

Chapter 11

QUALITY IMPROVEMENT (QI)

11.1 INTRODUCTION TO QUALITY IMPROVEMENT



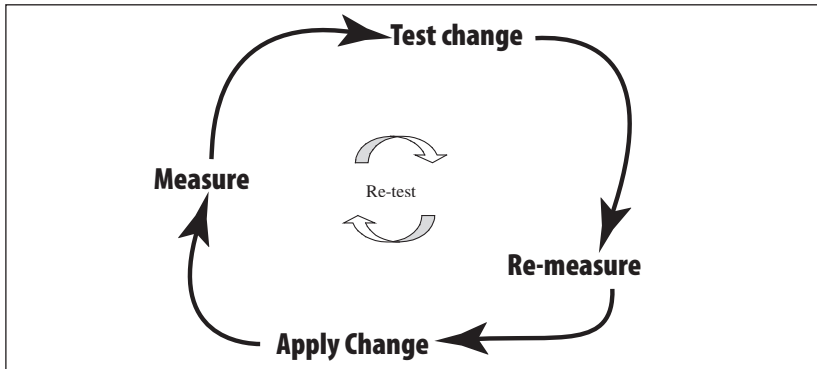
The quality of care delivered in your health centre is determined by many factors, including how its services are organized, leadership, monitoring systems, adequate infrastructure and available resources, both human and material. Quality management includes: staff who are adequately trained and mentored (see chapter 9, Human Resources); using the 5 Ss to improve the physical work environment (see chapter 5, Infrastructure); special quality procedures for lab tests (see chapter 8, Laboratory); and well functioning patient monitoring systems (see chapter 6, Monitoring). This chapter addresses how health centre staff can use the tools and methods of quality improvement to focus on the system of care in which they practise.

QI is an approach to improvement of service systems and processes through the routine use of health and programme data to meet patient and programme needs.

Methods of improving the quality of care described in this chapter focus on common key processes and functions in the clinic, and how they link together to achieve desired outcomes. HIV care systems that are planned in a methodical manner will result in care that better meets patient needs and follows national guidelines. Therefore, it is sometimes necessary to update or change current

systems in order to improve care and obtain the desired results. The key principles for improving HIV care summarized in this chapter include:

- focusing on the needs of the patient;
- implementing an improvement model that includes measuring- testing change- re-measuring, and applying change;



- providing leadership support to improve the system of care;
- identifying and including knowledgeable staff who will participate in improvement activities

Regardless of size, any health centre can improve the care it provides. HIV care may be provided in a separate area of your facility or it may be integrated into the main clinic. Either way, activities to improve the work you undertake at your health centre can be integrated into your routine flow of existing work. When this is not the case, improvement work may be seen as separate and additional to everyday work.

Also, you may be concerned that you cannot take extra time to work on quality, whether to track data or discuss the care system in your team. However, simple and practical methods can be adapted to help you get started. Once improvements begin, systems may function more efficiently and effectively, actually simplifying work. Most often, the staff care deeply about whether patients receive good care. When they see that quality improvement can help the clinic produce better and more effective outcomes, they will likely want to become involved to identify and implement methods to help it improve the services delivered.

11.2 WHEN CAN YOU START WORK TO IMPROVE QUALITY?

There is no reason to wait to start to improve quality. Work to measure and improve quality should be planned to start as soon as service delivery begins. If HIV care has already started, you can include quality improvement in your existing clinical systems. You can learn how to use basic tools that will help you examine clinic processes, use existing data already being collected to measure quality, and add discussions about quality to regular meetings.

Key steps:

- Make sure that the HIV clinic has the minimum functioning systems and infrastructure.



- Provide staff the training and tools they need to measure and improve care. If no one at the centre is knowledgeable, many resources are available to help (see chapter 9, Human Resources).
- Use a team-based approach to prioritize improvements and implement them. Each staff person can participate in some way. At a small health centre, the team may likely be the entire staff.
- Develop and agree on a plan on how the improvement activities will be implemented at the centre, who will lead them, and how they will be started.
- Involve patients since they bring valuable ideas based on their experiences in receiving services at your health centre.

Quality improvement methods apply to any aspect of care being provided in your health centre. For example, if an approach is found to decrease the number of visits missed by HIV patients, it can be applied to other patients as well.

11.3 ORGANIZATIONAL CULTURE FOR IMPROVING QUALITY

Making quality improvement part of the job can raise morale because staff and patients see that the barriers to care they face each day are being addressed, and they realize they can participate in the work to remove them. When activities such as routine clinical management meetings are already in place, discussions about quality can simply be added to the meeting agenda. The results from quality improvement activities can help increase teamwork at your clinic, and identify gaps in human and material capacity. Documenting these gaps can help prove that you need more resources for your facility.

Leadership is essential for quality improvement activities to succeed. Health centre leaders play a key role by creating a culture of quality improvement. This culture will foster a common understanding that performance data will be used to improve care for patients, and will not 'blame' or punish.

Leaders can support quality improvement activities in the following ways:

- **Create a vision for quality** by setting shared goals for performance.
- **Build staff capacity for quality improvement** by making sure that staff understand what QI is about and how to do it. Training opportunities about QI should be available for all staff and it should be included as part of their routine job expectations.
- **Build motivation for quality improvement** by communicating to staff that improvements are possible and welcomed, and encouraging them to set time aside to talk about quality and make it part of their jobs.
- **Establish a quality improvement team** to manage this process at the centre. Involve all staff who work in HIV care including physicians, nurses, clinic officers, data clerks, pharmacists, logistics staff, and outreach workers.
- **Dedicate time to measure clinic performance** and stress the importance of complete documentation to help determine whether or not patients are getting the care they deserve.
- **Provide time to openly discuss** both successes and failures.

- **Make sure that the ‘voice’ of the patient is heard and acted on** through surveys, exit interviews, suggestion boxes or other means.
- **Involve staff and patients** in understanding data and making decisions based on it.
- **Use available existing resources** to strengthen quality improvement activities.
- **Include a budget** for QI that provides for training in this discipline.

Tips for promoting a culture of quality improvement

- Educate staff about QI and provide them with the skills to participate in QI processes.
- Set a routine schedule for monitoring and reviewing data.
- Communicate results from improvement projects throughout the clinic and the community.
- Display data where patients can see them.
- Celebrate successes.
- Articulate the values of QI in meetings.
- Provide opportunities for all staff to participate in QI teams.
- Reward staff members by mentioning their QI contributions in their performance evaluations.

11.4 IMPLEMENTING QUALITY IMPROVEMENT AT YOUR HEALTH CENTRE

The steps of the improvement cycle are:

1. Set priorities to identify specific areas for improvement.
2. Define a performance measurement method for your improvement project and use existing data, or collect data that you will use to monitor your successes.
3. Establish an improvement team.
4. Understand the processes of the underlying system of care so that improvements can be implemented to effectively address problems.
5. Make changes to improve care, and continually measure whether those changes actually produce the improvements in service delivery that you wish to achieve.

Step 1: Set improvement priorities (Annex 11.1)

An example of a *decision matrix* is provided as a simple tool which can be adapted for use when working to set priorities. Other factors can be added to this table that are important for the clinic to use when considering priorities. The purpose of this tool is to help sort the choices using specific criteria that can help decide which areas are most important to select for improvement.

Identify an opportunity for improvement

Implementation steps:

- Use available data to help identify current gaps that need to be addressed.
- Ask staff and patients for ideas about what needs to be improved.
- Prioritize key opportunities for improvement.
- Select one specific improvement at a time on which to focus your work.

The first step to improving HIV care is to identify the health centre process that needs improvement. Given that your health centre likely has limited time and resources, you should focus on areas that are most important to HIV patient care in your community. Your choices should be influenced by your staff, and especially by your patients. Your ministry of health has already adopted a set of national HIV indicators (see chapter 6, monitoring); many of these can also be used as quality indicators (see examples below) so you should start with that list as you set priorities for the quality indicators to measure. If necessary, you may recommend additional specific quality indicators.

You are already collecting a great deal of information about your patients for regular patient monitoring, whether on a chart, a card or a health passport.

Information is being put into registers and logs, and is being reported to health officials at district and national levels. You may be reporting information to different donors as well. Often, this information is not seen by clinic staff and not used in the clinic. Using this information to examine the quality of care you are providing to patients is a powerful opportunity to assess where there are gaps that need to be addressed in your care system, and to begin to talk about how to improve them.

Examples of using existing data to set priorities

- Use the pre-ART register to determine if the patients in your health centre who are eligible for ART are being started on it. You may confirm a start on ART by checking the ART register.
- Examine the appointment log and determine the number of patients who were supposed to return to clinic in a specified time frame, and see whether they did or not.
- Examine pharmacy registers to see whether patients who were prescribed ART picked it up.
- Check patient charts, cards and laboratory registers to see if they are obtaining necessary laboratory tests.

Examples of obtaining ideas from staff

- Ask staff, “What is the most important area of your work that requires improving?”
- Ask staff to join the process of selecting priorities for clinic improvement projects. These will ultimately be selected by health centre leaders who will balance available resources with achievable improvement goals. Staff will be more empowered in their work if their voices are heard during this process, and will likely demonstrate increasing motivation to perform in their jobs.

Examples of obtaining ideas from patients and the community

- Ask patients, “Based on your experience, what area of the clinic’s work needs improvement the most?”
- Encourage the development of routine group discussions to pinpoint issues that need improvement.
- Consider formal exit interviews with patients or satisfaction surveys to identify problems and priorities for improvement.

Example from the field: one health centre experience

The leader, a clinical officer, worked with staff to see what information was available to examine the health centre’s quality of care. Since the health centre did not have a data clerk, the pharmacy workers and nurses reviewed their existing documents and registers. During a regular patient education group that week, the nurses asked the patients, ‘what can we do to improve your care at our health centre?’ The staff then met to discuss the data findings and the patient feedback. The team then contributed their ideas. When the various options were reviewed, the group decided to focus on making sure that patients were prescribed and receiving cotrimoxazole. The team also decided it was important that both adults and children received the drug.

Comment: Cotrimoxazole prophylaxis is an important choice for all patients in the clinic because it can save lives by preventing infections that are often fatal. Not only will it prevent *Pneumocystis pneumonia* (PCP), but it also prevents serious bacterial infections and malaria, common among adults and children with HIV infection. Focusing on ensuring patients received cotrimoxazole is important because problems with supply and stock depletions can be identified and responded to quickly (see chapter 7, Supply Management) to assure a continuous supply of this essential medication. However, the staff realized that patients must first be prescribed cotrimoxazole before they could receive it. Staff welcomed the opportunity to focus on this indicator since it required their coordinated efforts to make sure patients received the necessary medications.

- Use support groups that already exist and meet at your centre.
- Create or use a suggestion box, open it regularly and make sure that the ideas found there are included in the decision-making process of your improvement work. If you do not have a suggestion box, creating one is an easy first step to encouraging your patients to offer ideas.

Keep in mind that the priorities ultimately chosen should: be important and relate to national guidelines; represent key community and clinic staff concerns; be measurable; and include areas that the team will realistically be able to improve. For example, you can determine that equipment is broken, but you cannot use improvement projects to fix it. However, if patients are not receiving necessary laboratory tests, you can improve the process by redesigning systems such as clinic flow patterns, and then test these changes to see if they work.

When you are starting quality improvement processes, select one priority as you learn how to do the work. The selection of one priority in no way suggests that other identified areas are not important, merely it indicates that they can be addressed later.

Examples of indicators that have been used for quality improvement elsewhere

Many are often already collected routinely using the national patient monitoring system.

See the list of indicators in the chapter 6, Monitoring. These include:

- Were patients assessed for active TB at the last clinical encounter?
- Did HIV-exposed infants receive cotrimoxazole prophylaxis within two months of birth?
- Did HIV-exposed infants receive a virologic test for HIV within two months of birth, or an antibody test prior to their first birthday?
- Did patients who are eligible for cotrimoxazole prophylaxis receive it?
- Are all eligible patients on ART identified based on national guidelines criteria?
- If available, did HIV-positive pregnant women have a CD4 test sent on the same visit day of their positive HIV test result?
- Did HIV-positive pregnant women receive ARVs (ART or ARV prophylaxis) to prevent mother-to-child transmission (MTCT) of HIV based on national guidelines?
- Did all active patients see their clinical provider in the last three months?
- Was every patient's ART adherence assessed during the last clinical visit?

Others may require data collection separate from the national patient monitoring system:

- Were children under five years of age provided with an insecticide-treated bednet?
- Did the patients receive any kind of education or counselling in the past three months?
- Did female patients between 15-49 years of age receive family planning counselling during their most recent clinical visit?

Using an existing national indicator to improve TB case finding among PLHIV

Five to 15% of HIV-positive patients will develop TB. Therefore, 100% of patients should be assessed for TB at every visit, even if to record the patient has no signs or symptoms. Anything less than 100% may point to a lack of quality of care. Therefore, the national indicator, *proportion of adults and children enrolled in HIV care who had TB status recorded and assessed at last visit* is also a quality indicator. In addition to reporting this indicator to the national level, the facility should also be using it to measure its own quality of care, and may follow Steps 3 to 5 outlined below. This may include discussing possible problems in and solutions to filling out TB status in the patient's medical record, and reasons why these problems exist.

Step 2: Define a measure and collect data

Performance measurement tells you what is really happening, as opposed to what you think is happening. It tells you what is being documented in the clinic records and is available to help with the decision-making of providers who see the patient. It tells you whether tasks that are supposed to be done are being done, and done well. Even in small centres where the team knows their patients well, measuring performance will often result in surprising findings when the data are compiled.

Some indicators are required for district or national reporting. However, your facility may choose to measure additional indicators based on what you learned during Step 1 (setting priorities). In order to start measurement, you need to make sure that the indicator is clear, and you need to develop a uniform process for data collection.

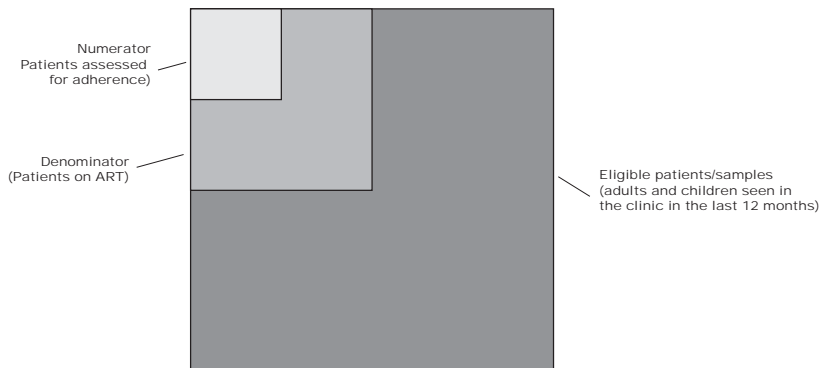
Specific steps include:

- Define the time period to include in your measure.
- Define the eligible population to be measured.
- Decide how many patients to include in the review: should you measure only a sample of all patients?
- Define a clear and specific measure.

- **Define the time period:** Performance is measured over a specific time frame. The patients who were actively seen during this time are the only subjects included in the measured group, and are chosen from the case list or register. In the cotrimoxazole prophylaxis example, only patients who had been seen in the health centre during the past 12 months were included. This information could be obtained from the patient cards (or an electronic database if the centre has one).
- Define which of the active patients are eligible for the care service. Depending on what you wish to examine, only certain groups of patients may be eligible to be included in your review. For example, the indicator may apply to both men and women, and to children, or to the latter only in certain clinical conditions. Another criteria for inclusion could be whether the patient is new or has already been in treatment. The list of eligible patients may also need to be sorted by age or gender, depending on whether the indicator applies only to children, men or women.

Some indicators may apply only to pregnant women, such as those receiving ART to prevent mother-to-child HIV transmission. Some indicators may apply only to patients receiving ART, such as whether adherence assessments are performed (see figure 11.1). For some indicators, such as monitoring cotrimoxazole, you may need to use both the pre-ART and ART registers for sampling or use a sample of patient cards or an electronic list. To measure whether ART adherence assessments are performed and whether rates of adherence change over time, would require sampling only patients on ART.

Figure 11.1: assessment of adherence



The cotrimoxazole example – determining who to sample

For the cotrimoxazole sample, the staff reviewed the registers and identified patients who were seen in the last 12 months. At this point, the next step depends on the guidelines for the country. If cotrimoxazole is recommended for all patients with HIV, then a sample of this list is taken. However, if the guidelines only recommend cotrimoxazole for a subset of patients such as those below a certain CD4 count, or those above a certain WHO stage, then the eligible group would only include these patients. The sample would be taken from this group. The denominator would be the number of patients eligible by CD4 count or WHO stage, and the numerator would be those given cotrimoxazole. The eligibility criteria for cotrimoxazole prophylaxis may also vary by age. If this is the case, you will need to create separate samples for adults and for children.

- **Define how many patients to include in the review.** It would be ideal to include all of your patients when you measure the indicator (100% sample). But the burden of doing this could be overwhelming if you have a large patient population unless you already have an electronic tracking system that can produce data. If you do have such a system, you should use it. Most health centres will not have one, and therefore you need to either look at all patient charts (if the number involved is small) or use a sampling methodology. The table below is an example of a ‘look-up’ sample size chart that tells you how many charts to include in your sample depending on how many patients you have in your eligible population defined above. It is based on a desired level of statistical precision*. In many settings, it may be simpler to look at all charts if your patient population is up to 200 patients.

Population Size up to 20	Sample size/All
30	26
40	32
50	38
60	43
70	48
80	53
90	57
100	61
101-119	67
120-139	73
140-159	78
160-179	82
180-199	86
200-249	94
250-299	101
300-349	106
350-399	110
400-449	113
450-499	116
500-749	127
750-999	131
1000-4999	146
5000 or more	150
*Sample size calculated for a 95% confidence interval with width of 0.16, based on a predicted score of 50%.	

If you are unable to easily generate a random list of charts to review by patient or enrolment number, there is a simple way to identify the patients to be included in your sample. You do so by dividing the total number of eligible patients you have identified in your register(s) or active case list, by the number of patients you need to review, based on the table above. You will use this number to create the sequence of your sample. For example, if you have 750 eligible patients for the cotrimoxazole indicator, the look-up table tells you that your sample should be 146. If you divide 750 by 146, the result is five. You will now need to take your ordered list (or patient cards arranged in order of enrolment) and select every fifth patient. Remember that the list you use has to be one that records each patient no more than one time!

What to do when if there are two different case lists or registers: one for patients on ART and one for HIV patients not on ART?

You have two choices. You can combine your two lists into one unduplicated list. If you do not have the time to do this, you can treat each list as separate and then apply the same procedures. For example, if you have 300 patients on ART and 450 not on ART from your patient list of 750, you would need a sample of 106 from your ART register or list, and 131 from your pre-ART register or list. If you divide 750 by 131 the result is 5.7. Rounding the numbers, you would select every third patient from your ART list and every fifth from your pre-ART list.

- **Define a clear and specific measure.** It is important that your indicator be well-defined. To define a sound indicator you will need to:
 - Set the denominator: which patients should receive the service on which you are focusing? In this case, it will be the sample of patients you have identified from your active case list, register(s) or sample of patient cards.
 - Set the numerator: which patients received the service? For example, the number of patients from your denominator group who were prescribed cotrimoxazole.

You are now ready to collect your data!

Collecting data

Start by developing a data collection plan.

If the data are not already collected as part of the standard national patient monitoring system (or are not contained in an electronic database which can produce the information), you will need to do the following:

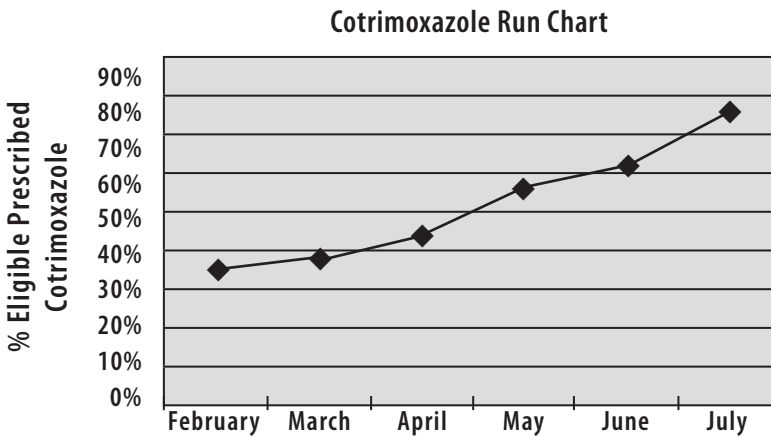
- Define how the data will be recorded
- Decide who will record the data
- Determine when the data will be collected
- Decide how the sample will be selected.

The sources of information should be identified in the plan. Some indicators will require more detail than others. For example, agreement about how to define whether a patient has received family planning counselling may involve discussion about how that information should be documented to show that it was actually provided. If a field is not present in your existing record, database or register, other sources may be considered such as log books. Whenever possible, to make data collection easier you should plan to include columns or spaces for tick marks in your record or register for the services captured in your quality measures.

Once your plan is complete, you are ready to collect data. Be sure to allow enough time for collection, and recognize that it may require staff to have time set aside to review the records or other data sources. Ensure that staff is adequately trained to collect data. You may wish to seek outside help from the district or a coaching team for this type of training.

If your database does not produce reports automatically, you should be prepared by having a form for capturing the data that you collect. This form will then be used to calculate your clinic performance score when the results are added. Depending on your sample size, the time required for data collection varies. Most often, if several hours each day are set aside to review the charts, the process takes several days to one week. When more than one person gathers the information, less time will be required.

When data collection is complete, calculate your rate (score). Divide the numerator by the denominator and multiply by 100 to obtain the rate which is expressed as a percentage. For example, if 65 of 100 eligible patients were prescribed cotrimoxazole in the past 12 months, you would multiply the result (0.65) x 100 to obtain 65% as your rate or score. You now have a baseline rate of performance for your indicator. This is the first point on your tracking chart. The example below shows rates of performance each month, specifically how many eligible patients were prescribed cotrimoxazole.



In the best case scenario, these data should be displayed on walls in the clinic where everyone can quickly see how the system is working, whether improvements are occurring, or whether they are needed.

Step 3: Establish an improvement team

Implementation steps:

- Identify staff who have the most knowledge of the selected area for improvement.
- Form an improvement team to work on the improvement area.
- Assign a team leader who will take responsibility for the team.

Improving your system of care is best done by a team that involves all staff whose work is part of the process being improved. Each team member provides a unique perspective on the common improvement goal. Clinical providers, data managers and records clerks are routinely included on the team. When CD4 count monitoring for pregnant women is selected as your improvement measure, your laboratory technician should be included. When clinic visit rates are the focus, outreach workers and peer counsellors should be consulted. Improvement teams bring together the skills, experiences and insights of different viewpoints. In a small centre with fewer than 10 staff, nearly all will participate. To obtain the best results, the team should consider involving patients, staff and community leaders as participating members.

In small centres, quality improvement team discussions can occur during meetings that focus on patient management on clinic business. Separate QI meetings are not needed. In larger clinics, a separate committee might be formed that does meet away from regularly scheduled meetings. In smaller health centres this is not often practical. A leader should be designated to take responsibility for moving the work forward.

Team responsibilities involve:

- reviewing results;
- understanding the process you are trying to improve: use simple tools such as flow charts;
- work with facility leaders to set aims for improvement.

- developing ideas for testing changes that you believe will result in improvement.
- routinely measuring and reviewing project-specific indicator data;
- testing changes that you believe will result in an improvement;
- implementing changes that work throughout the clinic.

Your entire team should review the results to determine if your QI aim is realistic. If this is not your first set of measurements, these results will determine how much more you wish to improve. Your aim should include a specific measurable goal that is clear to all staff, and will result in establishing a common purpose among them. Your team will more likely succeed if it is supported by leadership, has a set time to meet, is fully trained and communicates its work to all staff.

Improvement project template:

A template for recording the details of the improvement project is included in Annex 10.2. This simple form can be used to include all of the information needed to capture the important elements of the project, define its purpose and to keep a record of the improvement activities in the clinic.

Example from the field: the cotrimoxazole example

In this exercise, team members were selected after the baseline data were collected. The team included:

- one clinical provider (who sees children and adults for clinical staging)
- one data clerk (who collects data from the patient records and fills in registers)
- one community health worker (who provides community education and supports treatment adherence)
- one pharmacy technician (who manages cotrimoxazole stock).

The score results showed that in June, only 65% of eligible patients had been prescribed cotrimoxazole. This surprised the staff and resulted in many discussions about the problem. The group developed an aim statement to set a common goal for its work “We will conduct an improvement project to increase the number of eligible patients who are prescribed cotrimoxazole prophylaxis to 90%.”

Step 4: Understand the underlying process or system

Implementation steps:

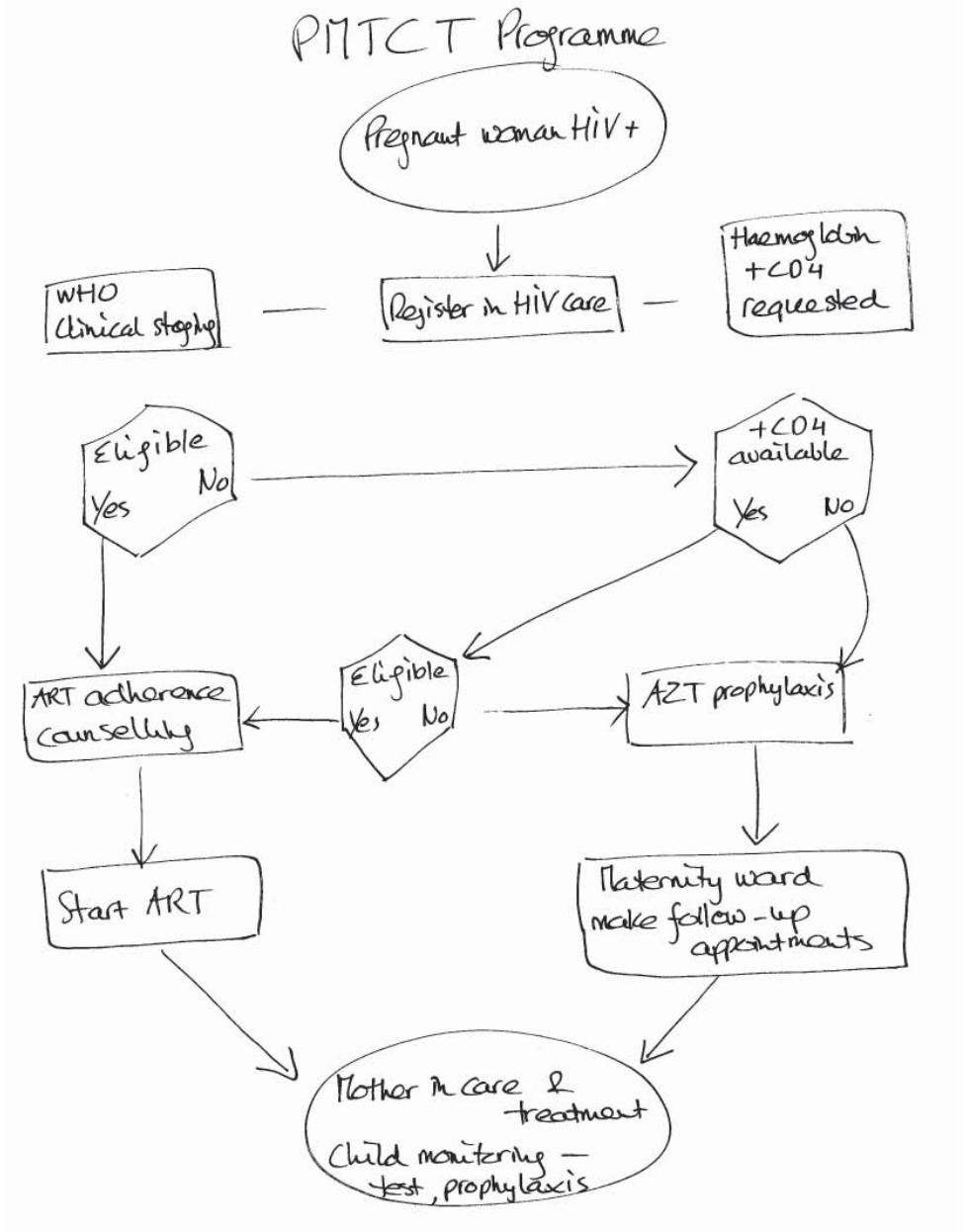
- Develop a flowchart of the existing processes;
- Exchange ideas about potential barriers to QI.

Your data show where gaps in performance exist, but do not explain why they exist. To develop an understanding of where improvements might be most successful, you need to understand the process of how the service being measured is actually delivered in the clinic. To do so, your team can draw a simple flowchart of the current processes. To clarify a process, they may need to obtain additional information from other staff or from patients.

Flowcharts are an easy way to visualize the process so that it is easier to both understand and improve. A flowchart shows the steps of any process in sequential order and can be used to illustrate a sequence of events, activities or tasks for processes ranging from simple to complex. An example can be found in Figure 11.2.

A fishbone diagram is another tool to help investigate the process (see Annex 11.3). It is often used with the flowchart to help sort out the categories of factors that are involved in a given process. It will also help differentiate factors that can be improved by the team, such as delays in registration or inadequate documentation, from those which require help from outside, such as with stockouts, inadequate staffing and broken equipment.

Figure 11.2: PMTCT Programme



Example from the field: cotrimoxazole example

The improvement team met weekly. Its members intensely discussed all the potential reasons why cotrimoxazole was not prescribed to eligible patients. Possible oversights included failure to note which patients were eligible, failure to document that medications were ordered or picked up (at every visit), forgetting to check if patients were receiving and taking cotrimoxazole, lack of patient understanding about the benefits of taking it, confusion by providers about who should be checking to see if patients were receiving their medication, and not filling in the appropriate place on the patient record to document at each visit whether patients were receiving cotrimoxazole. The outreach worker met with several patients to learn if they understood why they needed to take cotrimoxazole. Most patients did not understand why the drug was important. They said they did not know that it could prevent diseases that can strike if a person already has HIV; diseases that can also result in death or very serious illness. At the next meeting, the team developed a flowchart of the current process from the time a patient arrives for an appointment, to the point when cotrimoxazole should be given. The flowchart was then discussed at the next staff meeting.

The flowchart in figure 11.2 demonstrates the use of flowcharting to visualize the process of pregnant HIV-positive women receiving ART at this particular health centre. In order for pregnant women to receive ART, they must first be identified as HIV-positive, then register at the clinic, be assigned a clinical stage, have CD4 counts assessed, and then determined to be eligible according to national guidelines. Once determined to be eligible, they then receive ART.

If they are not eligible for ART, they receive ARV prophylaxis to prevent mother-to-child HIV transmission (PMTCT). These steps allow staff to see where bottlenecks can occur.

Step 5: Make changes to improve HIV care

Implementation steps;

- Test changes;
- Routinely re-measure to analyze the impact on HIV care;
- Conduct tests of changes and measure them to see if they result in improvement;

- Plot results over time;

- Scale up changes shown to result in improvements.

You will not know whether your change works until you test it and then measure again to see if it worked. Your team may identify a variety of ideas for changes, and can test each idea to see if it results in improvement. This approach is repeated in a cycle of “measure- test change- re-measure” that forms a fundamental part of improvement work.

The key lessons learned from successful health centres include:

- Test a variety of changes;
- Start a change on a small scale: for example, implement it on one day or with one provider, and then expand;
- Learn from successful best practises in your own clinic or elsewhere.

Several models for improvement have been adopted by health centres. These focus on cycles of measuring, testing changing and then re-measuring. The models may have different names, such as the Plan, Do, Study, Act (PDSA) cycle, but their similarities are greater than their differences.

Some categories of successful changes developed from QI studies at health centres, (remember that the specific change is unique to each clinic); including:

- Reminders: put ‘prompts’ or reminders at the point of care to remind a provider (either verbally or in writing) to implement a specific process. These processes could include the provider asking about whether the patient needs cotrimoxazole, or if they have TB symptoms including cough or fever. They could also remind the provider to offer counselling about behaviour, or order a CD4 blood test. Reminders could include wall charts, job aids, or a field in a register or medical chart.
- Make laboratory data available to providers: provide up-to-date laboratory data at the point of care so a provider can make a well-informed decision about whether to start treatment or prophylaxis.
- Share performance data with providers (“audit and feedback”): show providers that their performance rates can be improved. Providers are encouraged when they see data which show their results have improved. Visible improvement is

a powerful motivating factor for staff to improve care, since the results show that improved care benefits a patient's health.

- **Provider education:** train the entire staff on how to improve care, including both specific aspects and improvement methods. This can involve formal training, mentoring sessions or distribution of materials (see chapter 9, Human Resources on mentoring and supportive supervision).
- **Patient education:** provide individual training sessions or group education to patients so that they better understand their role in optimal care. Expert patients or peer-educators can play a particularly effective role in improving patient visit rates and treatment adherence.
- **Patient reminders:** use telephone calls or home visits to remind patients to return to clinic, or follow recommendations for renewing medications, or having blood tests. Peer workers may be particularly effective in these cases.
- **Organizational changes:** reorganize the steps in a process of care delivery such as eliminating unnecessary steps, bottlenecks, loops, rework, etc. and streamlining the flow of processes. Convene regular team meetings to discuss patient management, reassigning staff roles and responsibilities or adding new staff. During the early part of a patient's visit, identify those who need a specific test. If possible, send patients to the laboratory before their visit in order to reduce waiting time.
- **Information system strengthening:** establish and/or implement standard monitoring systems (see chapter 6, Monitoring), and improve documentation forms by adding clinical summary sheets. In addition, if feasible, use a computer programme for these activities.

Example from the field: cotrimoxazole example

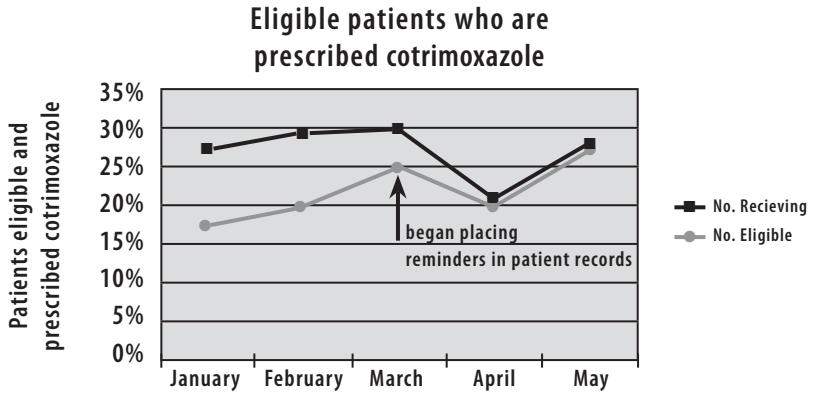
The improvement team meets weekly and starts to see improvements in the number of eligible patients who are prescribed cotrimoxazole. Based on flowcharting findings, the team decides to initially focus on patients who have come to a recent appointment, but either did not get checked to see if they needed cotrimoxazole, or did not get refills if they were already on it. Over two days, a new reminder system is tested in which notations are entered on clinic patient records used to record the patient's visit. The two-day test is successful and the number of patients given cotrimoxazole increases. As a result, this reminder is being expanded to include all patients; the record clerks are then trained to routinely put reminders on records. It is important to remember that sometimes the rate may not increase because the drug is not available. This finding is important because it shows health officers and donors that supply problems need urgent attention.

The patient representative provides two educational sessions a day to patients in the waiting area to increase awareness about the importance of taking cotrimoxazole, and that they have a right to treatment. Patients need to know that other serious infections can occur if a person is HIV-infected. The initial sessions are well-accepted by patients. But the two trainers quickly realize the limitations of their interventions, since more training sessions are needed on a daily basis than they can deliver. In response, the patient representative trains 20 patients to conduct these training sessions in the health centre and the community. It turns out that this training is extremely successful, spreads the understanding that use of cotrimoxazole is an important health measure, and provides patients with an opportunity to advocate for the best possible health care. These training sessions are expanded to include all patients.

Re-measuring to assess the impact on care:

Suppose that your baseline data results have initially identified an area for improvement. At that point, your improvement team needs to establish routine measurement cycles to assess progress over time. A simple run chart plotting the measurement data over time is created. This chart helps the team to track the project results, ideally showing when certain test cycles were conducted. See below for a simple run chart. The cycle is repeated and put into a graph format to display the results. Run charts will help your team to work on more than one improvement project at a time.

Figure 11.3: Example of a run chart



11.5 KEEPING QUALITY ON THE AGENDA

Notes from the Field:

The data clerk establishes a routine measurement system for monthly reporting of the agreed indicator. The results are graphically displayed and shared at the upcoming team meeting. They are put on the wall where everyone can see them.

Once you know that the change has worked, it is time to integrate this change throughout the entire centre. Leadership support and communication of the results are two important methods to ensure that the change happens. If the changes apply to other areas of the clinic beyond HIV care, they can be expanded there as well.

Resources

Your improvement work also needs to be integrated with efforts at district and national levels. Resources that may be available to you include tools to measure quality, training in QI, and ongoing support through clinical mentoring, coaching and supportive supervision. This communication with health officials and mentors is important because it also provides a way for you to let them know about problems at the centre beyond your control that affect the quality of services you provide. These problems often include broken equipment, medication and supply stock depletions, and infrastructure difficulties.

Your work to start and implement quality improvement will be strengthened by sharing your experiences with others. Opportunities for exchanging information and learning from others may speed up the improvement process.

Once the cycles of measurement and improvement begin, you may find it difficult to keep them going. Often external events occur that disrupt routine activities. If your clinic has made a commitment to improving care continuously as part of your regular discussions and meetings, and has engaged both staff and patients in improvement work, you will find that an expectation to continue has been created. Simple steps, such as setting aside even small periods of time to discuss performance, review data and to plan changes will keep quality improvement work going, and will result in better care for your patients.