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TECHNICAL REPORT SUMMARY

The Chile Quality Assurance Program: Final Evaluation





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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, USAID Missions and Bureaus, and other agencies and nongovernmental organizations that cooperate with USAID. The QAP team consists of prime contractor Center for Human Services (CHS), Joint Commission Resources, Inc. (JCI), Johns Hopkins University School of Hygiene and Public Health (JHSPH), Johns Hopkins Center for Communication Programs (JHU/CCP), and the Johns Hopkins Program for International Education in Reproductive Health (JHPIEGO). It provides comprehensive, leading-edge technical expertise in the design, management, and implementation of quality assurance programs in developing countries. CHS, the nonprofit affiliate of University Research Co., LLC (URC), provides technical assistance and research for the design, management, improvement, and monitoring of healthcare systems and service delivery in over 30 countries.



The Chile Quality Assurance Program: Final Evaluation

Abstract

This *Technical Report Summary* is an abridged version of a longer publication from QAP, "Evaluation of the Chile National QA Program." The summary provides an overview of the Quality Assurance (QA) Program in the Chilean healthcare system. The program began in the early 1990s, and, working through a QA Unit in the Ministry of Health, developed training modules, standards, and communication strategies to support the QA effort.

The summary details the process whereby the QA effort became self-sufficient, the involvement of universities in the QA effort, and the methodologies for standard setting and quality improvement. It concludes with several recommendations relating to management and leadership, technical functions, support functions, and program management.



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Acknowledgement

The authors are indebted to the staff of the Quality Assurance Project (QAP) for technical and administrative assistance. The willingness of the Chilean health authorities at the central, regional, and district levels, especially the Quality Assurance (QA) Unit of the Ministry of Health, to make themselves available at all times is recognized with considerable gratitude. The evaluation team acknowledges the support provided by the United States Agency for International Development (USAID) to fund the final evaluation and thanks the Agency for the opportunity to contribute to the success of the Chilean QA Program.

Recommended citation

Legros, S., R. Massoud, O. Urroz, and E. Kelley. 2000. "The Chile Quality Assurance Project: Final Evaluation." *Technical Report Summary* 1(2). Published for the U.S. Agency for International Development (USAID) by the Quality Assurance Project (QAP): Bethesda, MD.

About this series

The *Technical Report Summary* series provides concise descriptions and background information on the Quality Assurance Project's technical intervention results, evaluation results, and other project activities. This summary is derived from a longer report that can be requested at qapdissem@urc-chs.com or 301-941-8532. For more information on the evaluation of Chile's Quality Assurance Program, please contact slegros@urc-chs.com.



The Chile Quality Assurance Program: Final Evaluation

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Acronyms

DISAP	Division de Salud de las Personas
MOH	Ministry of Health
NGO	Nongovernmental organization
PHC	Primary healthcare
QA	Quality assurance
QAP	Quality Assurance Project
QD	Quality design
QI	Quality improvement
SATUS	Servicio de Atención al Usuario
SEREMIS	Secretarías Regionales Ministeriales de Salud
USAID	U.S. Agency for International Development

I. Introduction

The Chilean Ministry of Health (MOH) asked the Quality Assurance Project (QAP) to evaluate Chile's program for the Evaluation and Improvement of Quality, or QA Program. It had been implemented starting in 1991 with QAP's technical assistance and was funded by the U.S. Agency for International Development (USAID). The QA Program now sponsors quality assurance (QA) programs in nearly all of Chile's 13 regions and 29 decentralized Health Services.

The evaluation was conducted from July 12–30, 1999 by a joint team of three international consultants from USAID/QAP and the director of the QA Program. The MOH and senior QAP staff provided information and support. The evaluation team first constructed a logical framework of technical areas. Next, for each of those areas it determined questions, data sources, method of data collection, and indicators for the different questions. Lastly, it decided whether data would be collected

before or during the evaluation visit. This summary reports on the following three areas:

- QA Program structure and management
- QA Program technical functions
- QA Program support functions

The evaluation team conducted an extensive document review at the Quality and Regulation Unit, which directed the QA Program and which is part of the Division of People's Health (DISAP) at the MOH. In addition, the team conducted site visits using structured and unstructured interviews, self-assessment forms, and appreciative inquiry.

II. Origins of the Chilean QA Program

Historically, Chile has been at the forefront of healthcare service provision in Latin America in terms of prevention, primary care, and medical education. Despite the low incomes of almost half the population, health indicators rank Chile among more highly developed countries in terms of healthcare. Its socioeconomic statistics include:

- 14 million inhabitants
- 25 percent of population below poverty level
- 95 percent literacy rate

- Life expectancy of 71.4 years for men and 77.3 years for women
- \$2 billion annual health budget
- \$190 public health expenditures per capita
- 6.5 percent of Gross National Product for health
- Infant mortality rate: 9.8 per 1000 live births
- Perinatal mortality rate: 4.1 per 1000 live births
- Maternal mortality rate: 20 per 100,000 live births

In 1982, the MOH and the World Bank launched the Health Sector Reform Program. It decentralized the public healthcare system—which serves 60 percent of the population—into 13 Health Regions, which, in turn, were further segmented into 29 Health Services.

In 1989, Chile held its first elections after 17 years of military dictatorship. The new government defined the role of healthcare as essential both to improved standards of living and to achieving economic development. The government's social policies were based on promoting equity, social participation, respect for the dignity of individuals, and solidarity with poor and neglected segments of the population. In the effort to strengthen the public health sector, quality of health services ranked high as a priority among both patients and providers.

Public sector patients expressed concern over limited treatment availability and rejection of patients needing care. They also cited long waiting periods; delayed care; inappropriate use of costly special-

ists; and infrastructure-related obstacles to quality care, such as physical and structural decay. They also expressed dissatisfaction with user-provider relationships.

Concerns expressed by providers included inadequacies in the work environment, outdated technology and infrastructure, inadequate coordination, lack of incentives, high work pressure, and lack of teamwork. Hesitation to honestly express feedback was also acknowledged.

A small group of QAP consultants worked with members of the Primary Healthcare Department of the MOH to design the national QA Program. They concurred on the following guiding principles:

- The effort must be national in scope
- Participation in the QA Program must be voluntary
- Improvement must be achieved at all levels of the system
- A broad array of health stakeholders must be involved
- Existing technical and administrative lines of authority must be respected

Based on these principles, MOH officials defined the QA Program's objectives: (a) raise awareness of the importance of providing quality throughout Chile's healthcare system, (b) develop a structure to implement and sustain QA activities, (c) achieve measurable improvements in quality of care and service delivery, and (d) improve patient satisfaction.

The QA Program team, led by Dr. Gilda Gnecco of the Primary Healthcare Department, developed a plan of activities to achieve the objectives:

- Organize a national conference with representatives from all the regions and Health Services, as well as from universities, nongovernmental organizations (NGOs), and the private sector, to introduce QA concepts and methods and motivate local health authorities to develop their own QA plans and activities. This conference was held in July 1991 in Punta de Tralca
- Support training of healthcare providers in QA skills by working with regions and Health Services to organize and conduct local QA training courses
- Promote and support the development of QA committees at the Health Service and facility levels to plan and direct local QA activities
- Identify and train quality monitors throughout the country to provide technical support for QA training and quality improvement (QI) activities at the regional and Health Service levels

Lastly, a major consideration was that the QA Program had to be financially and technically self-sustaining.

III. Overview of the Chilean QA Administrative Structures

To achieve institutionalization of QA functions, organizational structures, such as the ones described in this section, are needed to plan and direct QA activities.

A. The Quality and Regulation Unit

In 1991, the MOH appointed staff, headed by Dr. Gnecco, at the Primary Healthcare Department to direct the QA Program. In 1995, this became the QA Unit, and in 1997, it became the Quality and Regulation Unit within the Division of People's Health (DISAP). The new name reflected its new mandate to reinforce the regulatory role of the MOH with a quality focus. In 1997–98 the Quality and Regulation Unit led staff throughout the MOH in defining quality standards, establishing criteria for their achievement, and developing indicators to measure the achievement of standards in 16 priority health areas. The Quality and Regulation Unit then coordinated the development of standards, criteria, and indicators that could be applied throughout the regions, Health Services, and facilities in addressing healthcare needs. The resulting document, *Criteria, Quality Standards and Indicators for National Health Priorities*, represented the first time that quality standards were defined at the national level in Chile.

B. Health Services

The Health Services are now the strongest institutional base for QA programming. In addition to assuming overall responsibility for providing healthcare to local populations, the Health Services administer secondary and tertiary care facilities while local municipalities administer primary care facilities. Health Services and municipalities make decisions regarding financing, program administration, and human resources, effectively determining the level of support for QA planning, financing, and activities.

C. Quality Committees

Quality committees are one of the most important components of the QA Program. They are designated by the Health Services, although participation is voluntary. The committees function at all levels of the healthcare system. Membership may include top level political appointees; Health Service officials; and representatives from local universities, related governmental services (schools or day-care programs), and NGOs. Quality committees set priorities, assign tasks, coordinate training and technical support, and coordinate information sharing and dissemination. By October 1998, 98 quality committees had been formed at the regional, Health Service, and facility levels (i.e., hospitals and primary care clinics).

IV. Adapting QA Approaches to the Chilean Health System

At the outset of the QA Program, a variety of state-of-the-art methods were explored for improving delivery of healthcare services. These methods draw on QAP's six-step approach to problem solving and process improvement to improve healthcare delivery processes.

By the end of the program's first year, a standardized quality assurance methodology emerged from the process of conducting QA training. A straightforward QI process resulted that is flexibly applied by teams throughout Chile. The program offers a very structured way of approaching quality problems, using guidelines, worksheets, and prescribed formats for each step of the process.

A. Stages of QA Implementation

From July 1991, when the first QA activity took place, through 1998, the QA Program developed in four stages, each with its own objectives and achievements. The USAID-funded QAP provided technical assistance to the program during the first and second stages. During the first year, technical assistance efforts emphasized QA training, organizing quality committees, and planning. During that period, the central QA team within the MOH, with support from international experts, initiated activities throughout Chile and quickly developed a

national profile for the program. As implementation progressed, the role of QAP advisors diminished. With time, QA became self-sustaining, relying only on local resources. This section provides the details of this implementation plan.

Stage I—Team Building, Skills Development, and Project Development (March 1991–September 1993)

The QA Program became public in July 1991 with a national QA awareness and basic skills training conference. Convened by the MOH with the support and participation of international consultants, the conference hosted representatives from the Health Services, universities, and professional associations. It presented the objectives and decentralized implementation strategy of the QA Program and motivated leaders from the Health Services to begin QA activities by forming quality committees, hosting training seminars, starting QI projects, and developing QA plans.

As program team leader, Dr. Gnecco asked conference participants to list the most pressing quality problems at the primary healthcare level. The next step was to form a central team comprised of MOH staff and their international counterparts.

The central team began to develop six basic training modules and, for the first two years, focused on developing QA skills and capacity in the Health Services. Training in basic QA concepts was provided to 674 health professionals, covering more than half of the country's Health Services, in the first year.

By September 1993, 2,800 health professionals had received basic QA training.

In the second year, the team continued to build capacity by stimulating the development of small, targeted projects aimed at achieving quality gains through QI problem-solving methods. Small committees, with the support of monitors, began 44 QI projects by 1993 and many more ad hoc quality improvements occurred without formal projects.

Stage II—Decentralization and Institutionalization of QA in the Health Services (September 1993–March 1995)

September 1993 brought an end to outside funding for the QA Program and the challenge of sustainability. The central team sought to transfer this responsibility and authority to the quality monitors and committees in the Health Services. The ultimate goal was to have the Health Services meet their own needs for QA planning, training, and monitoring.

During this stage, the central team finished the QA training modules and organized another national conference on QA to present and discuss experiences under the QA Program. By the end of this stage, more than 5,000 health professionals had received QA training, and some 250 quality monitors had been trained. More than 200 QI projects were underway or completed. Of Chile's 29 Health Services, 26 had QA Programs, and four had quality units. Some 90 quality committees

had been formed at health center, hospital Health Service, and regional levels.

Stage III—Institutionalization of a Quality Unit in the Ministry of Health (March 1995–March 1997)

Direct QAP assistance ended in December 1994, and the QA Program transitioned to a third stage: continued decentralization and the permanent incorporation of QA functions within the MOH through creation of a Quality and Norms Unit in DISAP. It was directed to:

- Continue to develop and decentralize QA activities, coordinating and maintaining permanent communication with the regions, Health Services, and facilities
- Support QA activities in the Health Services in an advisory role, emphasizing the development of quality policies and plans
- Respond to requests for training that would be financed by the Health Services
- Develop and sustain national information-sharing and dissemination channels

During this period, the Quality and Norms Unit reviewed all existing MOH standards and regulatory documents to identify areas where standards and regulations were outdated or non-existent. The Unit also began organizing groups of experts (from both within and outside the MOH) to work on standards, protocols, and manuals in areas where they were lacking.

Stage IV—Quality and Regulation (March 1997–Present)

In March 1997, in the context of the health sector's reform process, the Quality and Norms Unit was re-named the Quality and Regulation Unit,¹ still within DISAP. The newly named QA Unit gained responsibility to help develop the regulatory role of the MOH with a quality focus. It has since collaborated with the MOH in two major areas:

Sixteen national healthcare priorities: Identified by MOH, they are:

(a) cancer, (b) cardiovascular diseases, (c) respiratory infections, (d) mental health, (e) accidents, (f) immuno-preventable diseases, (g) tobacco, alcohol, and drug use, (h) occupational health, (i) tuberculosis, (j) dental health, (k) HIV/AIDS and other sexually transmitted diseases, (l) diabetes mellitus, (m) congenital and perinatal infections, (n) sexual and reproductive health, (o) malnutrition, and (p) ocular health.

National Healthcare Priorities and Administrative Agreements: Working with directors of major health programs and units in the MOH, the QA Unit helped prepare Administrative Agreements, a comprehensive list of quality standards, criteria for their achievement, and indicators for their measurement for the health priorities.

Administrative Agreements were established at the MOH to enable the national delivery of healthcare services. They represent the first time that quality standards were

defined at the national level and were designed to enable the regions, Health Services, and facilities to assess and monitor their progress in achieving standards for the health priorities. They specify levels of responsibility for adequate and timely provision of necessary healthcare services and the requisite resources and technical and administrative support. They lay out regional and local plans for service activities, with corresponding goals and indicators. Chile's structuring of Administrative Agreements regarding national health priorities provided the legislative foundation for all national health programs in Chile, including the QA Program.

Among the many Administrative Agreements are these two examples, chosen for their focus on quality assurance. They were defined by DISAP in consultation with the Health Services; these were for 1998:

- To improve the quality of care within the framework of the national and local healthcare priorities (Agreement No. 20)
- To develop regulatory instruments as a function of national healthcare priorities and the design of healthcare information systems for the monitoring and evaluation of the activities defined in the national healthcare priorities framework

The QA Unit was also given responsibility to review and redefine, as necessary, the regulatory role of the MOH, which is ongoing.

B. Sustainability of the Chilean QA Program

A crucial time in the life of the QA Program came in December 1994. When QA management and activities decentralized, the regions and Health Services decided to support both current and proposed QA projects. This financial commitment ensured the sustainability of QA even though external funding ceased.

In 1999, the Health Services allocated approximately \$85,000 to continue previously launched QA initiatives and design new ones. Continued local financing of QA efforts—including personal contributions by monitors to provide logistical support to QA committees—by the Health Services demonstrates the sustainability of QA as a major programmatic focus of the health system and its institutionalization at the local level.

Eight additional QA initiatives have been undertaken within the MOH and the private sector since the QA Program began in 1991. These include the MOH's Norms and Regulations Department, which is an accreditation division, and Servicio de Atención al Usuario (SATUS), a central office focusing on user satisfaction.

¹ Hereafter, this unit is referred to as the "QA Unit."

V. Evaluation of the QA Program Structure and Management

The science and methodology of QA emphasizes teamwork, respecting the opinions of colleagues and patients, and specific problem-solving techniques. Numerous authors in the QA field have referred to the phenomenon of team ownership of QA methods and tools as the “democratization of science.” This phenomenon is particularly apparent in Chile. Dr. Gnecco and her colleagues embraced the QA training model developed by Lori DiPrete Brown and Professor Pedro Saturno, who provided QAP technical assistance. Dr. Gnecco and her colleagues from QAP disseminated QA methodology throughout Chile’s health sector. About 12,000 healthcare professionals, including 800 monitors, have been trained, representing approximately 25 percent of the health workforce.

QA in Chile is closely linked to public health. QA activities tend to be more prevalent in primary healthcare centers than in hospitals and are primarily oriented towards patient satisfaction and primary care.

A. QA Structure and Management in the Health Services

QA leadership of the Health Services follows the administrative pattern of the MOH in that regional directors are also in positions of responsibility for the QA Program in their geographic area. Additional oversight is provided by representatives of the President (the Secretarias

Regionales Ministeriales de Salud or SEREMIS). There are 13 SEREMIS, one per region.

Relationships between some Health Services and municipalities are generally collaborative and constructive. Although full- or part-time quality coordinators, incentive systems, and budgets have been designated for QA by some Health Services and municipalities, others have no QA personnel or devote little if any of their annual expenditure to QA. The evaluation team found that committed QA leadership was an important factor in the success of QA activities at the regional level in the majority of the sites visited.

One case shows the difference committed leadership can make. One Health Service received training in 1991–93 but generated little QA activity. New leadership in 1996 encouraged professionals who had received training to participate in QA; the professionals then trained other staff and initiated QA projects.

Administrative Agreements commit facilities to a specific level of performance for the coming year, usually a minimum number of patient services. Alternatively, the agreements align with the national priorities to reduce waiting time and improve patient satisfaction. Facility funding is based on goals stipulated in agreements; this spawned many QI projects targeting those goals.

B. QA Structure and Management at Hospitals and Primary Healthcare Centers

Administrative structures and healthcare facilities vary in terms of

their commitment to QA from one Health Service or municipality to another. A formal coordinator may be designated on a part- to full-time basis, or not at all. In some facilities, staff are allotted time for QA and may receive small incentives to do them. Regional and facility support for QA has a visible effect on the level of QA activities, but its absence was not the only determinant of the presence or level of QA activities in that region or facility.

Some facilities have developed significant QA initiatives in spite of inadequate support. For example, one hospital made strides in QA programming and achieved several QIs over the years. Regarded as a leader in quality, the hospital has slowed its efforts somewhat because of a change in its leadership.

Significant variation also exists between facilities in a Health Service or municipality in terms of resource allocation for and level of QA activities, as well as in the sophistication of methodology. Many QI projects focus on improving basic infrastructure, such as making toilets accessible for people with disabilities. In a few other instances, however, teams have focused on more complex issues of clinical care.

C. Informal Aspects of QA Management: The “Magic” of QA in Chile

The evaluation team became increasingly aware of the uniqueness of the Chilean QA effort, particularly through the dedication of professionals throughout the country who are ready to engage in QA regardless of the level of

support they receive. What unites the Chilean QA effort extends far beyond formal administrative channels in the MOH to less formal but strong bonds formed at the local level. The team referred to this as the “magic of QA in Chile” and believes it was crucial to the program’s success.

VI. QA Program Technical Functions

This section reviews the Program’s improvement, design, and monitoring of quality as well as supervision and standard setting. Indicators of evidence-based medicine are also discussed.

A. Quality Improvement

More than 625 QI projects have occurred in Chile since the QA Program began, and the vast majority were performed according to established QI cycles. This is a process that entails: (a) identifying problems related to quality of care, (b) studying the causes of the problem, (c) identifying a solution or QI, and (d) implementing and evaluating the QI. Training in using the QI cycle consisted of a basic four-day workshop with exercises to familiarize participants with the principles, conceptual frameworks, and strategies of QI, as well as the components of the traditional cycle and work team principles. Teams work on different types of opportunities for quality improvements: structural, organizational, clinical/technical, and others. Some examples of opportunities addressed in Chile are:

Structural problems:

Inadequate signage, need for better patient waiting areas, lack of proper hygiene and cleanliness standards, and need for child care facilities for patients and families

Organizational Problems:

Underuse of operating room, inadequate information network from the board of directors and the Intensive Care Unit, inadequate dissemination of technical nursing standards in intensive care, and inadequate information on emergency admissions for patients and their families

Technical/Clinical and Other:

Inefficient ambulatory surgery ward management, need for an audiology service, inconsistent care for patients with hypertension and diabetes, unclear admission process policies and procedures, delay exceeding 24 hours to receive blood exam results, high average patient length of stay in intensive care, high number of surgery cancellations, lack of personnel motivation, and long waiting time in the emergency ward.

At the end of training, the trainees are usually asked to commit themselves to the completion of cycles, although no systematic approach to project completion was in place at the time of the evaluation. Monitors follow up on the cycles, providing encouragement, advice, and similar kinds of support to the teams.

Basic QI tools include:

- Nominal group technique, which allows a team to reach consensus quickly on the relative importance of issues

- Prioritization matrices, which narrow options through a system of comparing choices
- Brainstorming, a common method for generating a high number of ideas on a given topic
- Cause-and-effect and fishbone diagrams and flow charts, which provide graphic views of data
- Force field analysis and pareto charts (infrequently used in Chile)
- Storyboards, which tell the story of a QI project from the start to post-completion analysis

QI efforts have resulted in many infrastructure improvements (e.g., to waiting rooms, bathrooms, and hospital bedrooms) that undoubtedly would have occurred during modernization. Other improvements relate to client focus, such as allowing parents to spend more time with their children in hospital wards and improved interpersonal skills of physician and nursing staff.

“The QA methodology brings a new way of thinking. It helps us to innovate and to realize what’s going on”

A Quality Coordinator

Baseline assessments of QI projects are rarely performed in Chile prior to the application of solutions, so it is impossible to measure their success. This is a weakness in the program and may explain why leaders and physicians are not more involved in QA efforts.

One rationale offered by QI team leaders for the lack of baseline assessments is that after brainstorming, many teams tend to apply solutions, because they believe that the full cycle is too time consuming. Another explanation is that a team may be able to spontaneously assess the problem without using the prioritization matrices or other steps in problem selection. About 70 percent of the QI teams in Chile are using the full cycle, and the rest are using an abbreviated version. Each team has its own adaptation.

QI results also could be better documented and disseminated.

At the regional level, specific tools are often used to define strategic plans for QI that are integrated into the regional health plan. However, time constraints often limit the involvement of team members, making completion of the cycles and their application to actual problems rare.

QI teams are organized according to the problems selected and are usually staffed by service, ward, or unit personnel and often include nurses, midwives, auxiliary nurses, social workers, nutritionists, and administrative staff. A ubiquitous problem is the under-involvement of physicians. Generally, physicians comprise no more than 10 percent of any team, although Barros Luco Trudeau Hospital in Metropolitan region is one notable exception. Physicians there became increasingly involved and committed to these efforts, thanks to the insightful intervention of the nurse administrator.

QI team attitude, motivation, and behavior are influenced by Chilean cultural and professional ethics. Team meetings display discipline,

and planning is geared for results. Although bureaucratic requirements often interfere with optimal functioning, staff turnover was not a major concern. The program is effectively national and the number of trained personnel is high, so team members transferred to other regions participate in the teams there.

Another concern is the lack of structured benchmarking (i.e., the sharing of information between QI teams) and the QA Unit's failure to develop a system to disseminate success stories. Exceptions are: (a) a selected number of projects, many focusing on clinical or client-related improvements, have been disseminated for review and possible adaptation by teams in other regions, and (b) The QA committee at the Health Services level selects the best projects to be financed each year. The latter has included breast-feeding awareness (in collaboration with UNICEF), presence of the father during delivery, parent participation during pediatric hospitalization, presence of the family during hospitalization of terminal patients, and special nursing in-home service for terminally ill patients.

B. Quality Design (QD)

The evaluation team identified examples of quality design—the design of activities for new or existing processes—that had occurred, although they were not “textbook” examples. QAP has established basic guidelines for quality design efforts, requiring that they: (a) be based on assessment of client needs; (b) link client needs with new features of a process; (c) provide a new or substantial redesign of a system, process, or

product; and (d) include some failure proofing or test for robustness of the new design proposed. QD efforts in Chile included:

- Five health centers in Rancagua redesigned the annual, regional immunization campaign. Now it has a better distribution of tasks, a common operational calendar, and coordination among the health centers
- At the regional Guillermo Grant Benavente Hospital in Concepcion, a set of integrated solutions was implemented to halt a syncytial respiratory virus epidemic
- Hospital Barros Luco Trudeau implemented ambulatory surgeries, where patients are discharged on the day of their surgeries, with interesting outcomes: a 25 percent reduction in the number of patients waiting for surgery, 24 percent of surgeries performed on an out-patient basis, and a 20 percent reduction in the number of surgery beds
- In the Metropolitan Oriente Health Service, an appointment system for specialists' visits was designed to operate by fax between the healthcare facilities and hospitals. This facilitated and accelerated the scheduling system and appointment confirmations. Significant improvements were made in time savings, patient comfort, mechanisms for tracking patients through counterreferrals, and reductions in no-show visits
- In a southern health region, a home care system for adult and elderly patients was designed to use the services of retired auxiliary nurses

- In the San Martín de Quillota region, palliative care was implemented

C. Quality Assessment and Monitoring

The QA Program in Chile engages in a variety of activities in the area of quality assessment and monitoring, from both the patient's and health system's perspectives. Determining levels of patient satisfaction is an important step in the classic sequence of QA implementation and is evaluated through different quality assessment tools. User satisfaction is frequently measured through local surveys, exit interviews, or focus groups that enable local decision makers to define strategies of problem selection. The QA Unit developed a diagnostic module in response to a request from several regions that had difficulties with survey management. As a result, suggestion boxes and books for registering feedback were regularly displayed in healthcare facilities. The frequency of the data collection varies by region. The evaluation team observed that few provider-satisfaction surveys are performed.

With regard to the measurement of provider and facility performance, the QA Unit designed a specific module on quality indicators (input, process, outcome, sentinel, and impact). It explains the monitoring process and provides group exercises for creating and choosing indicators. Indicators are also provided in the Administrative Agreements, and QI teams in most facilities are using them. (At Concepción Hospital, impressive

use of indicators was seen in the Intensive Care Unit.) In addition, indicators are linked with new standards in each regulatory document from the MOH.

D. Standard Setting and Dissemination

Beginning in 1997, the QA Unit collaborated with health program and unit directors within the MOH to select and define healthcare delivery criteria, standards, and indicators. The effort resulted in an official MOH document, *Criteria, Quality Standards and Indicators for National Health Priorities*. It was intended to enable regions, Health Services, and facilities to assess and monitor their achievements in health priorities on a national basis. It contains evaluation criteria, definitions, examples, matrices, and suggestions of indicators to monitor all management commitments linked with the health priorities. It also offers an instrument to help managers build an information system to register, tabulate, analyze, and use information for decision making. It establishes the basis for quality assessment activities and ongoing monitoring of healthcare delivery processes at numerous levels. Since 1997, an annual inventory² of existing regulatory documents has been developed and disseminated to all Health Service-related organizations. It complements the *Criteria* compilation and facilitates the supervision and monitoring process.

Ten volumes of regulatory standards addressing Chile's national health priorities have been compiled, published, and sent to Health

Services directors, program chiefs, hospitals, municipalities, universities, and the private sector. These standards represent a thorough systematization and dissemination effort as well as a significant economic investment. In addition, an MOH budget item includes regulation, which will help ensure that standards are developed and adapted. The work is not finished. Gaps immediately appear when the national health priorities and regulation materials are compared (see Table 1); clinical standards are still lacking in many areas. This makes it difficult to evaluate and monitor progress in those priorities.

The second phase of standard setting began in 1998 under the authority of the QA Unit and followed a specific editing framework. The objectives of this work were to:

- Review and redefine, if necessary, the regulatory role of the MOH
- Diagnose the areas requiring regulation
- Organize committees of experts to address these areas
- Standardize the editing of new standards and other new regulatory documents

The QA Unit established national working groups on healthcare standards. These groups then developed both technical/administrative standards and clinical guidelines. They are elaborating standards, protocols, decrees, and laws in areas that lack up-to-date regulations. The edition of the new standards includes two complementary documents: (a) a checklist for

² Catastro de Documentos de Regulación: Prioridades Salud País (Register of Regulatory Documents: National Health Priorities)

Table 1
Gaps between Health Priorities and Related Standards

National Health Priorities		Clinical Areas with Existing and New Standards	
Accident			
Congenital and perinatal infections			
Cancer		Lymphomas, leukemia,	
Diabetes mellitus			
Cardiovascular diseases		Hypertension	
Immuno-preventive diseases		EPI	
Respiratory diseases			
Malnutrition		Nutrition	
Dental health		Odontology promotion and prevention	
Mental health		Mental health	
Ocular health			
Occupational health		Occupational health	
Reproductive health		MC health, diabetes & pregnancy	
Drugs, alcohol, and tobacco			
Tuberculosis		Tuberculosis	
Human Immunodeficiency Virus		Acquired Immuno-Deficiency Syndrome/Sexually Transmitted Disease	
Other Clinical and Management Areas That Have Standards			
Adolescent health	Cholera	Dialysis and transplantation	Pharmacy
Adult health	Intra-hospital infections	Blood bank	Health education
Epidemiology	PHC	Rural health	Traditional medicine
Clinical laboratories (include national policy)	Health promotion		Environmental health

supervisors to perform efficient monitoring of compliance with the standards, and (b) a monitoring plan that includes a complete set of indicators (input, process, output, sentinel, and impact) with national indicators, regional indicators, and a proposal for local indicators. This instrument applies only for the new standards.

Additional goals of the second phase of standards development and dissemination are to:

- Disseminate clinical standards to the appropriate level of care and to the appropriate teams
- Refine instruments for the supervision of standards at the national level
- Establish a library of regulatory documents
- Systematize existing regulatory documents related to the national health priorities to allow internal and external evaluation within the system

The communication of standards appears to face continuing difficulties. Formal structures to create job aids, training sessions, supervisory policies, etc. have not been established to ensure the use of standards by practitioners. MOH organized a meeting in August 1999 to begin addressing this gap.

E. Evidence-Based Medicine

The evaluation team is pleased to report on two indications of the use of evidence-based medicine, although how these initiatives will be coordinated and replicated is unknown.

The DISAP director, a neurologist skilled in evidence-based medicine, launched an initiative in 1998 to set standards in neurosurgery according to evidence-based medicine and a peer review process.

At Barros Luco Trudeau Hospital, physicians are developing local standards based on principles of evidence-based medicine. They use materials from the Cochrane Library for their research.

VII. QA Program Support Functions

This section presents the results of the evaluation team's review of QA Program support functions in Chile: QA training and the training modules, monitoring and supervising QA, and dissemination and communication.

A. QA Training

Training is the fundamental strategy behind the Chilean QA Program. QAP led the first training in June 1991 with a Quality Assessment and Improvement workshop, and 40 percent of the trainees were still engaged in QA during the evaluation. Generally, training was widespread and designed to work with the overall MOH strategy of decentralization.

Approximately 20 percent of the more than 60,000 healthcare delivery personnel at the central and regional levels of the MOH have received some level of QA training. Table 2 shows the growth of QA training, demand for which continued to increase at least until the evaluation and probably beyond.

To date, nearly 12,000 people have been trained. This is not a static result, but rather a success that is expanding through local training efforts and raising awareness of QA concepts among social and professional communities.

Chile created its own QA training modules (see Table 3) as part of the central QA Unit's commitment to ensure that materials are consistent with the country's needs. The modules were developed with the participation of a range of healthcare professionals, which contributed to capacity building and ownership.

The increasing responsibility assumed for training at the regional and local levels has affirmed the QA Program's sustainability—a considerable accomplishment. As of this writing, 37.8 percent of all reported training was conducted at the regional or local level. The actual percentage is probably higher

Table 2
Growth of the QA Training Program

	Total by the End of 1995	Total by the End of 1998	Total by the End of 1999
Trained health professionals	5,254	10,600	10,775
Trained quality monitors	256	615	784
Health Services with quality plans	42%	75%	80%
Quality projects completed	200	625	NA

Table 3
List of Training Modules Completed (1994–99)

Module Numbers	Titles
Modules 1, 2, 3	Basic QA Concepts
Modules 4, 6	Develop a Culture of Quality Developing a Quality Plan
Module 5	Teamwork of Leadership
Modules 6, 8, 9, 11	Vision, Mission, Policies for Quality Plans Evaluating Quality of Services Statistical Methods for QA Indicators Development
Module 10	Rights of Duties of Clients
Modules 13, 14, 15, 16	External Client Satisfaction Assessing Quality Projects Supervision History of Quality
Modules 7, 12	Training Monitors Medical Audit

because local teams do not always report all the training they conduct.

Furthermore, these efforts are supported by review at the central level and by the supervision of training materials. Most of the regions have a quality plan, which in some cases is incorporated in annual strategic planning, so a particular unit and its schedule of

training activities can be documented.

The transfer of responsibility to the local levels has stimulated creativity in training strategies, and some regions have achieved a high level of development in the training process. While decentralization progresses, the challenge to ensure the quality of the courses increases,

so certifying that training is of high quality becomes necessary.

From the outset, public and private universities were included in efforts to institutionalize QA training in undergraduate and postgraduate schools and in clinical services. A few among many examples of university participation are provided here: Approximately 70 percent of Chilean universities teach quality-related subjects at various levels. The University of Valparaiso, a state university, offers a course on QA in the curriculum of an Obstetrical-Nursing School course on administration. In 1995, fifth-year students there began internships in QA projects through their practice in primary care hospitals and clinics. These students are also required to prepare a thesis on quality-related subjects with the objective of raising user satisfaction. Such projects provide research for university department chairs and have been incorporated into healthcare service design.

At the University of Chile, important contributions to the field of QA programming in healthcare have emerged in phonoaudiology; nursing; kinesiology; and medical technology and for postgraduate teachers of epidemiology, environmental health, maternal-infant health, and pediatrics. In addition, monitors have been trained through the Clinical Services Department at the José Joaquín Aguirre (teaching) Hospital.

The QA Unit has trained 76 teachers at the University of Concepcion, the University of Valdivia, Temuco, and the Nursing-Obstetrics School of the Pontifical Catholic University. The last has instituted a Continuous

Quality Improvement Division at the undergraduate and postgraduate levels in the School of Medicine and Nursing. From 1996 to 1999 that university had a quality plan in the clinical hospital at the School of Medicine. Meanwhile, training programs continue to be developed in basic, clinical, and preclinical sciences through university medical schools.

The QA Unit developed a five-day basic training seminar in April 1999 with the support of regional monitors and 10 Health Services. The pilot plan was to train 70 physicians and dentists who would then depart for "social service" all over the country. These trainees would be placed in management positions in hospitals and/or primary care clinics throughout Chile. This effort involved the deans of public and private schools of medicine and dentistry.

QA seminars have been conducted at professional training schools for dentists, midwives, nurses, nutritionists, psychologists, physicians, kinesiologists, social workers, and paramedical technicians. In addition, scientific associations representing specialty areas such as neurosurgery, gynecology, and endocrinology are consulted regarding regulation.

B. Monitoring and Supervising QA

Supervision within the Chilean MOH is not formally integrated with QA features and approaches, although the QA Program offered training in supervision in 1998 and created a specific training module. In fact, the supervision system is in crisis, lacking such tools as checklists for

supervisors to use during visits to healthcare facilities. Supervision also seems to be poorly integrated within regional training departments, so technical training reinforcements are not available when the need arises. The QA Unit has initiated some improvements. For example, in the Osorno region, supervision is integrated as a function of quality management through workshops where supervisors and program coordinators design tools. Information about this activity should be disseminated to other regions.

After the initial awareness and training workshop, potential monitors receive training in QA theory and practice en route to becoming "premonitors." Premonitors are trained to facilitate tasks of the multidisciplinary work team and become monitors once they form a QA team at their workplace. Monitors can then become pre-instructors and instructors, who train and provide follow-up and support to new QA trainees.

The monitors are committed, cooperative, creative, and innovative. Of the 784 monitors trained by the QA Unit and the 180 monitors trained by the Metropolitan Sur Health Services between 1992 and 1999, 75 percent are still active, reflecting their dedication and the support provided by the system's administration.

All the groups studied during this evaluation showed extremely high levels of motivation for QA projects. However, the evaluation also found that QA teams believe they are accorded insufficient recognition for their efforts, and they acknowledged that lack of incentive diminished their QA-related work. Facility

managers with active QA teams should recognize and reward work team performance as an important asset to management; they could take better advantage of this highly committed human resource.

Monitors and quality committees find opportunities to meet in their work units, as well as resources with which to implement QA projects. In so doing, they by-pass organizational hierarchies to provide training for directors of services, hospitals, and primary care clinics. Monitors are models of solid foundations in building a system of quality management.

C. Dissemination and Communication

Despite obstacles to direct communication, information flows constantly through both countrywide networks and within each Health Service. The QA Unit has supported this process through formal and informal communication, creating some opportunities for benchmarking.

The QA Program has been thoroughly disseminated throughout Chile. The QA Unit and MOH communicate continually with all sectors of the healthcare system. The program reaches all levels of the healthcare sector, providing immediate feedback on system performance through formal and informal communications. Success can be attributed to the timely exchange of information, to the response to recommendations about quality projects, and to receptive and committed QA leadership.

Both central and regional efforts to disseminate information on the

program have been established through participatory forums such as the Month of Quality and the National Conference on Health Services Quality. International dissemination has been emphasized since 1992 with participation in 10 international presentations or conferences.

D. Incentive Programs

Chile has implemented the following reward or incentive initiatives to promote quality assurance:

- The National Prize for Quality in Public Services
- The Day of Excellence in Health
- The Zepeda Award, an incentive for monitors who participate in training
- Local recognition of individuals and work teams

These initiatives are not formally integrated elements of incentive systems, but rather are acknowledgements of voluntary efforts and do not typically involve financial compensation. The dedication of personnel who contribute their time and often financial support has largely made the QA Program successful.

VIII. Recommendations

In its evaluations, QAP seeks information that could be useful in planning and making decisions for the QA program. While this section lists several areas for improvement, the team wants to emphasize that the staff of the QA Unit has been impressively committed to improving the quality of healthcare.

A. Program Structure and Leadership

The team recommends these further improvements in organizational structure and leadership:

- Promote strategic planning within the QA Program by focusing on linking QA Program goals and MOH policy directives
- Strengthen central leadership of the QA Program through support to the QA Unit: Provide staffing support and information resources and create a National Quality Council to link numerous quality initiatives in QA
- Emphasize QA methodologies and tools as general approaches for improving management, especially by integrating QA and management training for MOH personnel
- Strengthen physician involvement in the QA Program with incentives and efforts designed to increase competencies and physician interest in QA activities
- Examine opportunities to increase initiatives in the area of evidence-based medicine

B. Technical Functions

The QA Program is engaged in a range of technical activities, although to date it has focused on QI at only the facility level. Although the technical level of the QA Program is high overall, the team recommends the following activities for technical growth:

- Continue efforts to link MOH priority health policies and objectives with regional and local QI activities
- Encourage the development of larger quality efforts using QD methodology
- Consider streamlining QI efforts for certain straightforward quality problems when applicable
- Strengthen capacity to monitor quality at the facility and team level so that baseline assessments are conducted regularly during QA activities
- Demonstrate and document the cost-effectiveness of QA activities
- More regularly integrate client input and client satisfaction data into QI efforts

C. Support Functions

Support functions are key in developing and sustaining any national QA Program. In particular, the evaluation team felt that support in two areas, training and dissemination, deserves particular attention in the Chilean program:

- Involve new directors in promoting and approving the training plan and in maintaining their continuity
- Continue training in basic QA skills at the facility level. Link training to the development of a QA project, perhaps through informal commitments between the QA trainers and the trainees. Involve Chilean health professionals already trained in QA in training efforts
- Maximize the impact of promotional mechanisms and implement a systematic benchmarking system (which is already embryonic)
- More physicians and senior healthcare leaders should participate in the annual QA conference. Allocate funds to increase physician and leader participation and to disseminate conference materials. Complement the current schedule of national QA meetings with regular regional meetings on QA topics in order to assess program development and adapt QA Program objectives and strategies
- Use the Internet (for example, the MOH website) and printed materials to disseminate QA-related information

D. Program Management

Project continuity and accomplishment of objectives in the areas of quality and regulation have only been possible through increased and unpaid overtime by the program director and through the dedicated collaboration of QA monitors and committees. Ongoing constraints imposed by Chile's current economic conditions may preclude resolution of this problem. The following should be weighed during planning:

- Allocate dedicated resources at the central and regional levels for QA activities
- The MOH should examine the human resources needs of the QA Program. This is particularly important for creating an authority (an individual or committee) at the MOH level that could integrate and coordinate the quality activities. The integration of quality tasks with teams from divisions other than DISAP is difficult because of bureaucratic tracks in the MOH organization
- Address the lack of time allocated for QA monitors to work on the QA projects or to receive training; specific time must be allocated to quality activities, particularly training

