Health Care Sector Reform and Quality Assurance in Costa Rica

Results of Process Improvement Teams Working in Health Facilities Managed by the Costa Rican Social Security Institute

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Executive Summary

Over the past years, Costa Rica has been undergoing an organizational change that is crucial for health care delivery. Under the health sector reform program, the Caja Costarricense del Seguro Social (CCSS) has become responsible for both preventive and curative health services in the country. The Ministry of Health (MOH) is strengthening its role as the institution responsible for establishing standards and monitoring their application in health care delivery. A new integrated model for health services complements this shift in responsibilities, based on the principles of decentralization of health care delivery and a larger involvement by the community and health service providers in decision-making processes. The main goals of this reform plan include better access, quality, and delivery of health care services based on the needs of the target population.

Costa Rica has taken the search for improvement of quality health care seriously, and has initiated several activities in that area. The Quality Assurance Project, together with the Latin American/Caribbean Health and Nutrition Sustainability Contract (LAC HNS), funded by the United States Agency for International Development (USAID), has provided technical assistance to introduce continuous quality improvement methodology in seven hospitals and clinics in the South Central Health Region. This intervention was expected to result in concrete improvements for specific problems in each of these health facilities, and to serve as a model to be duplicated in health facilities elsewhere in the country.

The methodology used in Costa Rica starts from the premise that the importance of continuous quality improvement can be convincingly demonstrated through the systematic resolution of problems considered priority by health workers. This success of the assistance has exceeded expectations, not only of the participating health workers, but also of officials and management from the Caja del Seguro Social, the regional health directorate, and the Ministry of Health.

Staff from seven health facilities participated in the quality improvement effort: two hospitals, four clinics, and one health district. Participating staff recognized the importance of patients' perception of service quality, and identified problems that focused on the interaction between patients and health service providers. Problems identified included: high number of patients being rejected on a daily basis at the ob/gyn outpatient clinic; long waiting time for follow-up visits of diabetic patients; delays in retrieving patients' medical records in an outpatient clinic; long lines to get a physician's appointment; long pre-operative hospitalization; and the number of pediatric patients not seen on a daily basis. The health district office decided to deal with the delay in responding to mail received.

A team of health workers from each clinic or hospital implemented all steps in the quality improvement cycle. These teams were interdisciplinary and consisted of representatives from all those departments or services directly involved in the problem under study. As an example, in the case of a clinic with a problem retrieving medical records for outpatients, team members included nurses and physicians from the out-patient clinic, and staff from the medical record filing office. Including people working in each of the areas related to the problem and representatives from the various professional groups is crucial to the success of a team effort. Thorough problem analysis, careful and creative solution design, and support for implemented changes only occur if persons from all the relevant services of the health facility are involved in the problem solving process from the beginning.

Four out of the seven groups were able to make improvements in identified problems. For instance, the number of patients rejected at the ob/gyn clinic decreased from 15.5% to 0%, the waiting time for retrieval of medical records decreased from 70 to 24 minutes, and waiting time for diabetic patients diminished from 5.7 hours to 3.7 hours. Initial results of a hospital team working on lengthy, pre-operative hospitalization were positive, but revealed a need for the involvement of other professional groups, particularly surgery personnel. As a result, a second improvement cycle has begun in this hospital.

Data gathered at one of the clinics showed a change inpatient population depending on the agricultural season. The influx of migrant workers during the harvest made it necessary to implement different improvement efforts than during other times of the year. The team thus discovered the usefulness of a thorough problem analysis. Similarly, the hospital with a large number of pediatric patients not being seen sought involvement of other regional health centers to analyze the problem further.

Various teams were able to identify other unanticipated positive effects resulting directly from the changes. In several clinics, the long lines of patients waiting not only for clinical care, but also for related services, such as the pharmacy, disappeared. Communities became more directly involved in the planning of care and initiated activites to open neighborhood health posts. Both patients and communities took notice of health workers' attention to quality and customer service, and began to get more directly involved in activities designed to improve health care delivery within their community. In one clinic, the health care providers had a heavy work load before the start of the study, and an increase in the number of health workers had been requested. After the introduction of the improvements, the work load for everyone diminished, and no new staff were needed. Finally, all teams involved in the process improvement efforts decided not only to monitor results to ensure sustained improvement, but they also decided to form new teams to look at different problems, thus implementing a continuous work plan to improve health care services provided in their facilities.

Training and support were provided to seven health centers through a series of workshops and individual clinic encounters. Lessons learned in Costa Rica and other countries have shown that team members need extensive support during all phases of the process improvement cycle to make sure that the cycle is successfully completed, and that they learn to successfully use the tools and techniques that form an integral part of the methodology.

Without a doubt, the results, commitment and planning of future activities for quality improvement clearly show that the approach used to implement a permanent quality improvement program is very successful.

Introduction

Over the past years, Costa Rica has adopted and publicly endorsed quality improvement in health care delivery as one of the cornerstones of the country's health reform plan. Health reform is in the process of being implemented to meet the changing needs caused by fluctuation in the epidemiological profile of the population and the increasingly higher costs of health care.

Over the last three decades, Costa Rica has reached outstanding results in social and health development, mainly as a result of the country's political stability and substantial investment in the health sector (7-10% of the domestic per capita income). Such investment was accompanied by a significant improvement in health indicators, such as infant mortality rates and newborn survival expectation. At the same time, the epidemiological profile began to mirror that of more developed countries.

Under the existing health service delivery model, population increase, together with the epidemiological profile change, would have required increasing investments of resources for health care. However, the economic slowdown did not permit an increase of public spending in health care, resulting in recent years in a reduction in health indices. Within the framework of the country's overall structural adjustment program, consensus was reached to introduce a new model of health care delivery. The new health sector reform plan is based on disease prevention, institutional strengthening with decentralization of the decision-making process, and review of financing of care at the local level. It also emphasizes the involvement of health workers and the communities in incorporating environmental concerns in efforts to improve health.

As part of the reform, a reassignment of responsibilities took place between the Ministry of Health and the Caja Costarricense de Seguro Social (CCSS). The Ministry is responsible for the establishment of standards, and the monitoring of compliance to those standards, in both public and private service provider sectors. The CCSS has become responsible for providing all preventive and curative health care services in the country.

The main objective of the reform plan is "to strengthen a sectoral management and planning capabilities, improve coverage, access, opportunities, quality, and the general physical environment of the health facilities in accordance with the needs of the population and in relation to responding to the country's economic conditions."[1] These

[1] Caja Costarricense de Seguro Social, Unidad Preparatoria del Proyecto de Reforma del Sector Salud, El proyecto de reforma del sector salud. Summary Document. San Jose, Costa Rica, June 1993, p. 2.

goals are integral components of an encompassing effort to improve quality of care - an objective pursued by the CCSS for several years.

Quality Improvement Program

The CCSS has seriously pursued quality improvement of health care delivery, undertaking several initiatives in that area.[2] For the past two years, the Quality Assurance Project, together with the Latin America and Caribbean Health and Nutrition Sustainability Contract (LAC HNS) has provided technical assistance to the CCSS in order to introduce the methodology of quality assurance as part of health care reform. After several meetings held with representatives from USAID, CENDEISSS[3], the General Health Directorate, and the Technical Health Services Directorate of the Ministry of Health, the following strategic objectives were agreed upon:

- To carry out quality assurance activities in priority areas, giving emphasis to these interventions that will lead to increased client satisfaction, and that will generate positive attitudes toward health care services among the public.

- To evaluate and analyze the changes that resulted from quality improvement by identifying high cost services with potential for savings.

- To develop quality assurance activities that may be duplicated elsewhere in the organization or sector.

- To promote and support the introduction of routine quality assurance activities in all areas of health care delivery.

Methodology

The methodology of Quality Assurance (QA) focuses on the analysis and systematic improvement of processes that are normally carried out as part of health services delivery. The methodology used in Costa Rica is based upon the premise that the importance of

[2] Other initiatives include technical assistance provided by Medex and SIMPLIT.

[3] CENDEISSS: Centro de desarrollo estratégico e información en salud y seguridad social: (Center for strategic planning and information for health and social security).

continuous quality improvement can be convincingly demonstrated through the implementation of solutions to specific problems that health workers consider priority. At the same time, the experience gained in various clinics can also show the significance of a culture of quality for a long-term success of QA in health care delivery. A change of culture, through which health workers and providers agree on systematically adopting quality as their main goal, is one of the cornerstones of any program of continuous quality improvement.

Quality Assurance is viewed as a cyclical process with different component steps. The cycle consists of ten steps, each of which represents an essential component in an ongoing program of quality assurance (see figure on the following page). Steps 5 through 10 describe the improvement of processes, which includes three stages: 1) definition and analysis of problems to be improved, 2) review and implementation of solutions, and 3) evaluation of the impact of solutions on the original problem. A health care team working in the clinic or hospital carries out all steps of the cycle. Such a team is interdisciplinary and consists of representatives from all departments or services in the facility affected by the problem under study. Including people working in each of the problem-related areas, as well as representatives from the various professional groups, is essential to the success of any team effort. Teamwork is essential to quality improvement to ensure a thorough analysis of the problem, a careful and creative design of solutions and support for proposed changes.

The teams used a number of tools to carry out the different steps in the process improvement cycle: brainstorming, flow charts, and cause-and-effect diagrams were used to define and analyze the problems. Based on the selection of possible causes, indicators were developed and data were gathered to confirm the root cause. Analysis of the collected data allowed the team to have a better understanding of the nature of the problem and, therefore, to better target any solutions being developed. Using brainstorming, the teams planned different possible solutions. The best solution was selected by using a multiple criteria matrix. After carefully defining all solution components, a detailed implementation plan was developed. This plan included a component to inform management and staff about the Quality Improvement initiative. Solutions were introduced, and new data were collected to determine their impact upon the problem as initially defined. Storyboards were used for the final presentation of results. See Appendix II for a summary of findings.

All health facility personnel involved in the study recognized the importance of the patient in any effort designed to improve health care quality. Therefore, problems selected in this first phase focused on areas of direct interaction with patients.

Problems Identified

1. High number of patients being rejected daily in the ob/gyn outpatient clinic
2. Long waiting time for follow-up visits of diabetic patients.
3. Delays in retrieving patients' medical records in the outpatient clinic.
4. Long lines to get a physician's appointment.
5. Long pre-operative hospitalization.
6. High number of pediatric patients rejected on a daily basis in ambulatory care clinic.
7. Delay in responding to incoming mail.

FINDINGS OF TEAM ACTIVITIES DESIGNED TO IMPROVE HEALTH CARE DELIVERY QUALITY

HEALTH CENTER	PROBLEM SIZE	SOLUTIONS	IMPACT

<u>Clínica Dr. Solón Núñez</u> Delay in retrieval of diagnostic reports and medical records for outpatient services.	- Records were delivered with at least 39 minute delay in 62% of all cases.	New Process Introduced: - Medical records for appointments should be available at 3:30 pm the day before. - Staff in reception and medical records department trained in new process.	Average delay: 26 minutes (58% of all cases) - A monitoring system was established. - Appointments given to high-risk clients - Better organization of filing system - Long lines in other departments were reduced Involvement of Community: - Transformation of community centers - Two physicians make visits to community

<u>Clínica Dr. R. Moreno Cañas</u> A high number of patients being rejected on a daily basis at the ob/gyn outpatient clinic.	- 27% of patients were rejected - 44% of all gynecological visits were pre-natal check-ups. - More important diagnosis took place in gynecology. - Waiting time for a gynecological appointment was 2 months. - 103% performance level for gynecologists - Low % of patients seen for family planning services	1. Pre-natal visits were assigned to a general practitioner. 2. Refresher talks on basic ob/gyn principles, family planning and general pathology given to physicians and nurses. 3. Drugs and medicines to be stored with instructions and treatment protocol made available for use by nurses.	- 0% of patients was rejected. - 5% of patients were referred for specialized gynecological care - Waiting time for a gynecological appointment: 1 day - 82% of patients seen for family planning services

HEALTH CENTER	PROBLEM SIZE	SOLUTIONS	IMPACT
Clínica Integrada de Puriscal Long waiting time for follow-up visits of diabetic patients.	- Waiting time: 5.8 hours	- Training activities start at 7:00 AM - Patients seen by a physician - Special window for diabetic patients - Lab appointments are given at the outpatient clinic front desk.	- Waiting time: 3.7 hours
Hospital de Liberia Long pre-operative hospitalization for patients admitted for elective surgery.	- Minimum 66 hour wait. - Maximum 221 hour wait.	- Only hospitalization of patients with a complete pre-operative evaluation done in the outpatient clinic. - Surgery patients all in one ward - Medical records available when patient is admitted - Blood donation prior to hospitalization - Standard time: 48 hours	- Minium wait: 59 hours - Maximum wait: 287 hours - Potential savings/month: gynecology: $2,039 surgery: $626

Results of the Teams

A. The quality improvement team of the **Clínica Solón Nuñez** chose as their problem the delay in retrieval of diagnosis reports and medical records for outpatient services. This study led to excellent results. Their efforts were successful in cutting down delay in retrieval time from 39 minutes to 26 minutes, but more importantly, high-risk patients were now given appointments. Other significant improvements were also made in related areas, such as improvements in organization, delivery time, and service quality of medical records, clinical laboratory, pharmacy, support services and nursing staff assisting health care providers in the Outpatient Clinic. Doctors in the Outpatient Clinic were able to create some spare time, resulting in rotation of physicians to work in the community, coordinated efforts with organized groups from the community to improve access to services. Feedback, motivation, and satisfaction from all team members, as well as from the health facility, were quite satisfactory.

B. At the **Clínica Dr. R. Moreno Cañas**, the quality improvement team focused on the problem of the high number of gynecological patients being rejected at the Outpatient Clinic. Initially, the team showed that there was an overload in the hour/doctor ratio for the gynecologist. The problem was resolved by delegating family planning and low-risk cases to nurses and general practitioners, who were given authority to treat, using administrative and treatment protocols developed by the team.

As a result, the number of patients needing specialized gynecological visits has been reduced, eliminating rejections. The average waiting time was cut down from more than a month to less than 24 hours, and there are more gynecological hours available to provide training and technical support to general physicians and nurse practitioners to provide health care delivery and education in family planning. These satisfactory results have greatly motivated all team members. These results were achieved without any additional of investments or other resources.

C. The team at the **Clínica Integral de Puriscal** studied the long waiting time of diabetic patients in the Outpatient Clinic. This effort resulted in a reduction of the waiting time for patients seen at the diabetic clinic by more than two hours. The quality improvement work has led to a highly integrated, very successful and motivated team. Team members were interested in continuing with a new cycle so as to improve further the waiting times, and to integrate other teams to seek process improvement.

D. The team at the **Clínica de Juan Viñas** achieved interesting results. Conditions present at the beginning of the study changed drastically. Initially, there was a rejection rate of less than 10 patients per month; nevertheless, during the early morning hours, clients had to stand in line for a long time to be able to make an appointment. This was a source of concern for the team dealing with this problem. The team designed proposals for improvement; however, during the data collection phase, it found that more than 300 patients/month were rejected and lines were longer. An analysis of the situation showed that the initial population had increased significantly as a result of the arrival of migrant workers, mainly from Nicaragua, who were coming to work in the

sugarcane harvest. The group of immigrant patients, consisting mainly of sick people with an urgent need for health care, caused such change in expected data. However, the quality assurance effort provided an excellent learning experience for the team members and local authorities, since it showed the impact of a change in basic conditions on quality of care. Team members did not get discouraged, insisting on starting up another improvement cycle to deal with this immigration-related problem. At the time of this report, the newly collected data are being analyzed. In the next phase, the team will include representatives from other primary care programs to review proposed actions. The team has committed to completing the analysis before the end of the sugarcane harvest (and prior to changing conditions in patient population), and to implementing improvement measures after the analysis. Following the departure of the migrant workers, the team will collect new data to compare them with the first set of data, based on the permanent local population. Thus, there will be two efforts: the first one will be carried out at the beginning and the end of the analysis, based on the resident population, with the purpose of taking a number of specific steps to reduce waiting times, and a second effort, based on the migrant worker population.

E. At the **Hospital de Liberia**, the quality improvement team showed an improvement of 10% - 15% in waiting times for elective surgery for patients already hospitalized. The study results clearly indicated that the lack of compliance to surgery schedules is the main cause of this problem. As a result of a lack of an effective involvement by the hospital surgeons in the team from the beginning of the quality improvement effort, this cause had not been considered. Therefore, the team presented the concepts of continuous quality improvement to all surgeons, including the head of the department, and they have now agreed to participate in the new improvement cycle. This new cycle will try to further improve the same problem, this time with the expanded team. Indicators and standards have been developed, as well as data collection instruments and procedures. The group consists of around 15 members, all of whom are highly motivated, involved and committed to this effort.

Another important component of this study is the calculation of the costs associated with long waiting times by patients hospitalized for elective surgery procedures. Expected savings of reduced pre-operative hospital waiting time are estimated at $2,000/month.

F. The team at the **Hospital de Cartago** has not been able to complete its process improvement cycle. There have been a number of problems related to the involvement and support of some of its team members, some of whom left the team. However, the team was reorganized, and it recruited some key personnel from the pediatrics outpatient clinic, such as its Director, general practitioners, the Head Nurse, and administrative staff from clinical records.

Notwithstanding all these setbacks, the quality improvement effort has been resumed, and the team is currently reviewing all collected data in order to be able to formulate solutions. There is a higher level of motivation, and it is obvious that new team members have had a positive influence on the continuation of this effort, and the quality improvement program in the hospital.

G. The team of the **South Central Regional** office has not finished its process improvement cycle because this was the last team that was formed (on its own initiative). The team has defined the problem in operational terms, has analyzed the problem with the appropriate tools, and has developed tables, indicators and quality standards. Data were gathered to measure processing time of mail received by the Regional Directorate. These data confirmed significant delays. At the suggestion of the technical assistance team, representatives from the administrative staff have been added to the team, so that the solution development and implementation can be successfully completed.

The future of the Quality Assurance Program in Costa Rica

With the implementation of the quality improvement process in these seven facilities, the Caja Costarricense de Seguro Social (CCSS) and the CENDEISSS team have accomplished the following: Interdisciplinary teams at all levels of the Región Central Sur and Región Chorotega have been trained in the methodology of continuous quality improvement; steps are being taken to continue to improve quality in health facility work units, together with an impact assessment of their effectiveness and efficiency on the various services; data have been collected to show the current quality of services provided; quality improvement results and methodology have been documented and disseminated to show the benefits for the country, and to encourage a positive change in the culture and values of all health care facilities in Costa Rica.

The quality improvement experience has been very positive. The use of quality assurance methodology has shown that it is possible to improve, in a cyclical and continuous manner, the quality of health care and it support services. The efforts and commitment shown by the health workers who have carried out the improvements in quality in their faciliites are themselves one of the components for a sustainable and lasting program of quality in health care.

In the months since the end of the technical assistance to the Caja de Seguro Social and the health facilities that it manages, the enthusiasm and commitment of the staff have contributed to the expansion of quality improvement activities. All of the original seven teams are still functioning. In Hospital Liberia, four teams are now working. In addition to the team in the surgical department, teams have been created in the out-patient clinic, nutrition, and pharmacy departments. In Hospital Carthago, four teams are also working. A new team has been formed in Children's Hospital. Two awareness seminars for Costa Rica's largest public hospital, San Juan de Dios, have been given, each to forty people, as a prelude to building a hospital-wide QA program. An inter-institutional team has been formed to raise awareness and initiate QA activities. This group includes the psychiatric hospital, the Association of Laboratories, a human resources department, and the pension management group, among others. Activities are about to begin in two other regions, Central Norte and Pacifico Central, to include more than thirty clinics and hospitals.

APPENDIX I

Calendar of events in Costa Rica

Training has been provided through workshops together with direct technical assistance. The program was developed during a preliminary visit by Lori DiPrete Brown in March 1993.

The first workshop was conducted in November 1993 with help from Anna Dvoredsky, John Holley and Hector Colindres. Concepts such as quality, quality assurance and quality improvement cycle were introduced; the significance of costs was emphasized; the development and use of analytical tools and methodology were shown as well; the definition of problems, the identification of indicators, and the importance of teamwork were stressed. During this first training workshop, the problems were identified, as were opportunities for improvement; through problem-analysis, main causes were selected and various instruments for process improvement developed. Three groups were selected to participate in the South Central, Chorotega and Liberia areas, including the Hospital Dr. Enrique Baltodano and Centro de Salud de Puriscal.

In early 1994, a proposal was developed and submitted to the new authorities at the Caja Costarricense de Seguro Social, requesting to include other units from the South Central Region, Hospital Max Peralta, Clínicas Moreno Cañas and Solón Nuñez, Hospital William Allen with Clínicas Juan Viñas and La Suiza. A total of seven quality improvement teams, thus, participated.

In September and October of 1994, the new teams were trained in a workshop on leadership, total change management, characteristics of high performance teams, and facilitation of meetings. Basic quality improvement instruments were discussed. Technical assistance was provided by Dr. Héctor Colindres.

The following improvement opportunities were identified by the quality assurance teams:

- Long waiting time for diabetic patients at the outpatient clinic. Integrated Health Center of Puriscal.

- Long waiting periods of time for patients admitted to the hospital for elective surgery. Hospital Dr. Enrique Baltodano, Liberia.

- Increase coverage of cervix/uterine cancer screening. Regional team of Chorotega, Ministry of Health/Caja Costarricense de Seguro Social.[4]

- Delays in outpatient clinic services due to unavailability of clinical records or delays in getting clinical records. Clínica Dr. Solón Nuñez.

[4] Unfortunately, this team was unable to complete its work.

- Rejection of patients in the ob/gyn outpatient clinic. Clínica Dr. Moreno Cañas.

- Long lines to make appointments at the Clínica de Juan Viñas. Team from Hospital William Allen and associated clinics, Juan Viñas y La Suiza.

- Rejection of pediatric patients. Outpatient clinic at Clínica Ing. Alfredo Volio, Hospital Max Peralta.

- Delays in handling and processing mail received by the Dirección Regional Central Sur. Equipo Regional.

In December 1994, the second workshop was conducted. This seminar focused on the use of instruments for the data analysis, creation of solutions for the identified problems, and on how to manage organizational change.

During this period, technical assistance was provided to all teams by the CENDEISS team through follow-up visits, and sessions held to provide orientation and updates on methodology to new team members.

The third workshop and a seminar to present the results to representatives from the Ministry and the Caja were held in June 1995.

APPENDIX II

QUALITY IMPROVEMENT STORYBOARDS

Clínica Dr. Solón Núñez

Delay in delivery of diagnostic reports and medical records for outpatient services.

Clínica Dr. R. Moreno Cañas

High percentage of patients rejected at the ob/gyn outpatient clinic.

Clínica Integrada de Puriscal

Long waiting time for diabetic patients in the outpatient clinic.

Clínica de Juan Viñas

Long lines to get medical appointments in the outpatient clinic.

Hospital de Liberia

Long pre-hospitalization for patients admitted for elective surgery.

Hospital de Cartago

Rejection of pediatric patients in the outpatient clinic.

Región Central Sur

Delay in processing mail received by the Regional Directorate.