

# Quality Improvement in Healthcare

Module 25 | Strengthening Interprofessional Education for HIV (STRIPE HIV)

## Facilitator Guide



### Overview

#### Goal

The goal of this module is for learners to understand the role that both front-line healthcare workers and local leaders can play in evaluating and improving healthcare quality.

#### Objectives

By the end of the module, the learners will be able to:

1. Describe what comprises “quality” in healthcare delivery
2. Appreciate their role in delivering high-quality healthcare
3. Define the components necessary to measure quality (e.g., quality indicators) and appreciate how quality indicators are used
4. Understand the use of quality indicators in the care for people with HIV
5. Investigate the root cause(s) of a low-performing quality indicator
6. Apply the Plan-Do-Study-Act (PDSA) framework to improve healthcare quality and study its impact

#### Workshop Roadmap

Workshop Timeline: 110 minutes

Duration	Content	Activities
5 minutes	<a href="#">Introduction</a>	<a href="#">Welcome</a> (5 minutes)
25 minutes	<a href="#">Objective #1</a> : Describe what comprises “quality” in healthcare delivery	<ul style="list-style-type: none"><li>• <a href="#">Activity 1, Part 1</a>: Small group discussion</li><li>• <a href="#">Activity 1, Part 2</a>: Structures, Processes, Outcomes</li></ul>
10 minutes	<a href="#">Objective #2</a> : Appreciate your role in delivering high-quality healthcare	<a href="#">Activity 2</a> : Large group discussion
20 minutes	<a href="#">Objective #3</a> : Define the components necessary to measure quality (e.g., quality indicators) and appreciate how quality indicators are used	<ul style="list-style-type: none"><li>• <a href="#">Activity 3, Part 1</a>: Design a quality indicator in small groups</li><li>• <a href="#">Activity 3, Part 2</a>: Large group discussion</li></ul>
15 minutes	<a href="#">Objective #4</a> : Understand the use of quality indicators in the care for people with HIV	<a href="#">Activity 4</a> : Small and large group discussion of quality indicators
15 minutes	<a href="#">Objective #5</a> : Investigate the root cause(s) of a low-performing quality indicator	<a href="#">Activity 5</a> : Small group “5 Whys” activity
15 minutes	<a href="#">Objective #6</a> : Apply the Plan-Do-Study-Act (PDSA) framework to improve healthcare quality and study its impact	<a href="#">Activity 6</a> : Small group “Plan” activity
5 minutes	<a href="#">Conclusion</a>	<a href="#">Review Objectives</a> (5 minutes)



**Strengthening  
Interprofessional  
Education  
for HIV**

## Workshop Setup

### How to tailor this module

Measures of healthcare quality may be quite different in different settings. For example, important quality metrics in an outpatient clinic (e.g., control of hypertension) are often quite different than a hospital setting at a district or regional level (e.g., mortality from cryptococcal meningitis). As much as possible, try to center the discussion on healthcare quality around what is relevant to the settings where learners work. Facilitators may find it helpful to adapt this material to fit their available time and the needs of their local context.

### Reminder to facilitators

Key learning points in the answers will be underlined. Please emphasize these learning points as you move through the module.

### Additional facilitator materials

M25 Facilitator Answer Slides (PowerPoint)

### Additional learner materials (ALM)

- [PEPFAR Indicators](#) (Used in Activity 4)
- [Plan-Do-Study-Act \(PDSA\) Worksheet](#) (Used in Activity 6)
- [A Model for Measuring Quality Care](#) (NHS Improvement Brief)
- Fishbone Diagram Example (on course website)

## Acronyms/Abbreviations

ALM	Additional Learner Material
ART	Antiretroviral Therapy
cQI	Continuous Quality Improvement
PDSA	Plan-Do-Study-Act
PEPFAR	U.S. President's Emergency Plan for AIDS Relief

## Key Terms

- **Quality (of care) / Healthcare quality:** There is no single agreed-upon definition. One well-known definition says healthcare quality should focus on six goals: (1) Safe, (2) Effective, (3) Patient-centered, (4) Timely, (5) Efficient, and (6) Uniform care
- **Quality Indicator (or quality metric or measure):** A statistic used to evaluate (and track) an aspect of healthcare quality.
- **PEPFAR Indicators:** Standardized metrics used to measure the performance, outcomes, and impact of HIV/AIDS programs funded by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). These indicators track services like testing, treatment, prevention, and care to support data-driven decision-making and accountability.
- **Donabedian model:** A framework for thinking about healthcare quality that focuses on quality indicators related to the structure, process, and outcomes of healthcare delivery.
- **Root cause:** Underlying reason (or primary factor) that leads to a problem or undesired outcome. Identifying the root cause helps address the source of the issue rather than just its symptoms.
- **5 Whys Method:** A model to help find the main systems problem that is causing poor performance. It usually involves asking "Why?" five times, but it can take more or fewer questions.
- **Plan-Do-Study-Act (PDSA):** A framework adopted for quality improvement activities in healthcare. It is a four-step iterative process.

## Teaching Content with Objectives and Answer Key

### Introduction (5 minutes)

#### Facilitator Instructions

Please greet the learners and welcome them to the training. Facilitators can also conduct an “icebreaker” activity of their choice to start the module. Most of the activities in this module will be conducted in small interprofessional groups, so please be ready to organize your learners into small groups, each comprised of as much of a mix of health professions as possible. **Advance to Slide 2** (an overview of the module) as you introduce the modules to learners.

**Welcome to Module 25 – Quality Improvement.** This module will cover how healthcare quality is defined and measured, why it’s important, and what all healthcare workers can do to evaluate and improve the quality of healthcare we deliver. In our busy professional lives, it is easy to fall into the habit of fulfilling our daily job responsibilities without stepping back and considering how our actions fit into the broader health of our patients and the communities we serve. For example, frontline staff in a busy clinic evaluating and treating many patients with HIV may not have clear knowledge of the quality of care being delivered there, such as:

- How many patients are virally suppressed? What are the reasons for failing to achieve viral suppression?
- Are patients being hospitalized at high rates? Are the hospitalizations avoidable?
- Are patients receiving appropriate screening and preventive measures?
- Are patients satisfied with their care?

#### Clinical Vignette – Caring for Women with HIV

You are working in an outpatient clinic associated with a district hospital where you treat patients living with HIV. Your clinic has different days of the week dedicated to caring for certain populations, and today’s clinic focuses on women’s health. In the morning, you see a number of women with HIV who are pregnant or who have recently given birth. Each clinic day is busy, and during lunch today, there is an all-staff meeting to discuss healthcare quality at the clinic.

### Activities

#### **Objective 1 - Activity 1 (25 minutes): Describe with comprises “quality” in healthcare delivery.**

“Quality” in healthcare has no universally accepted definition. One popular definition is promoted by the National Academy of Medicine in the United States, which describes healthcare quality as being centered around six core aims:

1. Safety
2. Effectiveness
3. Patient-centeredness
4. Timeliness
5. Efficiency
6. Uniform care

## Activity 1, Part 1 (5 minutes): What do you already know?

**Learner Instructions:** Think about the patients and the clinic, particularly expecting mothers who are living with HIV. In small groups, make a list of possible answers to these two questions:

- What needs to be in place (e.g., facilities, equipment, personnel) for the clinic to be able to provide high-quality healthcare to expecting mothers?
- From the perspective of these patients, what constitutes high-quality healthcare in this clinic?

### Facilitator Instructions

- Acknowledge that this is a hypothetical scenario, and answers may vary significantly to these questions.
- Give small groups 5 minutes to brainstorm initial answers.
- Next, bring the large group together and ask each small group to share 1-2 potential answers to each of these two questions.
- **Advance to Slide 3** to introduce the Donabedian model as a framework for thinking about healthcare quality.
- Explain to learners that there is an ALM Document (“A Model for Measuring Quality Care”) in their packet that provides a brief (~2 pages) overview of the Donabedian model. Facilitators not familiar with the model are encouraged to review this document themselves ahead of time.

### Facilitator Answer

The Donabedian model was first developed by Dr. Avedis Donabedian in 1966 and is the most widely recognized framework for approaching healthcare quality. This framework breaks quality down into three components:

1. Structure
2. Process
3. Outcome

While patients and healthcare workers value healthcare outcomes the most, the structure and processes of delivering healthcare must be in place to ensure positive health outcomes.

Process is often considered in two parts:

1. What leads up to a patient visit
  - a. Does the patient choose to seek care? Can the patient access care?
2. What happens at the visit
  - a. Is the correct diagnosis made, and is the correct treatment offered?

## Activity 1, Part 2 (20 minutes): Structures, Processes, Outcomes

**Learner Instructions:** Using the Donabedian model, expand upon your answer to the questions previously discussed in Part 1 above. Divide your answers into the three categories: Structure, Process, and Outcomes.

### Facilitator Instructions

- Give small groups another 10 minutes to use the Donabedian model to add to their answers to the questions in Part 1 above. **Keep Slide 3 visible** as the groups discuss their answers.
- Allow 10 minutes for groups to share their expanded answers for each of the three categories (structure, process, and outcome) in this clinical vignette with the larger group.
- Then, **advance to Slides 4-6** to reveal key questions to ask when evaluating quality using the Donabedian model.

## Facilitator Answers

Possible answers for the clinical vignette above (an outpatient clinic caring for pregnant women with HIV) include:

What needs to be in place for the clinic to be able to provide high-quality healthcare?

- Adequate clinic space that ensures comfort and privacy *[structure]*
- Clinic location that can be easily accessed by the patient population *[structure]*
- Access to ART, laboratory services, diagnostic imaging, equipment needed for taking vital signs and physical examination *[structure]*
- Sufficient staffing across healthcare cadres, including access to specialists *[structure]*
- Skilled healthcare workers with adequate training *[structure]* to diagnose and treat or prevent illnesses *[process]*

From the perspective of the patient, what constitutes high-quality healthcare in this clinic?

- Control of HIV *[outcomes]*
- Pregnancy free from complications *[outcomes]*
- Satisfaction with care *[outcomes]*
- Medical knowledge to make decisions centered around own values and preferences and to promote healthy behaviours *[outcomes]*

## Objective 2 - Activity 2 (10 minutes): Appreciate your role in delivering high-quality healthcare.

**Learner Question:** What role can each health profession play in delivering high-quality healthcare?



### Facilitator Instructions

Spend 10 minutes discussing this question as a large group. To guide the discussion, write out a list of the health professions present at the training and then solicit answers from the group for each health profession listed.

There are no right or wrong answers to this question. Encourage learners to think beyond the daily duties and to think about their role in the structure or process of healthcare delivery in the Donabedian model. Emphasize how their roles ultimately influence patient outcomes.

## Objective 3 - Activity 3 (20 minutes): Define the components necessary to measure quality (e.g., quality indicators) and appreciate how quality indicators are used.

### Clinical vignette continued – Caring for Women with HIV

During the staff meeting, the clinic director explains that one of the nurses had expressed concern that a number of women were dropping out of HIV care following their pregnancies and had not picked up their medications or come for follow-up appointments. The director had asked other staff members if they had noticed a similar problem, and many agreed. The director would like the staff to discuss an approach to this problem.

**A vital first step in being able to improve healthcare quality is to be able to measure it.** A quality indicator (sometimes called a quality metric or measure) is a quantitative measurement of some aspect of healthcare

quality. It can measure (and track) structure, function, or outcome. Quality indicators are usually expressed as a percentage to indicate how close they are to a particular goal or standard level of quality. For example:

- Structure quality indicator: % of days when the clinic was fully staffed with at least 5 nurses
- Process quality indicator: % of patients newly diagnosed with HIV who started ART within one week
- Outcome quality indicator: % of patients diagnosed with cryptococcal meningitis who are alive after one year

### **Activity 3, Part 1 (15 minutes): Designing a Quality Indicator**

**Learner Instructions:** In small groups, discuss the clinical vignette above and determine how you would design a quality indicator to assess the retention in care of pregnant women with HIV following delivery. During your discussion, answer these questions:

- How would you define the numerator (i.e., the group you're measuring)?
- How would you define the denominator (i.e., the total group from which the numerator is drawn)?
- What are the trade-offs to your choices?

#### **Facilitator Instructions**

- Dedicate 15 minutes to this activity.
- Allow small groups 5-10 minutes to work on a sample answer to these questions.
- Then allow 5-10 minutes for groups to share and review the answer below.
- Start by asking groups to discuss the denominator and then the numerator.

#### **Facilitator Answer**

Broadly speaking, the quality indicator should look like this:

$$\frac{[\textit{number of women with HIV still in care following delivery}]}{[\textit{number of women with HIV and pregnancy seen in clinic}]} = \textit{quality indicator} (\%)$$

The important part, however, is to clearly define the numerator and denominator in this equation so that the indicator can be consistently measured and compared over time.

In this example, defining the denominator will mean answering the following questions:

- Who counts as being “seen in clinic”?
  - Is this one visit during pregnancy?
  - What if the patient is not retained in care prior to delivery?
  - What if the patient is known to transfer care to another clinic prior to delivery?
  - Is a patient included only if HIV is diagnosed prior to pregnancy or at the initial visit?

Similarly, the numerator will require answering the following questions:

- How is “still in care” defined?
  - Is this a post-natal visit and—if so—how many visits and in what timeframe?
  - Will patients be counted if they are attending follow-up care after delivery but are not on medications?

Finally, **most quality indicators will need a timeframe for collecting data.** A short timeframe, only including patients who delivered in the last 4 weeks, provides more current/recent information, but has drawbacks:

1. It may not be sufficient to just evaluate the outcome. For example, would a patient be classified as having dropped out of care if she did not come for an appointment in the 4 weeks after giving birth?
2. The clinic may not have enough patients to meaningfully interpret the data. For example, if only 3 patients met the criteria due to a short timeframe, interpretation of the results would be difficult.

### Facilitator Instructions

Advance to Slide 7, which shows a sample quality indicator that is detailed and reproducible.

### Activity 3, Part 2 (5 minutes): Quality Indicators in Your Setting

**Learner Question:** Have you seen quality indicators used in your setting? If so, how? If not, in what ways could they be used?

### Facilitator Instructions

Dedicate 5 minutes to a large group discussion.

### Facilitator Answer

In general, make sure that learners appreciate that having an accurate quality indicator can help:

1. Determine if an area of care is truly problematic
2. Trend quality over time
3. Set goals
4. Measure the impact of a quality improvement initiative

Many times, the act of measuring and reporting a quality indicator and sharing it with clinic staff—without designing a quality improvement program around it—is enough to improve care for that indicator. This is because measuring and reporting a quality indicator sensitizes staff to its importance and can motivate people to improve care within the scope of their profession.


Finally, quality indicators may be used by entities outside of healthcare facilities to inform funding decisions, make licensing and accreditation decisions, allocate resources, and build public health and healthcare institutions. In short, it is hard to improve healthcare quality without first measuring it.

## Objective 4 - Activity 4 (15 minutes): Understand the use of quality indicators in the care for people with HIV.

### Clinical vignette continued – Caring for Women with HIV

The clinic director explains that the investigation into patients who are not retained in care after pregnancy is the first potential project in a larger program to evaluate and improve quality in the HIV clinic. The director passes around a list of quality indicators monitored by HIV clinics previously supported by PEPFAR and asks participants to think about which indicators are important for the clinic and if there are additional indicators that should be added.

**Learner Instructions:** In small groups, review the indicators in the Additional Learner Materials (ALM) document “PEPFAR Indicators”. Using the “Indicator Description” column, answer the following questions:

- What quality indicators are relevant to your profession and the patients you care for?
- Are there any quality indicators that you suspect may be good targets for improvement in the setting where you work?
- Are there quality indicators relevant to your profession that are missing from the PEPFAR list? 

### Facilitator Instructions

- Spend 10 minutes in small groups reviewing the indicators and answering the three associated questions.
- Then, spend 5 minutes discussing as a group. There are no right or wrong answers. Encourage learners to think about which PEPFAR indicators are most important to their patients.

## Objective 5 - Activity 5 (15 minutes): Investigate the root cause(s) of a low-performing quality indicator.

### Clinical vignette continued – Caring for Women with HIV

The HIV clinic spends the next month gathering data from the last year to examine their rate of care retention for pregnant women after they give birth. They find that in the last 12 months, only 71% of women were retained in care following childbirth. The director assigns a group of healthcare workers to investigate why this is the case. This is especially worrisome because women who are breastfeeding while not virally suppressed are at heightened risk of transmitting HIV to their infants.

There are multiple approaches to investigating the root cause(s) of a low-performing quality indicator (in this clinical vignette, pregnant women with HIV falling out of care after they give birth). We will discuss one method called the “5 Whys”. This is sometimes followed by creating a fishbone diagram, a tool discussed in other STRIPE HIV modules.

### Facilitator Instructions

- Ask learners if anyone is familiar with the “5 Whys” method and would like to explain it.
- Following a learner explanation (if any learner volunteers), **advance to Slide 8** to reveal the 5 Whys” method.

The “5 Whys” method aims to find the underlying system’s reason for poor performance. It typically takes five rounds of asking “why” to get to the root cause, but sometimes it may take more or less.

Explain that the first “Why” often leads to multiple answers. For each answer, ask “Why” about four more times to complete the activity.

Advance from Slides 8 through 11 to introduce the “5 Whys” concept and show a sample answer

**Learner Instructions:** Ask the question, “Why would pregnant women with HIV not be retained in care following childbirth?”

In small groups: 

- Brainstorm a list of potential reasons for this first question, or “Why”.
- Choose one of your reasons.
- Ask “Why?” at least four more times to try to identify a systems-related root cause to this hypothetical scenario.

In your small group, use the “5 Whys” method to answer the following question:

1. Why are pregnant women with HIV not retained in care following childbirth?

Now, choose one of your answers to question 1 and ask “Why” 4 more times:

2. Why?
3. Why?
4. Why?
5. Why?

### Facilitator Instructions

- Spend 10 minutes on this activity in small groups. Remind learners that this is a hypothetical scenario and that each group will likely come up with different answers.
- Then, spend 5 minutes having each group share their answers.

## Objective 6 - Activity 6 (15 minutes): Apply the PDSA framework to improve healthcare quality and study its impact.

### Facilitator Instructions

- Refer learners to the PDSA Worksheet in Additional Learner Materials
- **Advance to Slides 12** to display an overview of PDSA cycles.
- Briefly review the information on **Slides 12 through 16** (also summarized for learners below)

The **Plan-Do-Study-Act (PDSA) cycle** is one framework adopted for quality improvement activities in healthcare. The steps of the framework involve the following:

1. **Plan:** Figure out what aspect of healthcare quality you would like to improve. Use your analysis of root cause(s) to design an intervention for improvement and to measure the impact of your intervention.
2. **Do:** Carry out the intervention, collect data, and document problems and successes.
3. **Study:** Study the impact of your intervention and what you learned when carrying it out.
4. **Act:** Make a plan for next steps based on what you have learned and start the improvement cycle again (these cycles are sometimes referred to as continuous quality improvement or cQI).

**Learner Instructions:** In small groups, return to the systems issue that you identified at the end of the “5 Whys” above, then:

- Create an intervention that you would like to test to try to improve upon this issue (pregnant women with HIV not being retained in care after childbirth).
- For this activity, focus on the “Plan” step for this intervention:
  - What questions would you like it to answer?
  - How do you predict it will work?
  - Who/what/where/when will the intervention take place?
  - How will you collect data on its impact?
- Use the “Plan” section on pages 1 and 2 of the PDSA worksheet to fill in this information in your small group.



### Facilitator Instructions

- Give learners 10 minutes to complete the activity.
- Then, spend 5 minutes allowing each group to share their answers with the larger group.
- When each group has finished, briefly review the more detailed Plan-Do-Study-Act steps (Slide 13-16) and inform learners that their worksheets also include information to record each step of this cycle.

## Conclusion (5 minutes)

**Learner Instructions:** Read through each objective and summarize key learning points from each. Reflect on how you might apply them by taking specific actions to improve quality in your setting.

### Facilitator Instructions

- **Advance to Slide 17**, which shows the Module Overview and the frameworks and strategies to address each step in the module.
- Then **advance to Slide 18** and have learners read through each objective and summarize key learning points from each.
- As time allows, encourage learners to think about quality in their context. What are action items that learners can take on to improve quality?

## Resources

1. Donabedian, A. Evaluating the quality of medical care: 1966. *Milbank Mem. Fund Q.* 44, S166–S206 (1966).
2. Donabedian, A. The quality of care. How can it be assessed? *JAMA* 260, 1743–1748 (1988).
3. Donabedian, A. The seven pillars of quality. *Arch. Pathol. Lab. Med.* 114, 1115–1118 (1990).
4. Jazieh AR. *Glob J Qual Saf Healthc.* 2020 Nov 30;3(4):144–146. doi: 10.36401/JQSH-20-X6.
5. ACT Academy for their Quality, Service Improvement and Redesign. <https://www.med.unc.edu/ihqi/wp-content/uploads/sites/463/2021/01/A-Model-for-Measuring-Quality-Care-NHS-Improvement-brief.pdf>
6. The Deming Institute. <https://deming.org/explore/p-d-s-a> (accessed 3/6/25)
7. AHRQ. Plan-Do-Study-Act Form. <https://www.ahrq.gov/sites/default/files/wysiwyg/evidencenow/tools-and-materials/pdsa-form.pdf> (accessed 3/6/25)
8. Institute for Healthcare Improvement. 5 Whys: Finding the Root Cause. <https://www.ihc.org/resources/tools/5-whys-finding-root-cause> (accessed 3/6/25)