QUALITY IMPROVEMENT CASE STUDY

Using Client Satisfaction Data for Quality Improvement of Health Services in Peru
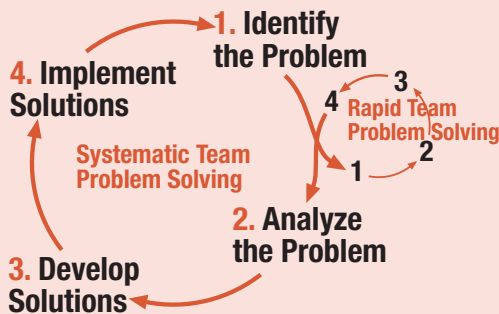
QUALITY ASSURANCE PROJECT

The Quality Assurance Project (QAP) is funded by the U.S. Agency for International Development (USAID), under Contract Number HRN-C-00-96-90013. QAP serves countries eligible for USAID assistance, on USAID Missions and Bureaus, and other agencies and nongovernmental organizations that cooperate with USAID. The QAP team consists of the Center for Human Services (CHS), the prime contractor; Joint Commission International (JCI); Johns Hopkins University School of Hygiene and Public Health (JHSPH), Johns Hopkins University Center for Communication Programs (JHU/CCP); and the Johns Hopkins Program for International Education in Reproductive Health (JHPIEGO). Together, they provide comprehensive, leading-edge technical expertise in the design, management, and implementation of quality assurance programs in developing countries. The Center for Human Services, the nonprofit affiliate of University Research Co., LLC, provides technical assistance in the research, design, management, improvement, and monitoring of healthcare systems and service delivery in over 30 countries.

About this series

The *Case Study* series presents real applications of Quality Assurance (QA) methods in developing countries at various health system levels, from national to community. The series focuses on QA applications in maternal and reproductive health, child survival, and infectious diseases. Each case study focuses on a major QA activity area, such as quality design, quality improvement, communication and development of standards, and quality assessment. In some cases more than one QA activity is presented.

Quality improvement is a systematic process of addressing the gaps between current practices and desired standards. Effective approaches to quality improvement include individual problem solving, rapid team problem solving, systematic team problem solving, and process improvement. These methods vary in the time and resources required and the number of people who participate. Regardless of the rigor and intensity of the method used, quality improvement approaches usually share four basic steps: identification of opportunity for quality improvement, analysis of improvement area, development of possible interventions to address a need for improvement, and testing and implementation of interventions.

This case study illustrates how a clinic-based team in Peru used client satisfaction data in two quality improvement methods, rapid team problem solving and systematic team problem solving, to address low clinic utilization.

Recommended citation

Santillán D. 2000. Using Client Satisfaction Data for Quality Improvement of Health Services in Peru. Quality Assurance Project Case Study. Published for the U.S. Agency for International Development (USAID) by the Quality Assurance Project (Quality Assurance Project): Bethesda, Maryland, U.S.A.

■ ■ ■

☐ ☐ ☐ # Using Client Satisfaction Data for Quality Improvement of Health Services in Peru

Background

The Max Salud Institute for High Quality Health Care[1] is a non-profit, non-governmental organization that manages a network of health clinics located in Chiclayo, a city on the northern coast of Peru. The growing health network, currently made up of four clinics, offers a range of services including general and emergency medicine, dentistry, preventive care, women's health, child health, on-site pharmacies, and a medical laboratory.

The Max Salud Urrunaga Clinic serves a low-income community on the outskirts of the city. Like many peri-urban communities in Peru, the population of the Urrunaga community is mostly made up of migrants from the mountainous, rural regions of Peru. The new settlement has limited access to water, electricity, and sewage systems. Urrunaga was greatly affected by the floods of the El Niño phenomenon in 1998. The Urrunaga Clinic set up emergency tents to provide free health services during the crisis, and joined the community

---

[1] Max Salud was established in 1994 with USAID funds and technical assistance from the University Research Co., LLC and Clapp & Mayne.

effort to control cholera and malaria outbreaks. After the floods, the Urrunaga Clinic went back to offering its health services at regular prices.

However, the economic effects of the floods were long lasting, and residents gave priority to the reconstruction of their homes and neighborhoods over health care. This led to low utilization of the Urrunaga Clinic's services, and the clinic personnel began to worry when their waiting room remained relatively empty several months after El Niño had passed.

Quality Improvement Methods

The following sections describe how clinic staff used two quality improvement methods, rapid and systematic team problem solving, to address this situation (see Figure 1). Both quality improvement approaches share four basic steps: identification of opportunity for quality improvement, analysis of improvement area, development of possible interventions to address a need for improvement, and testing and implementation of interventions.

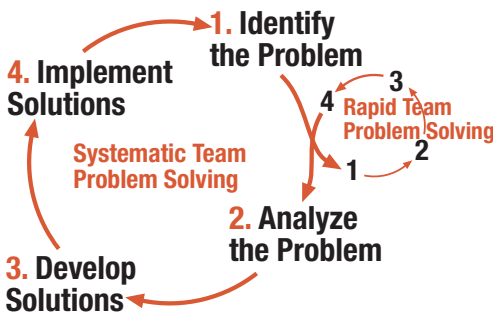**Figure 1. Quality Improvement Methods Used by Urrunaga Team**

Photo by: Raul Alberto Robles

Identifying Opportunities for Improvement

Capacity building in quality improvement methods.
In July 1998, the Quality Committee members of the Urrunaga Clinic attended the first of a series of Quality Improvement (QI) training courses provided by the University Research Co., LLC. Quality Committees are part of Max Salud's organizational structure, and their purpose is to monitor and improve the quality of care offered by the Max Salud health network. The Quality Committee at the central level is composed of managers, while the Quality Committees at the clinic level are made up of healthcare providers, social workers, and administrative staff. The week-long QI training course for the Quality Committees focused on basic QI principles, tools, and problem-solving techniques.

Brainstorming to identify a priority problem area.
During the training, the Quality Committee members formed teams and selected a single problem (or opportunity for improvement) to which they could apply QI tools and "learn by doing." After a brainstorming session to identify opportunities for improvement, the Urrunaga team selected the problem of low utilization of their health services. To explore the reasons behind low utilization, they decided to collect client satisfaction data. The team drafted data collection tools for client exit interviews and household interviews. They also worked with a university statistician to decide on appropriate sample sizes.

Quick Cycle of Rapid Team Problem-Solving

Problem identification and analysis: When the revenue for the Urrunaga Clinic was at an all-time low—a situation resulting from low utilization—Max Salud managers at the central level were alarmed. Deciding not to wait for the Urrunaga team to complete data collection and analysis, they called an emergency meeting with the clinic staff, including community health promoters, to analyze the problem. Together, they discussed the economic situation of Urrunaga clients. The community health promoters also pointed out the need for a female provider to offer women's health services, since female clients did not want to go to male doctors for services of this nature.

Development and implementation of rapid improvement measures: As a result of the meeting with Urrunaga Clinic staff, Max Salud managers decided to lower the prices of the clinic's services so that the new prices almost matched those of the Ministry of Health's services. In addition, an aggressive publicity campaign communicated the new fee schedule to the Urrunaga community by radio, TV, flyers, and word-of-mouth. Max Salud managers also decided to hire a certified midwife for the Urrunaga Clinic. As a result of the rapid improvement measures, the demand for the Urrunaga Clinic's services skyrocketed.

Analyzing the Opportunity for Improvement

Skills development in problem solving and analysis. In April 1999, the Urrunaga Clinic staff participated in a second QI training, which required teams to analyze the data they had collected. The Urrunaga team had not completed data collection, but they decided to continue their focus on client satisfaction. Even though the original problem, low clinic utilization, was no longer of overriding concern, staff wanted to address other client needs to retain the heightened demand for services. At the same time, the QI training gave the team the opportunity to use the results of a QAP Operations Research (OR) Study in client satisfaction that was taking

place at Max Salud.[2] The following sections describe the step-by-step process undertaken by the Urrunaga team in their client satisfaction analysis.

Development of client flow chart. To begin their analysis, the Urrunaga team members learned how to develop a flowchart diagram. Starting with the question, "What happens when a client enters the clinic?" one of the team members mapped out a client's journey, drawing on a posterboard under the direction of the other team members. Figure 2 illustrates the client flow chart developed by the Urrunaga team.

During the development of the flow chart, team members discussed the ideal client flow, but concentrated on trying to capture the actual client flow. As the flow chart expanded, team members realized that some health services had client flow that differed from the "typical" one captured in the diagram. For instance, in Emergency Services, the client bypasses several steps in the flow and goes straight to the emergency room, while a family member pays the cashier.

Analysis of client flow. The flow chart served as a launching pad for a series of discussions about inefficiencies in client flow. Team members pointed out that clients often returned to the cashier and the pharmacy several times. For example, for dental services, a client stands in line to pay for a checkup and after some time in the waiting room, he or she goes in to see the dentist. If the dentist discovers cavities, the client must return to the cashier to pay for the cavity-filling procedure. This may require standing in line again. Afterwards, the client must go to the pharmacy to pick up anesthesia before returning to the dentist's office. Again, the client may wait at the pharmacy because of a line or because the nurse technician might be

---

[2] The OR study tested various research methods to collect and analyze client satisfaction information. The research methods included exit interviews, focus groups, in-depth interviews, and suggestion and complaint boxes. A key aspect of the study involved giving feedback to Max Salud managers and clinic personnel about client satisfaction results to help them evaluate the quality of care from the clients' perspectives. For detailed information about the client satisfaction study, see the QAP OR Results report "Using Client Satisfaction Data for Quality Improvement of Health Services in Peru."

Figure 2. Client Flow at the Urrunaga Clinic

Quality Improvement of Health Services in Peru
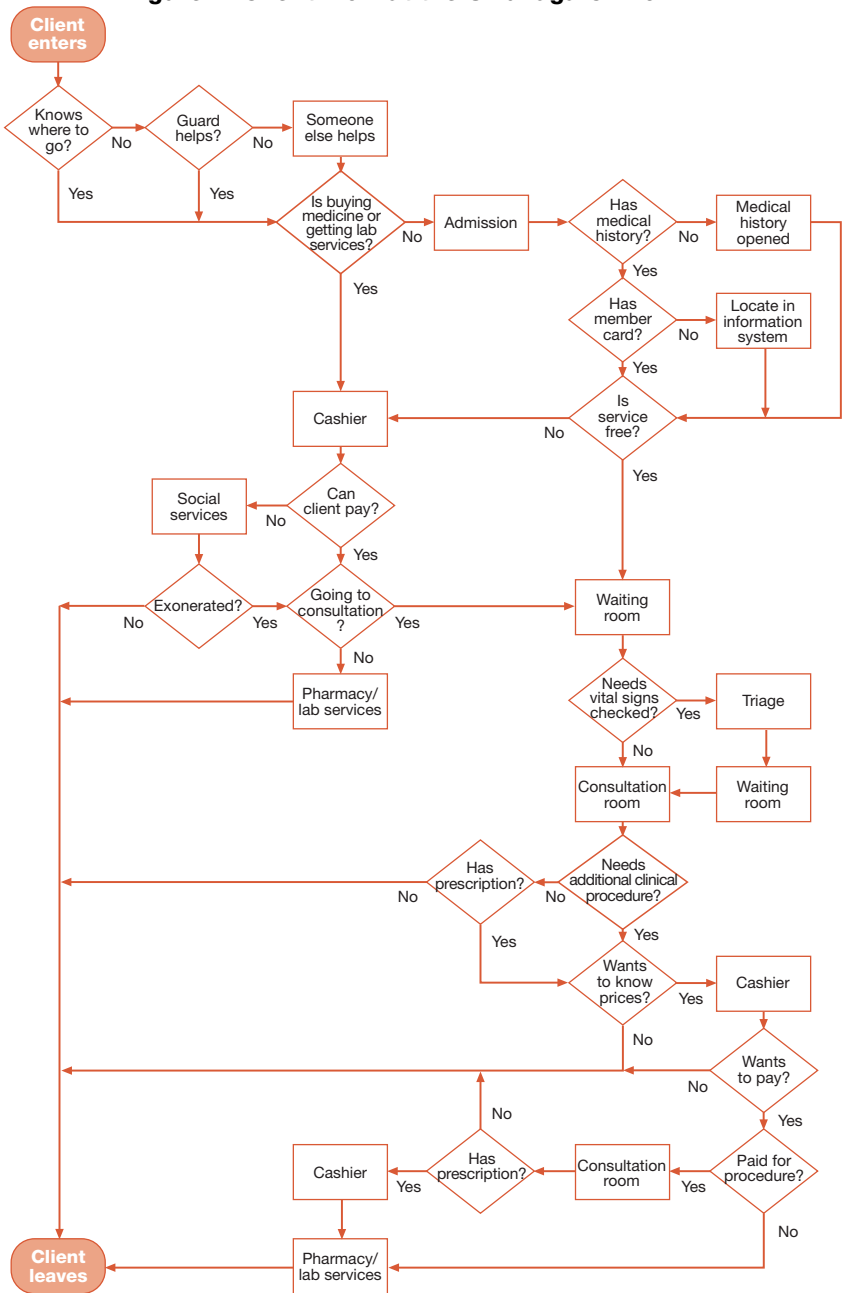
taking a blood sample. After the cavity-filling procedure, the client may return to the cashier to buy a pain reliever and then return to the pharmacy to pick up his or her medicine. The flow chart does not capture the full range of possibilities, but putting it together gave the team concrete context for their client satisfaction analysis.

Analysis of root causes with fishbone diagram. Next, the team learned how to develop a fishbone diagram. Guided by the trainer, the team brainstormed about possible sources of client dissatisfaction. The potential reasons that became the main "bones" of the diagram were:

1. Max Salud's public image
2. Waiting time
3. Hours of operation
4. Technical competence
5. Interpersonal relations
6. Access
7. Clients' preferences

Starting from these categories, the team members asked "why" questions to develop the full skeleton of possible causes. For example, the team asked, "Why would Max Salud's public image cause client dissatisfaction?" Qualitative data from the Operations Research (OR) study, in the form of quotes from focus groups and in-depth interviews with clients, helped team members explore the possible reasons for dissatisfaction. The smaller "ribs" of the fishbone diagram which answer the "why" question were:

1. Rumors about bad service
2. No guarantee that clients will receive service (due to confusion about hours of operation)
3. Misconception that interns are providing services
4. Lack of knowledge about services provided
5. Belief that the cost of services is high

Figure 3 presents the fishbone diagram sketched by the Urrunaga team.

Figure 3. Fishbone Diagram of Possible Causes of Urrunaga Client Dissatisfaction

Client dissatisfaction at Max Salud Urrunaga Clinic

PUBLIC IMAGE
- Rumors about bad service
- No guarantee of receiving services
- Lack of knowledge of services
- Belief that cost of services is high
- Misconception that interns provide services

WAITING TIME
- Lost waiting time
- Inadequate orientation in clinic
- Personnel conducting other tasks
- Complex processes
- Multiplicity of job duties
- Insufficient personnel
- Repetitive steps in client flow

HOURS OF OPERATION
- Labor usually occurs at night
- Inconsistency of services offered and services provided
- Lack of transportation
- Clients are less busy in the afternoon

PREFERENCES
- Clinic environment is not pleasant
- Preference for medical specialists
- Preference for women providers
- Other preferences

ACCESS
- High prices
- "Package" of analyses is costly
- High prices of some medication
- Lack of knowledge about discounts
- Lack of transportation
- Client lives far from clinic
- Belief that services are expensive since it is a "clinic" rather than a "health center"
- Neighborhood delinquency

INTERPERSONAL RELATIONS
- Procedures and treatment are not explained
- Doubts are not cleared up
- Personnel do not inspire trust
- Personnel are not friendly

TECHNICAL COMPETENCE
- Incompetent doctors
- Ineffective medicine
- Untrained personnel

Identification of key factors that influence client satisfaction. The fishbone diagram helped the team understand the key variables that could affect client satisfaction. The trainer asked the team what criteria would ensure client satisfaction, based on their fishbone diagram. The team summarized the information from the diagram into four main criteria for client satisfaction:

1. Upholding a good public image
2. Ensuring adequate access to services (including appropriate waiting times and hours of operation)
3. Ensuring good performance of personnel (especially with regard to interpersonal relations)
4. Satisfying clients' preferences

Development of indicators and standards. Based on the fishbone diagram, the team now had the necessary information to develop client satisfaction indicators and standards, which would guide the team's assessment of client satisfaction at the Urrunaga Clinic. The four key criteria for client satisfaction became the key variables used to determine client satisfaction indicators and standards. In other words, the indicators answered the question: "How would we measure this variable?" After a discussion to reach consensus, the team set a client satisfaction standard for their clinic for each indicator (see Table 1). As shown, the standards are relatively high. The decision to set some standards lower than others was made to provide room for exceptions. For example, only 80 percent of clients should not experience any difficulties accessing clinic services, since 20 percent of clients may live extremely far away.

Analysis of client satisfaction data. Normally, teams use indicators as a springboard to develop data collection tools. For example, to develop client satisfaction instruments, the team can convert each indicator into a question, or series of questions, for an interview questionnaire or focus group guide. "Percentage of clients who have difficulties in visiting the clinic" becomes "Do you experience any difficulties when you visit this clinic?" and "If so, what are those difficulties?"

In this case, the Urrunaga team already had access to client satisfaction data to use in their quality improvement process.

In September 1998, QAP team had conducted 80 exit interviews and four focus groups at the Urrunaga Clinic as part of an operations research (OR) study. Since the indicators the teams developed closely matched the research data collected, the Urrunaga team members were able to skip the data collection step in problem-solving and turn their attention to the exit interview results from the QAP OR study. The team also analyzed transcriptions of focus group discussions, performing frequency counts of positive and negative comments. Using the available client satisfaction data, the Urrunaga team evaluated whether their clinic met client satisfaction standards. In a few cases, the team modified the indicator to match the information

Table 1. Client Satisfaction Indicators and Standards Developed by the Urrunaga Team

Criteria	Indicator	Standard
1. Good public image	% of clients who think positively about Max Salud	90%
	% of clients who say they would return to the clinic	95%
	% of clients who say they would recommend services to family/friends	90%
2. Access to services	% of clients who think prices are acceptable	95%
	% of client who know they can receive discounts[3]	5%
	% of clients who do not experience any difficulties in visiting the clinic	80%
	% of clients who think hours of operation are adequate	80%
	% of clients who wait 30 minutes or less	90%
	% of clients who think waiting time is acceptable	90%
	% of clients who know what services the clinic offers	100%
3. Personnel performance	% of clients who leave without any unanswered questions	100%
	% of clients who say the provider treated them kindly	100%
	% of clients who say the provider greeted them	100%
	% of clients who say the provider respected their privacy	100%
4. Client preferences	% of clients who say their preferences were satisfied	80%

[3] Much discussion arose with regard to what percentage of clients should know about the special discounts. The discounts are based on a socio-economic interview with the social worker. The team decided that this information should not be widely disseminated, since Max Salud guidelines permitted the social worker to accept a limited number of discounts per month, reserving the discounts for "truly" indigent clients.

already collected in the exit interviews. For example, the team changed "Percentage of clients who think positively about Max Salud" to "Percentage of clients who say that Max Salud is the same as or better than other health centers."

The teams used the client satisfaction standards as a gauging scale. Whenever the exit interview results were lower than the standard, they were considered "warning lights" that indicated quality problems from the clients' perspectives, and opportunities to improve client satisfaction.

Table 2 compares client exit interview results to standards.

Table 2. Comparison of Standards to Client Exit Interview Results

Indicator	Standard	Result
Good Image		
% of clients who say that Max Salud is the same as or better than other health centers*	95%	94%
% of clients who say they would return to the clinic	95%	100%
% of clients who say they would recommend services to family/friends	90%	100%
Access to Services		
% of clients who say that prices are either average or low*	95%	97%
% of clients who know they can receive discounts	5%	10%
% of clients who do not experience any difficulties in visiting the clinic	80%	58%
% of clients who say the hours of operation are not a difficulty*	80%	88%
% of clients who report waiting 30 minutes or less	90%	56%
% of clients who say that waiting time is either average or short*	90%	72%
% of clients who know what services the clinic offers	100%	Not available[4]
Personnel Performance		
% of clients who leave without any unanswered questions	100%	95%
% of clients who say that the provider treated them kindly	100%	100%
% of clients who say that the provider greeted them	100%	92%
% of clients who say that the provider respected their privacy	100%	100%
Client Preference		
% of clients who say there is nothing about the clinic that they dislike*	80%	62%

* Indicators that were modified to match exit interview questions.

[4] The exit interview question was "What types of services are provided in this clinic?" The most common responses were general medicine (38%) and women's health (26%). All interviewed clients could name at least one of the services that Max Salud offers. The team could have used a more specific indicator to get a better assessment of clients' knowledge of Max Salud services: for example, "Percentage of clients who know more than three of Max Salud's services." This level of inquiry would have required that the team directly analyze the raw data, since the OR team had not presented the results in this manner.

Developing and Selecting Solutions

Identification of deficiencies in meeting standards.
Next, the Urrunaga team discussed the discrepancies
between the exit interview results and the client satisfaction
standards. In most cases, the results indicated that the clinic
met or exceeded client satisfaction standards. However, the
Urrunaga team quickly pinpointed a few indicators that did not
meet the set standards (highlighted in Table 2). The indicators
that were below the standards by five or more percentage
points were related to difficulties in getting to the clinic, waiting
times, interpersonal relations, and satisfaction of clients'
preferences. The team discussed opportunities for improving
performance, and the different levels of responses required for
each (e.g., rapid management response, individual follow-up,
community collaboration, process improvement, etc.).

Analysis of solutions to access problems. The first
indicator "in the red" (by five or more percentage points) was
related to the clinic's accessibility. When the team further
analyzed the data, they found that difficulties involving
transportation to the clinic represented 35 percent of the
barriers to access reported by clients. The team viewed this
problem as being out of their control and decided that
resolving this difficulty would require a response from the
community. They agreed that the social worker would address
this issue at the next community meeting.

**Analysis of solutions to interpersonal relations
problems.** The next opportunity for improvement that the
team discussed was interpersonal relations. Since the
discrepancy between the exit interview results and the client
satisfaction standards was relatively small, the team decided
to use a rapid management response to this problem. The
Director of the Urrunaga Clinic decided that he would hold a
staff meeting to discuss the exit interview results. He would
remind health providers of the importance of always greeting
clients when they arrive and asking clients if they have any
unanswered questions before they leave the consultation
room. One nurse went a step further and suggested that the
provider should use the client's name in the greeting, as well

as give his or her own name when meeting a new client (e.g., "Good morning, Mrs. Rodríguez, I'm Dr. García.").

Analysis of solutions to waiting time problems. The other indicators that fell short of the standards were related to client waiting times. Only 66 percent of clients reported waiting 30 minutes or less, and only 72 percent of clients believed the waiting time was acceptable. In fact, the most frequent response to the exit interview question, "What do you not like about this clinic?" was "They do not have fast service" (26%). The team recognized that reducing waiting time was a complex opportunity for improvement that would require further analysis. The team knew that the data captured clients' sentiments during a very unique time. In September 1998, when the research team had conducted the exit interviews, the demand for the Urrunaga Clinic's services had increased due to reduced prices. During this time, waiting times had increased because of a personnel shortage. However, a few weeks later, Max Salud managers had quickly noticed and responded to this situation by hiring more support staff for the Urrunaga Clinic.

Brainstorming to find ways to further reduce waiting times. Part of the problem had already been solved, but the team felt that the solution was temporary and that there was always room for improvement. They reviewed the flowchart diagram for additional information about inefficiencies in client flow, and then brainstormed to explore ways to reduce waiting times. The trainer asked the team to be as creative and innovative as possible, and to think about what other health centers were doing as well. The team listed the following solutions during their *tormenta de ideas* (brainstorming) session:

1. Reduce repetitive steps in client flow
2. Redesign prescription, laboratory, and X-ray forms to avoid duplication and unnecessary information
3. Fill out forms in block print to ensure legibility
4. Give the pharmacy an updated price list
5. Move free in-service supplies to consultation rooms for services such as preventive and dental care

6. Use member cards with scannable magnetic strips in Admissions

7. Give clients numbered tickets in order of arrival in different colors for different services

8. Train technicians to perform simple sutures

9. Do not allow clients who want to expedite non-emergency consultations to pay for and receive emergency care

10. Organize medical histories by clinical service when calling clients to consultation rooms

11. Train health promoters to act as facilitators to help clients fill out admission forms

12. Hire "hostesses" to help orient clients in clinics

13. Improve work processes at each waiting station

Table 3. Decision Matrix I for Selection of Appropriate Solutions

Solution	Importance	Feasibility	Impact	Cost	Total Score
1. Reduce repetitive steps in client flow	5	3	5	3	**16**
2. Redesign forms	4	4	3	4	**15**
3. Use block print in forms	5	4	1	3	**13**
4. Give pharmacy updated price list	3	5	4	5	**17**
5. Move free in-service supplies	4	5	4	5	**18**
6. Use scannable member cards	4	2	5	1	**12**
7. Give clients numbered tickets	5	5	4	4	**18**
8. Train technicians in suturing	4	4	3	3	**14**
9. Prohibit paying for expedited service	2	5	2	4	**13**
10. Organize medical histories by service	5	5	5	5	**20**
11. Help clients fill out forms	4	5	4	5	**18**
12. Improve client orientation	2	2	4	3	**11**
13. Improve waiting station processes	5	5	5	5	**20**

Selection of solutions to reduce waiting times. The team members ranked the solutions using a decision matrix that considered the importance, feasibility, impact, and cost of each. The rating scale for the solutions was from 1 to 5, with 1 being the lowest score and 5 being the highest. The team discussed each solution and decided on a score based on the group consensus.

The team decided that the best solutions were #10 and #13. Solution #10 was easy to implement and would make client flow more efficient, since it addressed the following situation. When clients arrived, the administrative assistant pulled their medical history folders from the files, placed them in a pile, and called clients to the consultation rooms in order of arrival. Most of the clients waited for a General Medicine consultation, but a few waited for other services, such as Women's Health consultations. The folders for Women's Health clients could be underneath all the other folders for General Medicine, and a client could be needlessly waiting to be called, even though the Women's Health consultation room might be empty. The Urrunaga team decided to organize the medical histories by clinical service to avoid this problem.

The other "best" solution was solution #13: "Improve processes at each waiting station" (i.e., admission, cashier, pharmacy, waiting room, etc.). However, they noticed that many of the other solutions were parts of this larger solution. The trainer suggested that the team use the other solutions as components of solution #13, and three separate solution strategies were developed to redesign client flow. Each strategy included related components and helped the team prioritize the different solutions. Again, the team used a decision matrix to choose the best strategy, which is presented below.

Table 4. Decision Matrix II for Selection of "Best Strategy"

Strategy	Importance	Feasibility	Impact	Cost	Total Score
A	5	4	5	3	17
B	5	5	4	5	19
C	4	5	4	5	18

A. Implement scannable member cards and numbered tickets classified by colors according to services, and increase the participation of health promoters as facilitators and hostesses (combines Solutions 6, 7, 11, and 12).

B. Move free in-service supplies to consultation rooms, give the pharmacy an updated price list, train paramedical personnel to perform simple sutures, and only provide emergency services for cases that merit emergency care (combines Solutions 4, 5, 8, and 9).

C. Avoid repetitive steps; redesign prescription, laboratory, and X-ray forms and print them in legible block letters (combines Solutions 1, 2, and 3).

Selection of the best solution strategy. Strategy B ranked highest in score and was adopted by the team. It incorporated four main components that directly attacked inefficiencies in client flow. The first component was moving anesthesia and other free medical supplies used by health providers to the consultation room. The team decided that health providers could individually register and track the use of these supplies, and ask the pharmacy to fill their stocks when necessary. This way, clients would no longer have to leave the consultation room to get medical supplies from the pharmacy. The second component involved simply giving an updated price list to the pharmacy on a routine basis (and collecting outdated price lists at the same time). As a result, clients would not have to go to the cashier just to find out the cost of a medication.

The third component was related to emergency services. Training paramedical staff to perform uncomplicated sutures avoided pulling physicians out of General Medicine

consultations to attend to simple emergencies, which usually created a backlog of waiting clients in General Medicine. In addition, asking administrative staff to accept only true emergencies for the Emergency Service eliminated a great cause of client dissatisfaction. The source of the problem was that some clients who did not want to wait for a General Medicine consultation would tell the cashier to charge them for an emergency consultation instead, so they could be seen more quickly. The doctor in General Medicine was then pulled out of his normal flow of consultations to attend to this false emergency. Understandably, clients who could not afford the additional cost of emergency services felt the practice was unfair.

Results

Implementing solutions. In September 1998, the Urrunaga team addressed the problem of low utilization using a rapid problem solving method. After reducing prices, launching an aggressive publicity campaign and hiring a certified midwife for women's health consultations, service utilization for Urrunaga clinic nearly tripled the following month.

In April 1999, the team used existing research data in their systematic team problem-solving cycle to improve client satisfaction. By May 1999, the team reported that they had implemented all but one of the components of their "best" strategy to reduce waiting time. The component that was still on hold was the training of paramedical staff, mostly due to time limitations, but also because the Max Salud Director of Medical Services was hesitant about allowing Urrunaga to expand the job responsibilities of paramedical staff. He wanted to ensure that the transfer of skills would be closely monitored so that newly-trained personnel would comply with technical competence standards.

In addition, the Urrunaga team members reported that they had implemented other solutions to address waiting time as well. The most important one was the transfer of follow-up visits from General Medicine to Preventive Services. This

action addressed the frequent backlog of clients in General Medicine. Backlog often occurred when the doctor in General Medicine asked a client to return for a follow-up visit, primarily to find out test results, or to let the doctor know how he or she was feeling. These short, unscheduled follow-up visits interrupted the normal flow of General Medicine consultations. To alleviate the backlog, the new policy requires that certified midwives or nurses in Preventive Services attend to follow-up visits of this nature.

Outcome. A rapid assessment in July 2000 showed a 42 percent improvement in waiting times (from 56% to 80% for clients who waited half an hour or less). Only one out of the 89 interviewed clients responded that their waiting time was too long, showing an improvement of 37.5 percent (from 72% to 99% for clients who report that their waiting time was either regular or short). The bar graph below depicts the final results of Urrunaga's team based problem-solving.

Figure 4. Final Results of Urrunaga's Team Based Problem-Solving
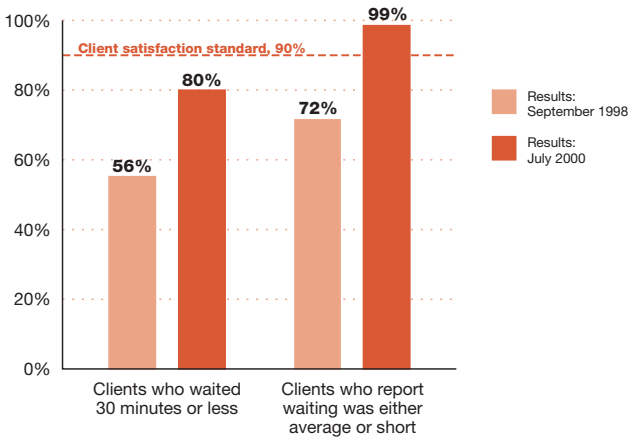
Quality Improvement Insights

The Urrunaga team was able to use client satisfaction data in two quality improvement cycles: rapid team problem solving and systematic team problem solving. In the rapid cycle, information about clients helped the team quickly remedy the problem of low utilization by reducing prices and bringing a certified midwife on staff. In the systematic cycle, client exit interview data helped the team identify waiting times as a key source of client dissatisfaction, and the team developed solutions to reduce waiting times by improving client flow. The Urrunaga experience demonstrates the importance of bringing clients' voices into the quality improvement process and gives us some key insights about quality improvement methods.

- **Some problems require the application of more than one quality improvement method.** Although systematic team problem solving allows teams to carefully analyze a problem and solve it, many times health personnel need immediate solutions. In these cases, rapid team problem solving is in order. However, as the Urrunaga team discovered, sometimes problems require a deeper analysis to search for root causes. In these cases, rapid solutions may be temporary "bandages." Using systematic team problem solving, the team was able to analyze client satisfaction and identify waiting time as the root cause of dissatisfaction. The team developed solutions to directly reduce waiting time by improving client flow, thus ensuring that utilization rates would remain high.

- **The Urrunaga experience suggests that new tools may be needed for teams to use qualitative data effectively.** Although the team used both qualitative and quantitative data for problem solving, the team set aside the qualitative data for the most part, showing preference for the quantitative data from

the exit interviews. Yet, qualitative data captures very specific client complaints, which are not always brought to light from exit interview results. Health managers and quality teams can give rapid responses to specific complaints if they are brought to their attention in a timely manner.

■ **Using client satisfaction data in QI activities allowed the Urrunaga team to evaluate the quality of care from clients' perspectives.** Most QI activities begin with an internal brainstorming among clinic staff. When client satisfaction data is collected, it is often only used as an outcome measure that is monitored over time. The Urrunaga experience was different because it brought clients' voices into the QI process, thus initiating an important dialogue with the communities the clinic serves.

Using Client Satisfaction Data for Quality Improvement of Health Services in Peru: Summary

Max Salud is a non-governmental organization that manages a network of health clinics in Chiclayo, Peru. The Max Salud Urrunaga Clinic serves a low-income community on the outskirts of the city. After the El Niño phenomenon in 1998, which greatly affected the Urrunaga catchment area, low utilization of the Urrunaga Clinic's services led to a strong focus on client satisfaction by the clinic's Quality Committee. The Urrunaga Quality Committee employed a series of quality improvement tools to analyze client satisfaction, including flow charts, fishbone diagrams, tables, brainstorming, and decision matrixes. By using two different quality improvement methods, the Commitee raised both utilization rates and client satisfaction. This case study shows how collecting and using client satisfaction data is an important way of bringing clients' voices into the quality improvement process.