an indicator: % of HIV+ patients assessed and categorized for nutrition status using BMI.

The indicator is defined in more detail below.

Indicator: Describe what you are measuring	% of HIV+ clients assessed and categorized for nutrition status using BMI
Numerator: The number of times your process was completed properly	# of HIV+ clients assessed and categorized for nutrition status using BMI
Denominator: The total number of times you ran your process	# of HIV+ clients seen in the clinic
Source: Where are you getting your data from?	Clinic register
Person responsible: Individual who will ensure that the data are collected and maintained	Nurses, auxillary health workers and clinic volunteers
Frequency: How often the data will be collected	Daily, then aggregated weekly. It is important that data are collected and analyzed more frequently when applying QI so that the team can rapidly assess if the change idea is resulting in improvement or not. Once the peak desired level of improvement has been achieved (in this case, 70% of clients are assessed and categorized for nutrition status at each clinic visit), the indicator should be monitored often to ensure the improvement is sustained.

Step 6: Testing Changes

The Model for Improvement and the PDSA Cycle

The Model for Improvement is all about testing a change. The model specifically looks at:

What are we trying to accomplish?

How will we know we achieved it?

What changes can we make?

The first step is to plan what change you would like to test (plan); then implement the change (do); analyze whether the change has achieved the desired result (study); and if it has achieved good results then you should scale up the change and integrate it into the clinic process (act). If it has not achieved the intended results, consider testing a new change and beginning the process again.

The changes should be tested one at a time and for just a few days before the QI team reviews the data to see if the change resulted in improvement.

Changes could be easy to integrate (can be done "tomorrow") and those that the team agrees could be effective. They may be innovative, or they can be a variation of something that has been tried before. Changes that have worked elsewhere should be tested to see if they suit your facility's context.

The following are a list of changes that have been tested by QI teams to improve assessment and categorization of nutrition status in their clinics, However, the changes you test should be tailored to your clinic's context. A change that has worked in another facility may not necessarily work in yours.

- BMI assessment is conducted at registration by clinic volunteers
- Designate and train specific support staff members to conduct BMI assessment
- Improve documentation in the registers by hand-drawing a new column to record clients' nutrition status

MODEL FOR IMPROVEMENT

What are we trying to accomplish?
How will we know we achieved it?
What changes can we make?

Act | Plan
Study | Do
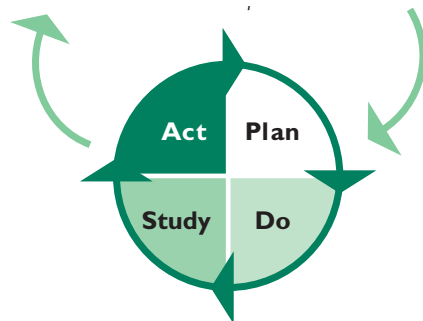
Adapted from Associates in Process Improvement, 1996

A health volunteer calculates a patient's BMI at registration.

Step 7: Plotting Your Time-Series Chart

During the QI process, you will need to chart your data continuously to assess the effectiveness of a change being tested. Time-series charts (also known as run charts) are used to plot data for an indicator over time. Collecting data over time in one place makes it possible to determine if any variation in the indicator is related to or attributable to the change being tested.

When developing a time series chart, you need to ensure that the chart has the following components:

- Clear and well defined title that includes what is being measured
- X and Y axes with clear scales and labels
- A denominator that is defined and shown at the bottom of the chart

The following is an example of a time-series chart that was plotted by a health facility in Zambia. The chart is annotated to show what changes were tested and the reasons behind rises and falls in percentage. This facility started at 0% and tested several changes to ultimately achieve and sustain 100% for this indicator.

PERCENTAGE OF CLIENTS ASSESSED AND CATEGORIZED FOR NUTRITION STATUS AT KAMFINSA HEALTH CENTRE, JUNE–SEPTEMBER 2015

Denominator: Total number of clients seen at Kamfinsa Health Centre

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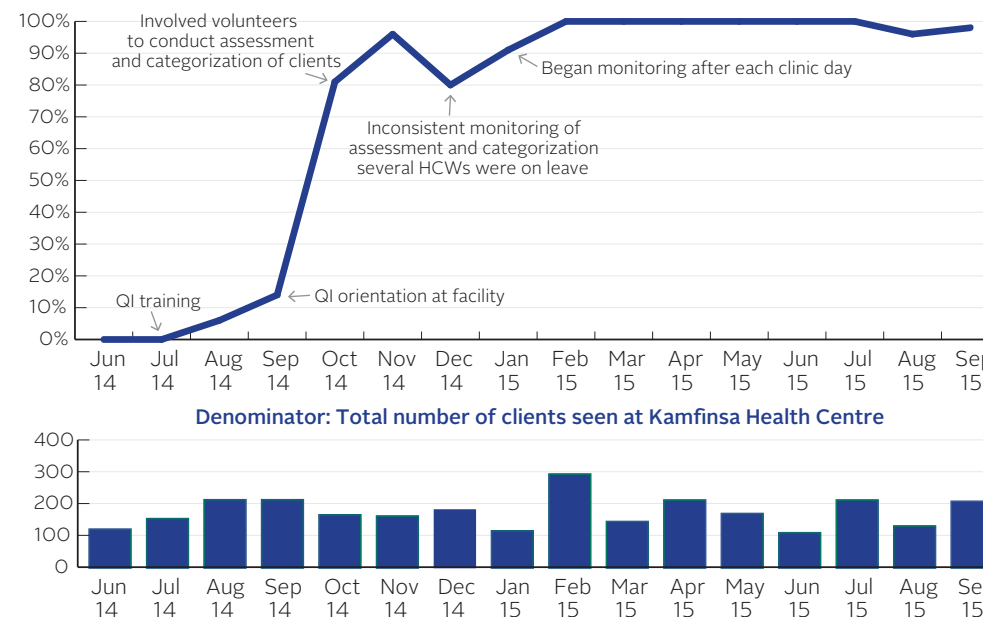
Step 8: Moving to Another Improvement Aim and Monitoring Past Aims

Once the first improvement aim has been accomplished, the QI team can move on to subsequent areas for improvement in other areas of NACS. It is important that the team uses data to identify a gap and inform another area for improvement. The team may decide on the next area for improvement in collaboration with other teams at a quarterly learning session, or move on individually and discuss their progress at the next learning session. Subsequent areas for improvement include, but are not limited to:

- Nutrition counseling
- Provision of therapeutic and supplementary foods for malnourished clients.
- Retention of malnourished patients in care and adherence to treatment for infections
- Improved nutritional status
- Health outcomes for malnourished patients
- Referrals/links to community social, economic, and livelihood support

When working on the next improvement aim, the team will repeat the process of developing indicators, reviewing the clinic flow, testing changes, and plotting a time-series chart for the indicator(s) in order to track processes.

Continued Monitoring

Once an improvement aim has been achieved, the QI team may not collect data for that indicator very frequently. However, the team should monitor the indicator from time to time to ensure that they improvement has been sustained. If the team finds that the improvement has not been sustained, it will be necessary to test additional changes to get to the desired level of improvement again.

Conclusion

The work of a QI team is most effective when improvements are adopted by the entire facility and established as a permanent part of the facility's care process. The improvement team can help make QI an ingrained part of the facility's culture by working with facility and district management and Ministry of Health (MOH) officials to incorporate successful changes into MOH guidelines, policies and procedures, job aides, and training materials. Management at all levels can sustain improvement and take on new clinical areas for improvement by creating an enabling environment and supporting structures such as district improvement coaches, a QI department within MOH, and a budget for QI. A care process that is continuously improved to ensure the highest level of efficiency can save time and money, and ultimately improve the health and lives of the patients it serves.

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