Reducing Patient Waiting Times through Quality Assurance Methods in La Troncal, Ecuador[1]

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Long patient waiting time is a common problem in hospitals and urban health centers in Ecuador and elsewhere. Besides being a leading cause of patient dissatisfaction with health service quality, it is often related to short doctor-patient contact times that in turn can seriously reduce the technical quality of care.

This article describes a quality improvement effort undertaken by the staff of the La Troncal Health Center in Ecuador, with the assistance of a quality assurance project of the University Research Corporation and the Ecuadorian Ministry of Health. Data on patient waiting times was collected and analyzed, and solutions were devised and implemented using quality assurance techniques. As a result, the average patient's total waiting time fell from 116 minutes per visit to 66, and his or her contact time with health center staff members increased from 11 minutes to 16. It appears that the methods and techniques applied have potential for use elsewhere, because they can be applied easily by health personnel, and their cost of implementation is relatively low.

The activities reported here were carried out in Ecuador as part of a pilot demonstration project directed at improving cholera and acute diarrhea control using a quality assurance (QA) approach. A key feature of the QA method is that the health team identifies, analyzes, and solves its own problems (1). The pilot project used tools and methods that were feasible and appropriate in terms of the resources available in most developing countries. This article describes the activities of a local health team seeking to reduce long patient waiting times, a problem that has been cited as one of the most frequent reasons for patient dissatisfaction with health service quality (2). The problem-solving methods used in this case appear to offer an important way of improving the quality of care (3).

The La Troncal Health Center, a facility operated by the Ecuadorian Ministry of Health, is located in a poor zone along Ecuador's Pacific Coast. It is the main health facility of Canar Province's Health Area 5 that includes 13 health posts, each with a doctor and auxiliary nurse. Fifteen staff members, including four doctors, work at the La Troncal Center, which is vis-

ited by an average of 100 patients per day.

As part of a quality assurance effort, a participatory assessment of the quality of care provided to cholera and acute diarrhea patients was conducted at the Health Area 5 facilities in early 1994, and a workshop was organized for the purpose of identifying and analyzing problems. At that workshop, La Troncal Health Center staff members decided to further analyze the long patient waiting times that appeared to constitute one of the center's priority problems. More specifically, health center personnel had reported that patients had to wait a long time before being examined by a doctor, even though the doctors did not always have heavy workloads. According to the doctors, most of their patients asked to be seen between 9:00 a.m. and 11:00 a.m. This obliged the doctors to examine these patients too rapidly, thus affecting the quality of care.

On the basis of this information, a quality improvement effort was designed with the following aims:

- To measure and analyze causes of long patient waiting times at the La Troncal Health Center.
- To integrate health center staff efforts to identify and solve problems affecting waiting times.
- To monitor the implementation and effectiveness of the measures taken.

METHODS

Measuring Waiting Times

A data collection form, shown in Figure 1, was created and tested. It followed the patient, allowing each service provider to record the time a particular service started and was completed. Thus, the clinical records clerk, nurse, dentist, and doctor would record the time they spent with the patient. The patient would then hand in the completed form upon departing the clinic.

Data collection was done for one day, starting at approximately 6:00 a.m., when patients would start to gather outside to wait for the clinic to open, and ending at 4:00 p.m., when the clinic closed.

The study data were processed in a microcomputer using EPIINFO. Since provincial health ministry offices in Ecuador are equipped with microcomputers, and since most health centers and hospitals are within an hour or two of these provincial offices, it was decided that computer data processing would be feasible and efficient, both for this study and for any replications of it elsewhere within the country.

The following data were obtained:

- The total time spent by an average patient at the health center.
- The total amount of time spent waiting by the average patient.
- The waiting time spent by the average patient at each stage of processing through the health center.
- The waiting time spent by the average patient requesting a particular type of service (vaccination, dental or gynecologic services, medical visit).
- The total amount of time spent by the average patient in contact with the health center staff.
- The amount of time spent by the average patient in contact with particular types of staff members.

Identifying Bottlenecks and Other Problems

The health center management team presented the results of the study to the staff (15 people) during a four-hour meeting. A flow chart showing the different steps a patient goes through (Figure 2) was developed for the presentation. This tool enabled participants to identify the steps of the process and see how much time the average patient needed to complete each step.

Figure 1. A translated version of the data collection form used for measuring waiting times.

Three work groups were then formed. Their aims were to identify the main bottlenecks prolonging waiting times and to determine the root causes of each bottleneck. Quality assurance tools such as brainstorming, nominal groups technique, and fish bone diagrams were used. Each work group then presented its conclusions to a joint session at which a general discussion was held.

As shown in Figure 3, the longest waiting time occurred just after the patient's arrival, when the clinical record had to be found by the clerk and handed to the patient, who would then carry it through the next steps. At this point the patient also had to pay a fee for the service provided and obtain a receipt.

On the average, the patient had to wait 50 minutes for the clerk to locate the clinical record. Finding the cause of this long waiting time was relatively easy. Each patient's clinical record was identified by a code number that the patient had to provide to the clerk for record identification purposes. However, most patients had forgotten or lost the card on which this number was written. In that case the patient provided his or her name, which the clerk was then supposed to look up in an index card file to determine the code number of record.

Unfortunately, this index card file was incomplete and in total disorder, making it almost impossible to find a given name. The clerk told the work group that she had tried to organize the card file alphabetically, but since there were so many cards it was very difficult for her to find time to complete the task.

Instead, she had chosen to open a new clinical record every time she could not

Figure 2. Patient flow at the La Troncal Health Center, showing average pre-intervention waiting times.
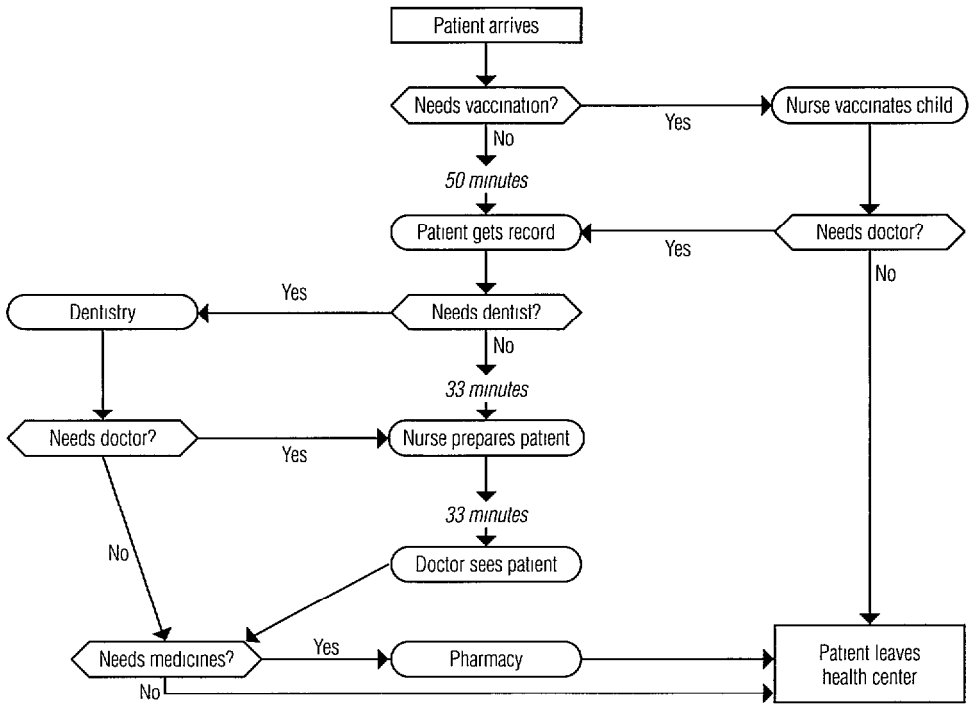

find a particular name in the card file. The result was that most patients received a different clinical record every time they came to seek health care at the center. This procedure not only prolonged waiting times (since creating new clinical records to record basic patient information was time-consuming), but it may also have affected the quality of care provided by the doctor, who did not have full access to the patient's medical history.

After finally obtaining the clinical record, the patient would go to the dentist or to the nurse's office for preparation. The average waiting time for this nurse preparation (which consisted of the nurse taking the patient's pulse, temperature, and blood pressure and recording it in the clinical record) was 33 minutes.

At this point, when the patient was ready to see the doctor, he or she would have to

Figure 3. Average waiting and health professional contact times before and after interventions.
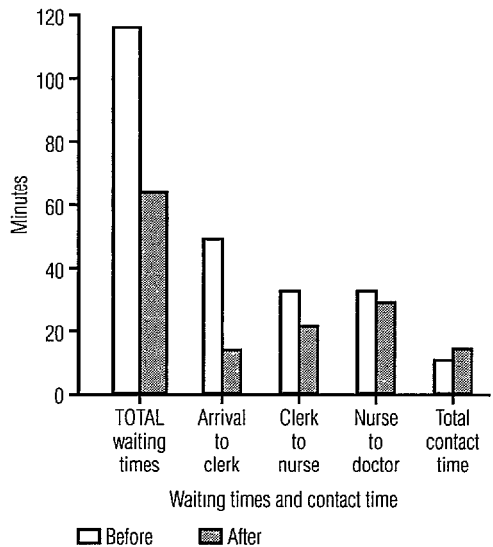
wait an average of another 33 minutes. However, the number of patients to be seen by each of the four doctors was not the same. Traditionally, the patient would choose the doctor he or she preferred (all of the four were male primary health clinicians), which resulted in one doctor having a large number of patients with longer average waiting times, while two other doctors had less patients and the fourth had but a few.

Another factor prolonging waiting time involved working hours. All of the health center's staff reported to work at 8:00 a.m. However, the first patients were not ready to be seen by a doctor until about 9:15 a.m., after obtaining their clinical records and having their vital signs taken by the nurse. In the meantime the doctors, who had nothing to do, used this time to read the newspaper. Some of them said they did not see the point of arriving at 8:00 a.m.

In addition, waiting times were increased by the high proportion of clients who visited at peak hours to obtain health certificates. These certificates were required by local schools for registering pupils, and most local employers also required them of those applying for jobs (mostly as sugarcane cutters).

Overall, the total waiting time averaged 116 minutes per patient, while the total useful contact time with clinic staff members averaged only 11 minutes per patient.

Designing Interventions

Additional work group meetings were held to design interventions directed at the main bottlenecks identified in the previous sessions. These interventions were discussed and details agreed upon by the staff at a final joint meeting. The main interventions decided upon were as follows:

(a) The clinical records clerk would immediately organize the index card file alphabetically. To speed up the task, nurses would take turns helping in the afternoon. Also, patients would be advised by the clerk about the importance of remembering their code numbers.

(b) The records clerk and nurses would begin work one hour earlier (at 7 a.m.) so as to have patients ready for the doctors by the time the latter came to work at 8 a.m. In turn, the clerk and nurses would leave one hour earlier in the afternoon, when there were usually no more patients. Since patients used to congregate outside the health center at 6 a.m. waiting for it to open, this change would reduce waiting as well as make better use of the doctors' time.

(c) Instead of choosing the doctors they preferred, patients would be assigned randomly to the four doctors at the center. This would eliminate long lines at one doctor's office while others saw fewer patients. It was noted that some patients might be dissatisfied with this new system. However, the change offered at least two advantages: (1) waiting times would be reduced, and (2) doctors would have to be more careful about the quality of their work and the completeness of their clinical records. Since a particular patient could be seen next time by a different physician, the doctors would be indirectly judged on the quality of their previous work through a form of spontaneous "peer review."

(d) Clients would be informed that health certificates would be issued only in the afternoons, when there were relatively few patients. It was also found that Ecuadorian law authorizes schools to require health certificates only of those entering first grade and high school. Accordingly, the health center communicated this point in writing to local schools, ad-

vising principals to ask for a certificate only in these cases.

These interventions were implemented and overseen collectively by all of the health center's staff members, who met every week or two to discuss the progress and details of each measure. A member of the quality assurance project visited the health center every month to meet with the center's management team and staff.

RESULTS

Three months after the first of these interventions began, waiting times were measured again. The same procedures and data collection form used in the first measurement were employed. The resulting average waiting times obtained are shown in Figure 3.

Overall, the total average waiting time per patient was reduced from 116 minutes to 66, a drop of 43%, while the average patient's contact time with staff members rose from 11 minutes to 16, an increase of 45%. It seems clear that this additional time with patients created opportunities for improved diagnosis, treatment, and health counseling. It would also seem that waiting an average of over an hour was uncomfortable for patients. However, compared to the original waiting time of nearly two hours, the new average time clearly represented an important improvement.

The greatest waiting time reduction (from 50 minutes to 14) occurred between the patient's arrival and procurement of the clinical record. The average wait between the record clerk's office and the nurse's office was also reduced considerably, from 33 to 23 minutes; while between the nurse's office and the doctor's office the average wait fell slightly, from 33 to 29 minutes.

It also appeared that a number of qualitative improvements were achieved. Perhaps the most important was emergence of improved teamwork by the center's staff. According to many staff members, for the first time in many years the doctors, nurses, clerks, and other health workers were sitting together to openly discuss the health center's problems and ways to improve their work. Also, it appears that the staff's experience of applying remedial measures to the waiting time problem had helped to engender a sense of pride and a more positive attitude toward work.

CONCLUSIONS

Long patient waiting time is a common problem at most hospitals and urban health centers in Ecuador and other countries. It is probably among the main causes of patient dissatisfaction with health service quality, and it may also be related to short doctor-patient contact times, which in turn tend to lessen the technical quality of care.

The methods and techniques used in the case described above appeared to effectively shorten the average patient waiting time while simultaneously increasing the time patients spent with health providers. The major waiting time reductions were achieved mainly by speeding the flow of patients through the clerk's office and nurse's office. By comparison, the gains made by reducing the time spent waiting for the doctor were relatively slight. This finding raises doubts about the usefulness of prohibiting patients from choosing the doctor they want, since the advantage of slightly reduced waiting time at this point might not justify the potential disadvantages associated with physician discontinuity.

The methods used were easily applied by the health personnel involved, and the cost of implementation was very low. Moreover, the experience of applying these methods appears to have focused attention on the importance of teamwork, increased the use of teamwork by the health center staff, and improved the general attitude of staff members toward their work.

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World No-Tobacco Day

Every year, World No-Tobacco Day is observed on 31 May 1996 in order to discourage all forms of tobacco use and encourage attainment of tobacco-free societies. This year's theme, selected by the World Health Organization in cooperation with the International Olympic Committee, was "Sport and the arts without tobacco."

The tobacco industry uses sponsorship of sports and entertainment events to complement or replace other types of marketing activities and to associate its products with positive images. Tobacco advertising has been restricted in some countries, but according to market researchers, sponsorship has the same effect as advertising. In addition, there are no health warnings connected with tobacco sponsorship.

Developing countries have seen an increase in recent years in tobacco company sponsorship of cultural and sports events. This activity can be stopped by legislation. Replacement funding can be generated from tobacco taxation, so that sports and arts groups can afford to give up tobacco company sponsorship.

Smoking has been restricted at all Olympic Games since the 1988 Winter Olympics in Calgary. Likewise, the Atlanta Committee for the Olympic Games has announced a smoke-free policy for all 1996 Olympic venues, along with an advertising prohibition and tobacco sales restrictions. It is the conviction of both WHO and Olympic authorities that any association between tobacco and sports is incongruent.

Source: World Health Organization. Special issue: advisory kit 1996. *Tobacco Alert* 1996:1–24.