

Family Planning Manager

MANAGEMENT STRATEGIES FOR IMPROVING FAMILY PLANNING SERVICE DELIVERY

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Pursuing Quality at the Santa Rosa Clinic

Supplement

Manager's Toolbox for CQI

Using CQI to Strengthen Family Planning Programs

Editors' Note

Continuous Quality Improvement (CQI) is an exciting management approach that is being introduced in family planning programs around the world. CQI is based on the belief that anybody at any level of the organization can make valuable suggestions about ways to improve operations. Unlike traditional management approaches, which focus on improving only the processes that are not functioning well, CQI assumes that any process within an organization can benefit from some improvement. Because CQI emphasizes a process of constant improvement in operations, it requires long-term organizational commitment and teamwork. Family planning programs that use CQI can raise staff morale, and improve productivity, efficiency, and client satisfaction.

This issue offers some practical suggestions for using CQI in your organization. Included with this issue is a supplement called the *Manager's Toolbox for CQI*, which contains important tools and techniques that managers can use to implement CQI.

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The CQI Process

The principles and techniques of quality improvement were formulated in the 1950s by W. Edwards Deming, an American management expert, using the ideas of Walter Shewart from the 1930s. These principles and techniques have been applied in corporations all over the world, particularly in Japan, where they have revolutionized corporate thinking and practice. Although quality improvement was first introduced and most widely used in business and manufacturing, its usefulness is not limited to these types of organizations. Recently, the concept of quality improvement been used in managing health services, including those offered by family planning programs.

CQI can be implemented across an entire organization such as a business, hospital, social or health agency, or school. Managers can adapt and use CQI to improve services in individual organizational units, or in several units combined. Clinic managers can adapt the techniques presented in this issue to suit their work setting. Whether CQI is implemented across an entire organization, or within a single unit, strong commitment from management, appropriate resources, and adequate time are all required to make the CQI process successful.

CQI recognizes that many organizational problems result from *systems and processes*, rather than from individuals. CQI encourages staff members at all levels to work as a team, to draw on their collective experience and skills, to analyze systems and processes, to use information to identify the nature and size of each problem, and to design and implement activities to improve services. When staff begin to make improvements, they themselves monitor the impact of their changes. If at first the desired outcomes of the process are not achieved, then the staff can continue to make improvements until these results are achieved.

This issue presents the principles of CQI. It discusses what you need to do to prepare for CQI, how to initiate CQI in your organization, and the steps involved in implementing the CQI cycle.

In preparing to introduce CQI, managers must create an environment for quality improvement by obtaining the commitment of leadership, focusing on the client's perspective, analyzing the work process, and motivating all levels of staff to participate in a continuous effort to improve family planning services.

Once the preparation for CQI has been completed, CQI teams must be formed and trained to **initiate** CQI. There are seven steps involved in **implementing** the CQI cycle.

- Step 1: **Identify an area** where opportunities for improvement exist.
- Step 2: **Define a problem** within that area, and **outline the sequence of activities (the process)** that occurs in that problem area.
- Step 3: **Establish the desired outcomes** of the process and the **requirements needed** to achieve them.
- Step 4: **Select specific steps** in the process to study and for each step, list the factors that prevent the achievement of the desired outcome.

Step 5: **Collect and analyze data** about the factors that are preventing the achievement of the desired outcomes of the specific step being studied, and quantify the outcomes of that step.

Step 6: **Take corrective action** to improve the process.

Step 7: **Monitor the results** of the actions taken.

It is essential to build CQI into routine organizational procedures by continuously repeating the CQI cycle. This will help to maintain improvements and to identify and address new areas where services can be improved on a regular basis. ■

Differences Between Traditional Management and CQI

Aspects	Traditional Management	CQI
Quality standards	Quality is based on pre-determined program objectives and is monitored periodically.	Quality is based on clients' feedback and needs. Quality is monitored continuously and is built into the work process.
Problem solving	Problem solving and decision making done by senior managers and specialists.	Problem solving and decision making done in collaboration with staff and based on hard data.
Improvement process	Short-term improvements made, often at point of crisis (reactive).	Gradual, continuous improvements made in all functions (proactive).
Program clients	Clients are not usually consulted for their opinions.	Clients are partners and are regularly consulted.
Work environment	Staff work individually.	Staff work in teams.
Performance recognition	Authority is rewarded.	Capabilities are rewarded.
Source of problems	Problems come from people.	Problems come from complex processes and systems.
Style of supervision	Control and direct staff.	Encourage staff to take initiatives.
Financial perspective	Quality costs money.	Quality saves money.

Adapted from Llewelyn Leach and Mayer articles, 1992.

Understanding the Principles of CQI

Managers who initiate the CQI process must incorporate the five basic principles of CQI into their management style.

Leadership Must Provide Firm Commitment and Support for CQI. CQI requires new ways of thinking, a willingness to change, and mutual support among management and staff. Therefore, the family planning manager, whether a director of a large country program or a manager of a busy clinic, must be willing to initiate CQI and provide ongoing leadership and guidance to the staff at every stage of the process. Managers must consider the improvement of quality to be a top priority, must communicate the importance of quality to their staff, must allocate enough resources to make the CQI process work, and must be prepared to implement changes proposed by their staff.

Satisfy Your Clients. In family planning programs there are two kinds of clients—internal and external clients.

Internal clients are the *program staff* who are served by organizational operations. For example, service providers become satisfied internal clients of a commodities supply system when managers, warehouse staff, and delivery agents have ensured that sufficient levels of contraceptives are always in stock. CQI requires that managers believe in the importance of serving internal clients well. To improve the satisfaction of internal clients, managers need to be ready to involve every level of staff in quality improvement activities, and must create a cooperative work environment.

External clients are the *women and men who receive family planning services*. When external clients are satisfied, a clinic or program not only gains more new acceptors and continuing users, but significantly contributes to the impact of the family planning program on health and fertility. CQI demands

that managers believe that meeting clients' needs and expectations will improve services and will better satisfy those clients.

Focus on Process to Solve Problems. A process, or system, is a set of operations or activities that are performed repeatedly to produce services. CQI assumes that problems in service delivery are the result of inefficient, poorly designed, or malfunctioning processes, rather than ineffective staff. If you improve the appropriate part of a process or system where a problem has been identified, you will usually fix the problem. CQI therefore focuses on defining and improving processes to achieve an organization's desired service outcomes.

Respect Your Staff's Ability to Improve Processes. Managers who respect the skills and

abilities of their staff can empower them to work together to prevent or solve problems and improve the quality of services. In a busy program or clinic, it is difficult for even the most conscientious manager to be completely aware of every step involved in delivering services. Staff who carry out the day-to-day activities of the clinic know which aspects of their work

function well and which don't. They are in an excellent position to use this knowledge to propose practical changes that they themselves will ultimately carry out. Managers who implement CQI need to create an environment in which staff members contribute ideas, make decisions, and do not fear reprisals. This environment empowers staff and increases job satisfaction, which in turn contributes to improved client satisfaction and quality of services.

Collect and Use Data. Decisions about process improvements must be based on facts. Most family planning facilities already generate considerable amounts of service data that can be analyzed to suggest possible solutions. In CQI, managers must use data to determine the nature and size of the problems, and to justify any decisions made to improve processes. ■

CQI's Major Principles

- Secure full commitment and support of leadership.
- Satisfy internal and external clients.
- Focus on processes to solve problems.
- Respect the contributions of all staff.
- Collect and use data to improve processes.

Adapted from Hardee and Gould 1992

Preparing for CQI

Preparing for CQI involves making senior managers aware that CQI can improve organizational management, and creating a core group that will implement the CQI process.

Raise Awareness and Secure the Commitment of Leadership

A senior manager should be the initiator of the CQI effort. This senior manager should gain the full participation of all managers by helping them to understand the principles of CQI, the improvements it has brought to other organizations, and the risks involved in implementing such an effort. To do this, managers may wish to read about CQI and, if possible, visit other organizations that are using CQI. Local business schools, universities, or schools of management are a resource for finding these materials. For a list of references, see the reference section on page 19 of this issue.

Managers must develop a realistic vision of what they would like CQI to bring to their organization, and be able to communicate that vision to staff at other organizational levels. During this preparation stage, managers can identify and adapt training materials that will be used to introduce and explain CQI to staff. These materials should include information about the steps involved in implementing the CQI process, staff responsibilities for supporting the process, the resources needed, the demands that CQI will place on their staff, and the potential benefits of CQI.

Create a CQI Core Group

In a large organization, the initiating manager will be most effective if he or she organizes a group of senior managers, often called the “CQI core group,” who will lead the process. This core group will be responsible for planning the implementation of CQI, getting the process started, and supporting it at all levels of the organization. They will lay out the steps for the ongoing CQI process, develop training materials, organize training for all staff, and provide technical assistance to the teams that will subsequently be formed to carry out CQI. If CQI is being implemented on a small scale, a single unit

manager or a designated staff person may perform most of the functions of the core group.

If you are leading the CQI initiative, you will find that even if you form a core group you are the one who will ultimately be in charge. Your job will be to support the entire process. You should make sure that your core group is trained, and that CQI responsibilities are included in the job descriptions of the group members. Their performance should be monitored and rewarded in the same way as their performance in other job functions, and they should be properly trained and helped to grow in the job through feedback and in-service education. You should lead by example and encourage the other core group members to do the same. You must listen to criticism, work closely with your core group, and encourage their full participation in the CQI process. As the CQI teams are formed, and throughout the CQI process, the core group will perform the same support functions for the teams as the CQI initiator has for the core group. ■

Tools and Techniques for CQI

This issue refers to a number of tools and techniques that can be used in implementing the CQI process. The accompanying supplement, *Manager's Toolbox for CQI*, explains when in the CQI process to use these tools and techniques, and how they can be applied in implementing CQI in a family planning program. Please refer to the *Manager's Toolbox for CQI* to learn more about:

- using a matrix for selecting areas for improvement;
- flowcharting;
- brainstorming;
- cause-and-effect diagrams;
- client flow analysis;
- tally sheets;
- bar charts and histograms;
- “Pareto” analysis;
- benchmarking.

The Importance of Preparation: Highlights from MEXFAM's CQI Training Program

In 1991, MEXFAM, the International Planned Parenthood Federation's (IPPF) affiliate in Mexico, initiated a CQI program to improve the quality of the family planning services provided at its headquarters and at six regional service delivery sites. Initially, only some of the departments and regional centers who had been trained, actively embraced the CQI program. As a result of this uneven acceptance, the core group realized that they needed to tailor the general CQI philosophy to MEXFAM's environment, and to develop a uniform conceptual approach that was appropriate to the organization. Consequently, a manual was developed to orient the staff about the principles, purpose, and benefits of using the CQI approach at MEXFAM. The manual was used to train the staff about CQI and provided them with reference material that they could use during the entire implementation process.

The manual stressed the importance of following the key principles of CQI, outlined the implementation schedule of MEXFAM's CQI program, and emphasized the critical elements of the program.

Critical Program Elements:

- CQI is a long-term process.
- CQI results are permanent because they become institutionalized.
- Basic support systems for CQI include knowing the needs of both internal and external clients, producing and managing information, and measuring outcomes.
- Leaders in the process are also responsible for promoting change, facilitating the process, and being active participants who lead by example.
- CQI activities are an investment rather than an expenditure. The positive long-term results of CQI will more than compensate for the effort.
- The CQI process does not necessarily eliminate all of the normal problems and conflicts that always arise.
- CQI provides better tools for identifying and solving problems. Using CQI as a problem-solving technique develops staff's maturity and intellectual skills.



Source: *Sistema de Calidad en MEXFAM*

Initiating CQI Activities

To initiate CQI in your organization, you will need to form CQI teams and train the members in CQI methods.

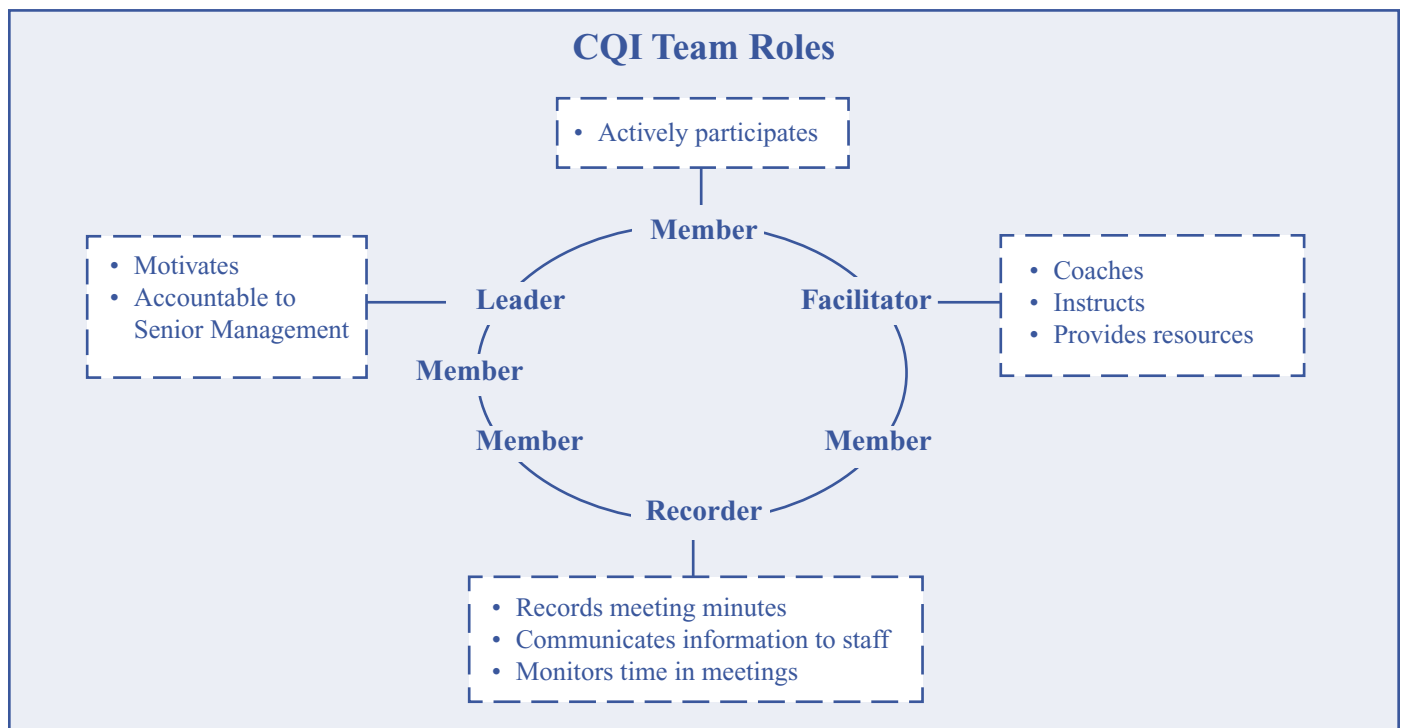
Form CQI Teams

Once you have formed and trained your core group, you are ready to perform the support functions for the CQI initiative. The first task is to form a CQI team made up of staff members who will look at management processes and activities and identify areas for improvement. Members of the CQI team are sometimes made up of staff within a single department of the organization. Another possibility is to form a **cross-functional team** made up of staff members from several departments, such as nursing, laboratory services, and administration. Cross-functional teams have the advantage of being able to look at processes, systems, and problems from different perspectives. The CQI team should include members of the CQI core group, at least in the beginning, to help guide the process. Once the team is formed, the roles and responsibilities of each team member should be determined by the team. At a minimum, each team should have a leader and/or facilitator, and a recorder. If the team is small, the leader and the facilitator may be the same person.

The composition of the CQI team may change once its members have agreed on the first area for improvement. Adding people with expertise in a chosen area can strengthen the team's ability to effectively address the selected problem. On the other hand, members of the CQI team with few skills in that particular problem area may become less active until the team has completed its work on that problem and meets to decide on another area for improvement. CQI teams may be permanent, or they may be formed for a specific quality-improvement activity and then disbanded when the improvement has been instituted. Depending on the situation, either approach can be successful.

Conduct Training

The members of the CQI team must be trained in the techniques that they will use to implement CQI. These include: teamwork, process analysis, the measurement and interpretation of data, problem solving, and the monitoring of activities. Staff may be trained formally, through seminars, or informally, through reading and discussion groups. Any materials used in training should be gathered or prepared well ahead of time so that the training can begin as soon as the CQI teams have been formed. Immediate training of new CQI teams is the most effective way to motivate staff. ■

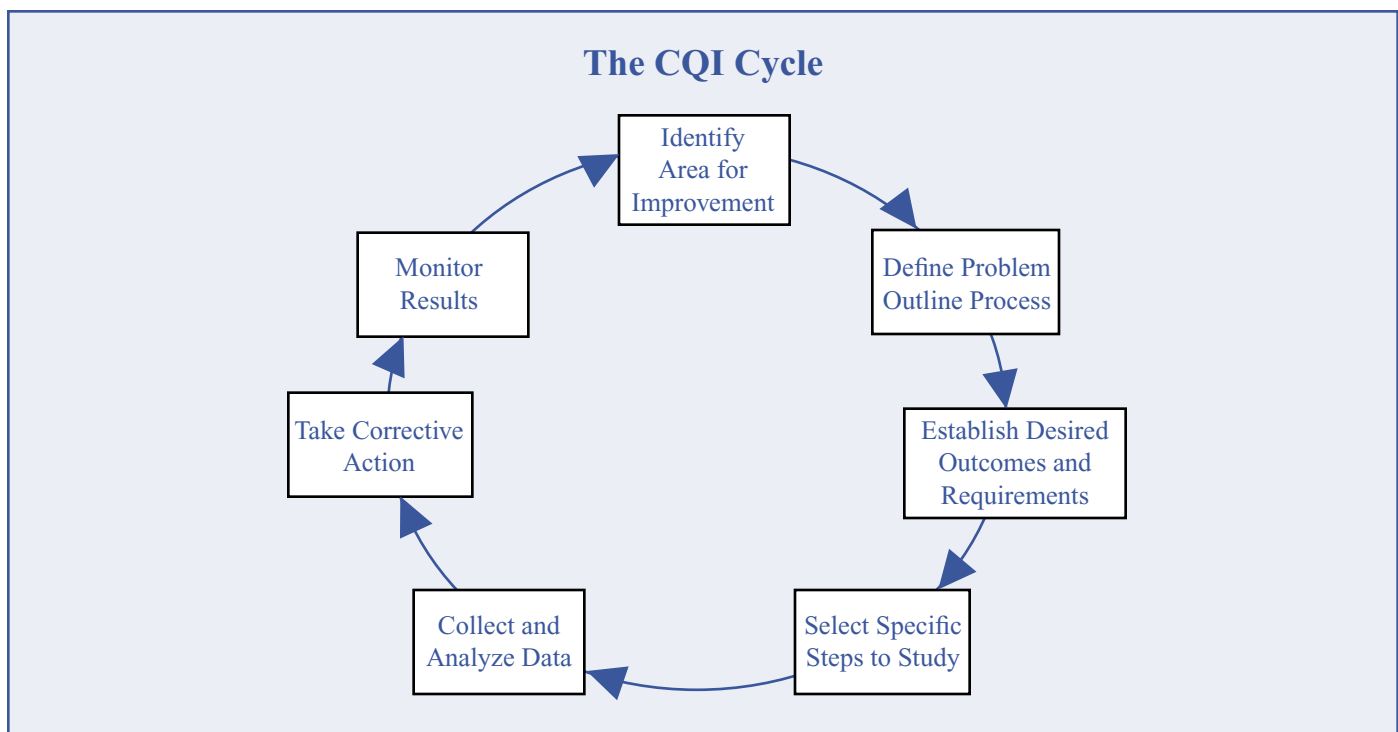


Implementing the CQI Cycle

CQI is a cyclical process. It involves identifying an area where there is an opportunity for improvement, defining a problem within this area and outlining the sequence of activities (the process) that occur in that problem area, establishing the desired outcomes of the process and the requirements needed to achieve them, selecting specific steps in the process to study, collecting and analyzing data about the process, taking corrective action, and finally, monitoring the results of those actions. Once the cycle is completed, the CQI team

must determine whether the problem has been solved. If the problem continues, the cycle should be repeated: the process should be restudied and new actions taken until the desired outcome is achieved. If the problem has been solved, the CQI cycle starts again to identify and address a new area for improvement.

The CQI core group supports the CQI team to implement the CQI cycle, and should encourage flexibility in using the CQI process. There is no one right way to do CQI. The contribution of individual ideas and differing work styles will enrich the CQI process and enhance the likelihood of success.



Step 1

Identify an area for improvement.

Opportunities for improvement exist in many areas of a family planning program, such as the management of clients, cost recovery, cost reduction, client satisfaction, staff satisfaction, and administrative systems. Ideas for improvement may come from a variety of sources both inside and outside the organization. Organizational assessments, client focus groups, interviews, suggestion boxes, supervisors or managers, staff

members themselves, and service statistics are some of the sources the CQI team can use to identify areas for improvement. If a team comes up with a lot of different ideas, the members will want to develop criteria to help them to determine which ones to focus on first. (For an example of selection criteria, see the supplement to this issue, *Manager's Toolbox for CQI*.)

An example of an area for improvement: A clinic nurse brings to the attention of the CQI team recent complaints from clients about how they are treated when they arrive at the clinic.

Step 2

Define a problem and outline the process.

Once the area for improvement has been selected, the CQI team must define a problem within that area and outline the sequence of activities (the process) that occurs within that problem area. This step lies at the heart of CQI success.

An example of a problem: The CQI team discusses and lists the types of complaints clients made about how they are treated when they arrive at the clinic. The CQI team decides to focus on delays in the client registration process, as one important aspect of how clients are treated.

After the CQI team defines the problem, the members must describe the entire process (the sequence of activities) related to that problem. Developing a **flowchart** helps to break up a routine process, or set of activities, into a series of sub-steps that make up that process (see Sample Flowchart of the Client Registration Process, page 10). The team will need to define the beginning and the end of that process, and outline (in sequence) the activities that complete the process. This allows the team to further define and analyze each step in the process.

Step 3

Establish the desired outcomes of the process and the requirements needed to achieve them. The team must establish the desired outcomes of the *entire* process, as well as the desired outcomes of *each step* in the process. These desired outcomes are used to define standards that should be consistently achieved for each step in the process, and for the process as a whole.

An example of a desired outcome of the entire process: Registration process is completed within 30 minutes of client's arrival at the clinic.

An example of a desired outcome of one step in the registration process (pulling the client's record): Registration clerk always locates the client's record within 5 minutes of her arrival at the clinic.

Once the desired outcomes have been determined, the team identifies the conditions or requirements

needed in order to achieve each step in the process. Requirements are usually related to resources (human, financial, and material).

An example of the requirements needed to achieve one step in the registration process (pulling the client's record): A filing system exists, and the registration clerk is proficient in using the system.

The desired outcomes and the requirements needed to achieve them are then written next to each step on the flowchart. They should be discussed and fully understood by the team. The completed flowchart should be widely circulated among the staff and referred to frequently in staff meetings and discussions, so that staff will understand what the CQI team is working on and can contribute their ideas.

Step 4

Select specific steps in the process to study and, for each step, list the factors that prevent the achievement of the desired outcome. The team will need to identify the specific steps in the process where they believe the desired outcomes are not being achieved. Focusing on these steps will help them to understand the main factors (causes of the problem) that are contributing to an ineffective or inefficient process.

An example of a step in the process to study further: After discussing the steps in the flowchart, the CQI team decides to work on the step labeled "Pull client's record." The CQI team agrees that the client files are not being located quickly. Because the desired outcome of this step is not being achieved—"Registration clerk always locates the client's record within 5 minutes"—the team discusses the factors that are responsible for the desired outcome not being achieved.

There are several techniques that can help the team to identify the possible causes of process failure, including: reviewing the process flowchart; examining the factors that influence the problem; and conducting a brainstorming session where the team can discuss all the possible reasons why the desired outcomes are not being reached. (For more information about these techniques, see the *Manager's Toolbox for CQI*.)

An example of several factors that prevent the desired outcome of this step “Pull client’s record” from being achieved: The CQI team conducts a brainstorming session to identify the possible factors that are preventing the achievement of the desired outcome of the activity, “Registration clerk always locates the client’s record within 5 minutes.” The team identifies several possible factors that may be preventing the clerk from achieving the desired outcome. These include: lost records, misfiled records, files are too far away from registration area, inadequate storage space for client records, and illegible records.

The team should consider and list *all* the possible factors so that they are sure not to overlook some of the most significant, but less obvious, causes of the problem. The team can develop a list of possible causes and develop a diagram which arranges and groups the causes of the problem in a way that helps the team to identify the primary and secondary causes of the problem (see Cause-and-Effect Diagram in the *Manager’s Toolbox for CQI*).

Step 5

Collect and analyze data. The CQI team initially needs to collect data in order to verify their impressions about the specific problem being studied and the potential causes of the problem, such as

those listed in Step 4. Later, the team will collect and analyze data to make sure that the requirements are in place and that they are indeed leading to the desired outcomes.

An example of data that can be collected:

The CQI team designs a study to collect data on the factors that delay registration. To do this, they observe the registration process for two days. During the observation, they use a tally sheet to record each factor that causes a delay in finding a client’s record and the number of times the record is delayed for each factor listed. Calculating the frequency of each factor that delays registration enables the team to identify the most important causes of delayed registration. These causes should be the focus of the team’s efforts to improve the process.

Since collecting data is costly and time-consuming, the CQI team needs to set limits on the amount of data they collect. As data are collected the team should regularly analyze them to determine if they are helpful in verifying the size of the problem, prioritizing its main causes, and suggesting what corrective actions should be taken. Once useful results have been obtained, special studies usually will not have to be repeated. If useful results are not being obtained, the team should re-evaluate this activity and consider collecting other data.

Using Data in the CQI Process

The CQI team may be able to use routine data from service statistics and medical records to verify the existence of problems and to identify causes. Alternatively, they may have to collect non-routine data through different types of surveys or special discussion groups. The CQI team should start with data from routine sources, and, as they need more information, they can introduce non-routine data sources to deepen their study.

- Routine **service statistics** on acceptors, dropouts, or method mix often provide the first indication that a problem exists, and often suggest which processes may be hindering the delivery of high quality services.
- Selected information from **medical records** may further pinpoint the nature and size of the problem as it affects the health and welfare of clients. *For example, calculating the percentage of clients with pelvic infections who receive IUDs, or the percentage of clients with high blood pressure who receive pills, will suggest how well clinical protocols are being followed.*
- Special **assessments** can shed more light on the problem. *For example, using a tally sheet to determine what percentage of providers follow all the steps in a protocol can help indicate the nature and size of a problem, as well as the source of the problem.*
- **Interviews** with clients, either in groups (focus groups), or individually when they leave the clinic (exit interviews), can identify which aspects of the service delivery system cause satisfaction or dissatisfaction, as well as the extent to which various desired outcomes are being achieved.

Analyzing Data in CQI. Analyzing data can help the CQI team to:

- Quantify the difference between the actual and the desired outcomes. These results will indicate how serious the problem is, and whether it may be affecting other aspects of service delivery.
- Determine whether the problem is confined to a specific step or to several steps in the process.
- Determine whether clients are concerned about the problem.
- Determine how long a problem has existed and whether or not the problem is getting worse.
- Indicate whether progress has been made in improving the process.

As the team analyzes the data, they will be able to identify with greater certainty the primary factors that are most responsible for preventing the achievement of the desired outcomes. Analyzing the data will also help them to identify the types of actions that can be taken to correct the problem.

An example of analyzing data: The CQI team prepares a frequency table of the causes of delays in registration. They graph this data and perform a Pareto analysis to show the primary causes of the problem. The sample Pareto analysis indicates that misfiling and inadequate storage space are the two primary causes or reasons why the registration clerk was not able to locate the client records within 5 minutes. Together, these 2 causes account for 70% of the problem.

The CQI team can use basic graphing techniques to present the data and to illustrate the magnitude of the problem being studied. It is important to display the data in a way that allows the team to spot trends, so that they can discover the root causes of the problem. Using pie charts, bar charts, and line graphs to display the data will facilitate data analysis and the primary cause of the problem can often be seen more clearly. Performing a “Pareto” analysis helps the team to determine which two or three factors are most responsible for causing the problem. (For information on how to prepare and use pie charts, bar charts, and line graphs, see Issue Number 2 of *The Family Planning Manager*, “Using Service Data: Tools for Taking Action.” For data display techniques specific to CQI and how to perform a Pareto analysis, see the *Manager’s Toolbox for CQI*.)

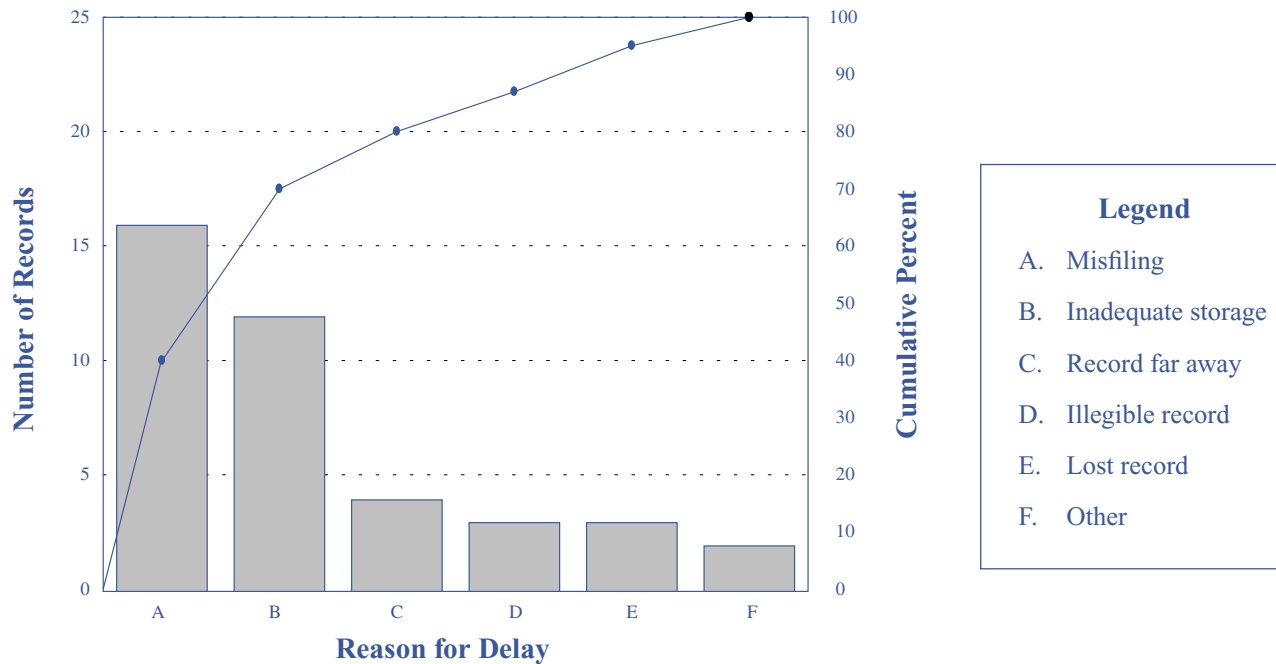
Sample Pareto Analysis: Frequency Table

Reasons Identified by CQI Team for Delays in Locating Clients’ Records

Reason for Delay (Ordered by frequency of occurrence)	Frequency		Cumulative Percent
	Number of Records	% of Total Records	
A. Misfiling	16	40	40.0
B. Inadequate storage space for client records	12	30	70.0
C. Record is far away from registration area	4	10	80.0
D. Illegible record	3	7.5	87.5
E. Lost record	3	7.5	95.0
F. Other	2	5.0	100.0
Total	40	100.0	100.0

Sample Pareto Diagram

**Reasons for Delay in Locating Clients' Records
and Percent Contribution to the Problem**



Step 6

Take corrective action. As a next step, the CQI team members will decide on a course of corrective action. The data analysis alone will not determine the specific actions that should be taken, but it will suggest some good alternatives to try. The CQI team can use a technique called “benchmarking” to compare the processes followed in their organization with those of a recognized leading organization in the same field (see *Manager’s Toolbox for CQI*). Benchmarking is especially useful when managers wish to redesign a process. Since staff often tend to cling to the procedures that they have always followed, this type of comparison often yields valuable new ideas for improving performance that your staff might not necessarily think of.

Examples of corrective actions that could be taken: Relocating the registration desk to be closer to the files, moving the files closer to the registration area, purchasing a filing cabinet, relabeling the files, creating a less congested work space for the registration clerk, and providing refresher training

to the registration clerk in filing procedures. In this example, the corrective actions that the team decides to take are to buy a filing cabinet and to provide refresher training to the registration clerk in filing procedures.

The team should develop an action plan that specifies each action to be taken, the proposed outcomes of these actions, the person who has the primary responsibility for implementing each activity, and a timetable for activities, including the points at which new data will be collected and monitored. The action plan should be integrated with other organizational work plans, to ensure that it is realistic, taking into consideration the staff’s other obligations.

It is reasonable to expect that the action plan will change during implementation—dates may have to be adjusted, different staff members may become involved, and intervening events may suggest adding or removing an activity. These changes should be communicated to the staff, agreed upon, and added to the plan, so that the written document always reflects reality and always provides an accurate record of the implementation process.

Step 7

Monitor the results. Using the same techniques as those used in data collection, a CQI team can determine whether the actions they have taken have, in fact, corrected the problem. There are three likely possibilities:

- Desired outcomes of both the process steps and the process as a whole *have* been achieved;
- Desired outcomes of both the process steps and the process as a whole *have not* been achieved;
- Desired outcomes of the process steps *have* been achieved, but the desired outcome of the whole process *has not been achieved*.

Each possibility requires a different kind of response. The ultimate goal of CQI is to develop a process that continuously improves the services that your organization provides.

An example of monitoring results: After the corrective actions have been implemented (purchasing a filing cabinet and retraining the registration clerk in filing procedures), the CQI team has to determine whether these actions have brought about the desired outcome of the specific step in the process being studied and of the overall process. The CQI team repeats the observation for one day to find out whether the registration clerk is locating each client's record within 5 minutes, is using the filing system effectively, and is completing the entire registration process within 30 minutes of each client's arrival. Conducting random interviews with clients as they leave the clinic helps the team to determine whether clients are satisfied with how they are treated when they arrive at the clinic.

Once staff have adopted the new (revised) process, a team member should be assigned to periodically monitor the process, to ensure that the staff continue to follow the modified process. This team member should look out for changes in the data that might indicate a return to the patterns that caused the problem in the first place.

Achieving Results with CQI

If all desired outcomes are achieved:

Move to another process

Develop more ambitious outcomes

If desired outcomes are not achieved:

Take different corrective action to change the process and remeasure

Consider reliability of data collection methods

Redefine the process, i.e., add or change steps in the process

If desired outcomes of each step are achieved but desired outcomes of the whole process are not achieved:

Re-evaluate the feasibility of the desired outcomes and/or redesign the process

If the desired outcome of the step is still not being achieved—"Registration clerk always locates the client's record within 5 minutes"—the CQI team should consider implementing some of the other corrective actions that they identified, and monitor the effects of these interventions. If the **desired outcome of the step is being achieved** but the **overall desired outcome is not being achieved**—"Registration process is completed within 30 minutes of client's arrival at the clinic"—the CQI team should re-evaluate the registration process and determine whether the desired outcome is realistic, or redesign the process.

Implementing the CQI Cycle: The Experience of MEXFAM's Management Information Systems Department

Under MEXFAM's CQI initiative, MEXFAM's Management Information Systems (MIS) Department began meeting regularly to discuss operations that needed improvement. During these discussions, several members of this team expressed concern that they were spending more time providing ad hoc training and technical assistance to staff in the use of computer software than in carrying out their most important task: developing computer systems and software that were necessary for the organization to maintain its level of growth (*Step 1: Identify an area for improvement*).

The MIS Department agreed that the problem was that they had too little time for software and systems development. They determined that the process most related to the problem was how ad hoc training and technical assistance for computer problems was being handled. The team decided to develop a flowchart to illustrate the training and technical assistance process (Step 2: Define a problem and outline the process).

The team agreed that the final outcome of the training and technical assistance process should be fewer requests for technical assistance to solve software problems. A requirement should be that all staff have a basic level of computer skills that would allow them to solve most software problems on their own, so that almost all MEXFAM documents could be produced without special assistance (Step 3: Establish desired outcomes of the process and requirements needed to achieve them).

Unanimously, the team agreed that the training step was not being satisfactorily carried out, because staff could not solve basic software problems on their own. They did not know how to produce and print documents using all the basic software packages; nor did they know how to interact with the basic computer disk operating system (DOS), on which all the software packages were run (Step 4: Select specific steps in the process to study and list the factors that prevent the achievement of the desired outcome).

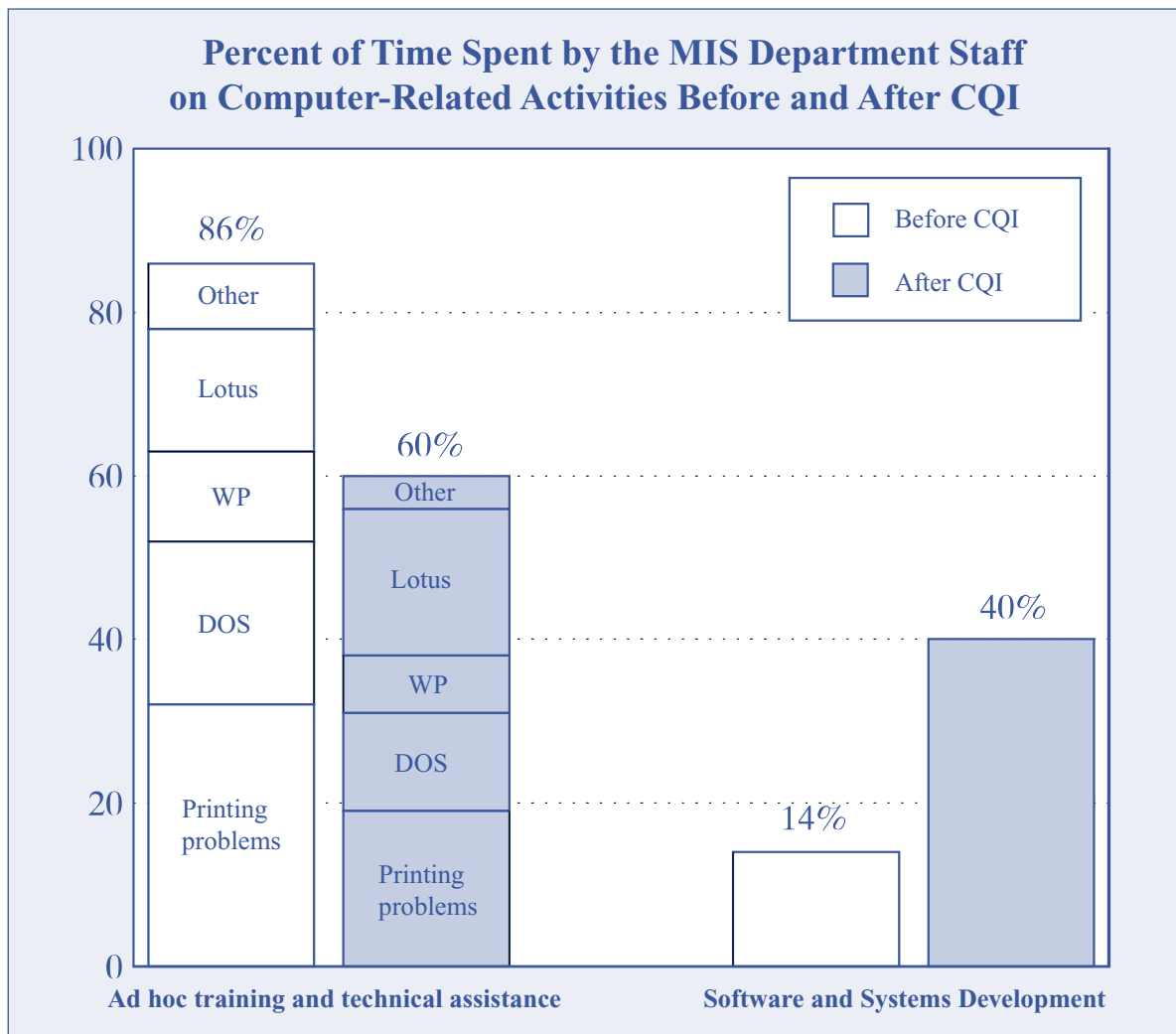
The team carried out the simple exercise of quantifying the amount of time each MIS Department staff member spent providing basic technical assistance to MEXFAM employees in solving problems related to printing documents, interacting with the DOS-system, using Word Perfect and Lotus, and other computer-related activities. They also quantified the time spent developing computer systems and software (Step 5: Collect and analyze data). The unshaded bars in the bar chart show the results of this initial analysis. The analysis verified that the MIS Department staff were spending so much time responding to requests for computer assistance that they had very little time to develop computer systems and software for MEXFAM, which was their primary responsibility.

As a first step towards reducing the amount of time spent providing technical assistance, the MIS Department staff developed an action plan to provide training to groups of MEXFAM employees from different working areas. The training was given for two hours a week over a six-week period (Step 6: Take corrective action). When the MIS Department staff remeasured the time they spent on various activities, they found that there had been no change in the number of requests for technical assistance (Step 7: Monitor the results of the corrective actions).

They re-examined the training program and discovered that because of absenteeism, many of the employees had not been able to attend the training sessions. They then developed a series of one-week training courses tailored to the needs of staff in each department (repeat of Step 6: Take corrective action).

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They again measured the proportion of time spent by MIS Department staff on the various activities (repeat of Step 7: Monitor the results of corrective actions). The shaded bars in the bar chart show the results of this second measurement. The proportion of weekly staff time spent providing ad hoc training and technical assistance decreased from over 85% to 60%. The MIS Department had achieved their goal of reducing the amount of time spent providing ad hoc training and assistance, thus increasing the amount of time they could spend developing software and systems packages. As a result of the changes in the training and technical assistance process, the time spent developing software and systems jumped from 14% to 40%. This also resulted in the introduction of 3 new packages in the first 3 months, as compared with the previous year, when only 2 new packages were designed during the entire year.



After the second training program, all MEXFAM employees had learned how to fully utilize the computer software programs, were able to work more independently, and could more often solve computer-related problems on their own. Organizational communications also improved significantly. The CQI initiative had successfully reduced a major source of inefficiency, and had boosted staff morale.

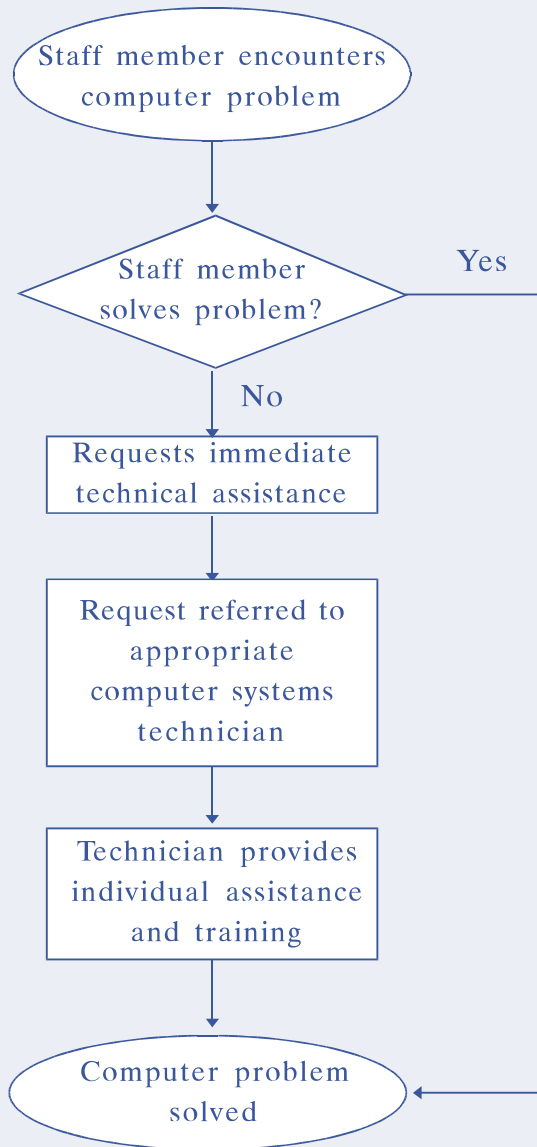
In order to permanently reduce time spent on providing ad hoc training and assistance, MEXFAM's computer training and technical assistance process was modified to include two new steps:

- assess computer skills of all current and new staff;
- provide computer training to staff in each department, tailored to the needs of the department.

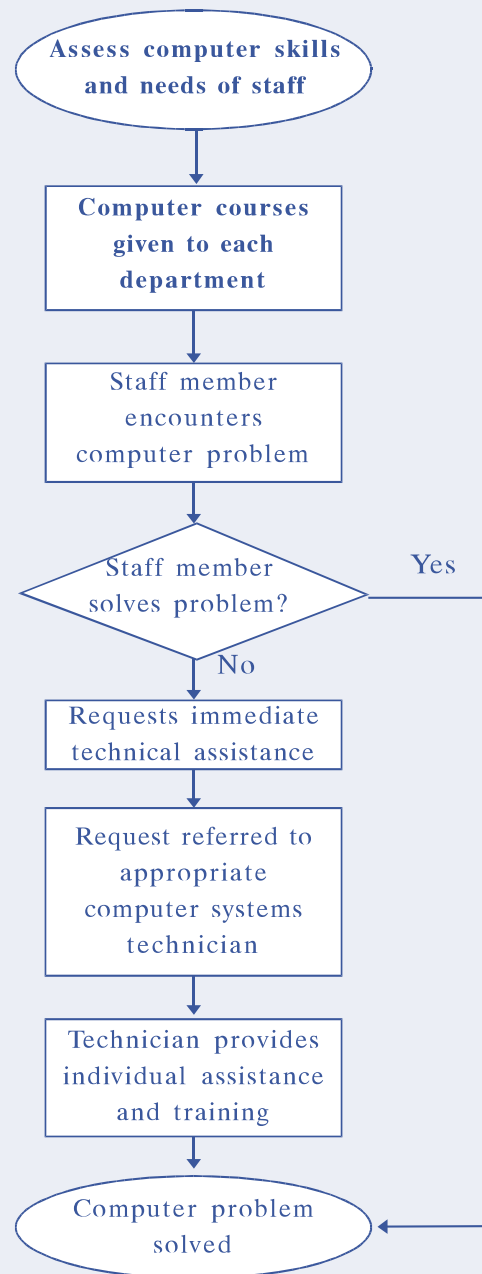
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MEXFAM's Computer Training and Technical Assistance Process

Process before CQI



Process after CQI



Overall Desired Outcome: MIS Department staff spend no more than 60% of their time on ad hoc training and assistance.

Information supplied courtesy of Lic. Alfonso Lopez Juarez, Executive Director of MEXFAM, and Dr. Pedro Manuel Acosta and Lic. Jesus Vertiz, of MEXFAM's Evaluation Department.

A forum for discussing additional applications of FPM concepts and techniques

On Institutionalizing the CQI process . . . *One reviewer comments,* “Program managers should consider incorporating CQI into routine organizational procedures. The processes described in CQI are similar to those that are typically applied to problem solving. What differentiates normal problem solving from CQI is that CQI is a management philosophy that is designed to be incorporated into routine organizational operations, and can be used to constantly improve operations as the systems evolve. This allows CQI not only to solve existing problems, but also to prevent other problems from developing, by recognizing the potential for a problem before it occurs.”

On Organizational Improvement . . . *One reviewer offers,* “CQI creates an opportunity for the staff who carry out the day-to-day routine to work with top management to improve those routine operations. This is very important, because staff who feel that their concerns about clients are not heard or taken into account often become easily discouraged about their work. CQI makes a vertical organization more horizontal, which allows senior staff to exchange ideas and learn from staff who deal with the problems directly.”

On the Timing of Implementing CQI . . . *One reviewer advises,* “It is important to initiate the CQI process immediately after training staff in CQI, in order to maintain enthusiasm and to obtain their full and active participation in the process.”

On the Risks Involved in Carrying Out a CQI Process . . . *Several reviewers offered advice about the potential risks involved in initiating and implementing the CQI process.*

On Creating False Expectations . . . “CQI teams have to be careful not to create ‘false expectations’ about whether the changes will completely solve the problem. Raising and then not meeting expectations can discredit the process.”

On Overburdening the Staff . . . “It is extremely important not to increase the workload of the staff who carry out the day-to-day routine. CQI often involves additional tasks, particularly in data collection and in time spent in brainstorming, analyzing, and planning solutions. Overburdened staff soon become exhausted, particularly if no immediate improvements are apparent. This can lead to a rejection of the process by the staff because they see it as a waste of time and effort.”

On Alienating Clients . . . “Although the goal of CQI is to improve service quality, the process may create disruptions as solutions are tested, or as staff take the time to meet to analyze processes and problem areas. Additional clients may drop out as a result of these inconveniences. Proposed solutions may also create unexpected problems in service delivery in other components of the family planning program, which can have a negative impact on client satisfaction.”

On Half-Hearted Leadership . . . “CQI depends on complete, unqualified commitment from the leadership of the organization. Changes in top-level management, or the emergence of pressures from the external environment, can often compromise such commitment or divert the leadership’s attention from the process. This can negatively affect the quality of the analysis of the problems and the choice of solutions, and can ultimately worsen the outcomes of the CQI process.”

Supporting Your Staff

It is important to remind your staff that the CQI process is cyclical, and that sometimes steps may need to be repeated in order to fully achieve the desired outcomes. Even after corrective actions have been taken, some process outcomes may still not be satisfactory. If a goal has not been reached the first time around, the CQI team can work through the implementation steps again and incorporate the experience gained in the previous efforts. In this way, they can:

- Examine the problem and its process steps from a new perspective (Step 2).
- Review the desired outcomes and requirements (Step 3).
- Review specific steps and factors that inhibit the process (Step 4).

- Collect and analyze other relevant data (Step 5).
- Take corrective action (Step 6).
- Monitor the new results (Step 7).

If staff discover that they need to repeat the CQI cycle again, your enthusiasm as supervisor will help to maintain morale and motivation. Remind your staff that CQI is not a computer program or a scientific formula. It is a skill that harnesses the combined contributions of the entire staff, and, like all skills, it must be built up through experimentation and practice. With consistent effort and commitment, incremental, ongoing improvements will provide a solid foundation for building and sustaining a high-quality program. Whatever the results, be sure to recognize the team's contribution to the CQI process. ■

References

- Balm, G. *Benchmarking: A Practitioners Guide for Becoming and Staying Best of the Best*. Schaumburg, IL. QPMA Press, 1992.
- Brassard, Michael. *The Memory Jogger: A Pocket Guide of Tools for Continuous Improvement*. Methuen, MA. GOAL/QPC, 1988.
- Deming, W. Edwards. *Out of The Crisis*. Cambridge, MA. Massachusetts Institute of Technology Press, 1986.
- Hardee, K. and B. Gould. "A Process for Service Quality Improvement in Family Planning." *Family Health International*, 1992.
- Institute for Healthcare Improvement. *Methods and Tools of Quality Improvement*. Brookline, MA. National Demonstration Project on Quality Improvement in Health Care, 1992.
- Jain, A. ed. *Managing Quality of Care in Population Programs*. West Hartford, CT, Kumarian Press, 1992.
- Juran, J.M. *Juran on Planning for Quality*. New York, N.Y. The Free Press, 1988.
- Kaluzny, A., C. McLaughlin, and K. Simpson. "Applying Total Quality Management Concepts to Public Health Organizations." *Public Health Reports*. Vol. 107, No. 3, 1992.
- Leebov, W. and C. Ersoz. *The Health Care Manager's Guide to Continuous Quality Improvement*. Chicago IL. American Hospital Publishing, 1991.
- Llewelyn Leach, S.C. "US Managers Focus On Boosting Quality." *The Christian Science Monitor*. Vol. 85, No. 4, 1992.
- Mayer, Thom, A. "The Transition From Traditional QA to CQI." Paper presented at the American College of Emergency Physicians Symposium, September, 1992.
- Nordlund, S. "Implementing Total Quality Management Programs in Health Care Organizations." *Hospital Materiel Management Quarterly* 1991; 12(4):22-26.
- Quintanilla, L., L. De La Peza, and R. Vernon. *Calidad En El Servicio: Guia Para Capacitacion* (draft version). INOPAL II Project, The Population Council, 1992.
- Shewart, W.A. *Economic Control of Quality Manufactured Products*. Washington, D.C., George Washington University Press, 1986.
- Vernon, R. "A Manager's Framework to Guide Family Planning Quality of Care Improvement Efforts." Paper presented at the annual meeting of the American Public Health Association, 1992.



Checklist for Using CQI to Strengthen Family Planning Programs

For Senior-level Managers

- Raise awareness and secure commitment of leadership for CQI initiative.
- Become active participants in the CQI process.
- Create a CQI core group, and provide training and support to the group.
- Empower staff to carry out the CQI process and provide incentives for successful CQI efforts.
- Assess CQI results and adopt effective CQI improvements.

For Clinic Managers and Supervisors

- Establish a CQI team.
- Empower staff to carry out the CQI process.
- Become active participants in the CQI process.
- Monitor the effects of the improvements.
- Restart the CQI cycle to make more improvements.

For the CQI Team

- Identify areas where there are opportunities for organizational improvement.
- Select one area for improvement, and outline the sequence of activities that occur in that problem area (the process).
- Establish desired outcomes of each step in the process.
- Select and study the most important steps in the process.
- Collect and analyze relevant data to quantify the existing outcomes of critical process steps.
- Develop effective techniques for analyzing and discussing those data within your team.
- Make improvements in the process to narrow the gap between existing and desired outcomes.

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