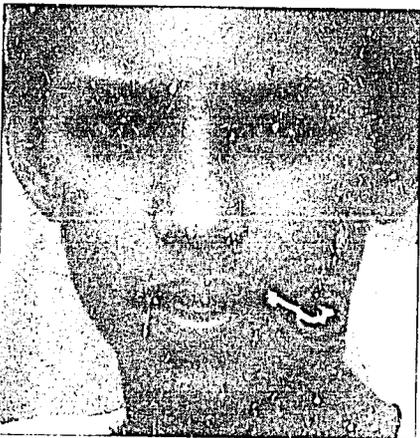


PW-ARY-094

Quality Assurance Project  
*Annual Report*



*Center for Human Services*

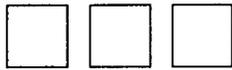
*(A Non-profit Affiliate of the University Research Corporation)*

*In collaboration with The Johns Hopkins University School of Hygiene  
and Public Health and The Academy for Educational Development*

*Fiscal Year '95 (October 1, 1993 - September 30, 1995)*

This project is sponsored by the United States Agency for  
International Development under Cooperative  
Agreement Number DPE 5992A 01 0050 00





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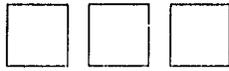
Note: FY96 Workplans and related fiscal information are presented as a special insert in the copies of this report that are being submitted to USMD.

*The Quality Assurance Project is the familiar name for the Applied Research in Child Survival Services (ARCSS). It is funded by USAID and managed by the Center for Human Services ■ 7200 Wisconsin Avenue ■ Bethesda, MD 20814 ■ USA ■ Telephone: 301-654-8338 ■ Fax: 301-941-8427 ■ Email: [arc@mcimail.com](mailto:arc@mcimail.com) ■ In collaboration with the Johns Hopkins University School of Hygiene and Public Health and the Academy for Educational Development*



*Quality  
Assurance Project*



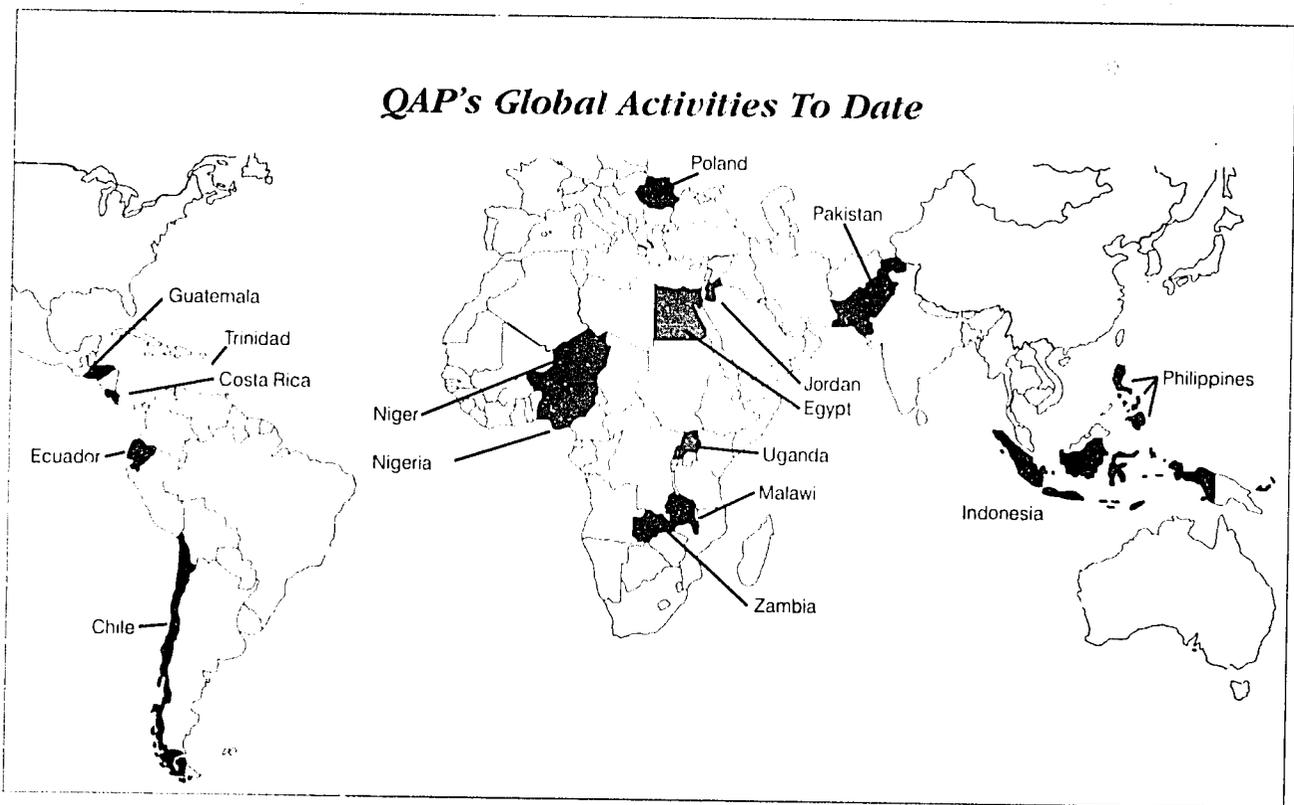


*The purpose of the Quality Assurance Project (QAP) is to improve the quality and efficiency of health care by helping lesser developed countries to institutionalize quality assurance (QA). Although improvements in service quality could have a substantial impact on the overall success of child survival programs, managers and policy makers have focused largely on measuring service outputs and health outcomes, giving little attention to assessment of the service delivery process. The QA Project is addressing this issue by building on the experience of the Primary Health Care Operations Research Project (PRICOR II), by developing and refining approaches to service quality assessment and problem solving, and by working with host-country colleagues to design and institutionalize QA programs.*

**Q**AP continues to encompass four parallel strategic thrusts:

- Refining existing QA methodologies, while developing new ones that more appropriately meet the needs of developing country health care systems, with continued emphasis on the problem-solving and process-improving methodology and the importance of standards and monitoring;
- Providing technical assistance and training on a long-term basis in four countries (Egypt, Jordan, Niger, Nigeria) that desire to institutionalize quality assurance methodologies, as well as providing support for Chile, where QA methodologies have been institutionalized. Short-term and medium-term technical assistance has been provided to an additional 19 countries with several indicating their desire to initiate country-wide, long-term programs;
- Developing and disseminating a substantial base of information about QA obtained from our activities in over 23 countries; and
- Designing and providing training programs to transfer knowledge and skills, and to increase awareness for the QA approach.

The acceptance of the use of QA methodologies to improve a variety of maternal child health interventions has been astounding. The expansion of these QA activities to all aspects of health care delivery is well under way in many countries and under consideration in others. The involvement of more than 30 developing countries in the International Society for Quality in Health Care (ISQua) is but one example of the focus on quality worldwide. In the past year, both the World Health Organization and the World Bank have publicly expressed acknowledgement of, and support for, quality assurance activities.



## Status

The Quality Assurance Project (QAP) completed its original 5-year project in September 1995. A funded extension until March 31, 1996, has been granted as a bridging activity with the expressed intent of USAID to award, by competition, another 5-year QA project. Acknowledgement of the importance of quality improvement and quality management activities in all aspects of health care delivery is virtually universal. Highlights of the last year include the following:

- QAP co-sponsored the First National Conference on Quality Assurance in Healthcare in Santiago, Chile. Representatives from all Provinces attended and presented their 5-year plans for the implementation of QA throughout the Chilean health care system. Examples of problems solved and processes improved using the team problem-solving methodology of QA were shared. The Minister of Health has established a permanent office for QA and has provided

appropriate funding. More than 5,000 members of Chile's healthcare sector have been trained in the methods of QA.

- For the 4th consecutive year, QAP co-sponsored a pre-conference for representatives of a number of developing countries at the 11th annual meeting of the International Society for Quality in Healthcare in St. Johns, Newfoundland, Canada. Several awards were won by developing countries presenting papers at the conference, including a first place award for a presentation by the QAP project in Cairo, Egypt.
- In July, USAID provided field support funds for QA activities in an additional three countries not previously supported by QAP. These included Zambia, Ghana, and USAID's Regional Economic Development Services Office for East and Southern Africa (REDSO-East), where a conference on QA is being planned for multiple African countries in 1996.

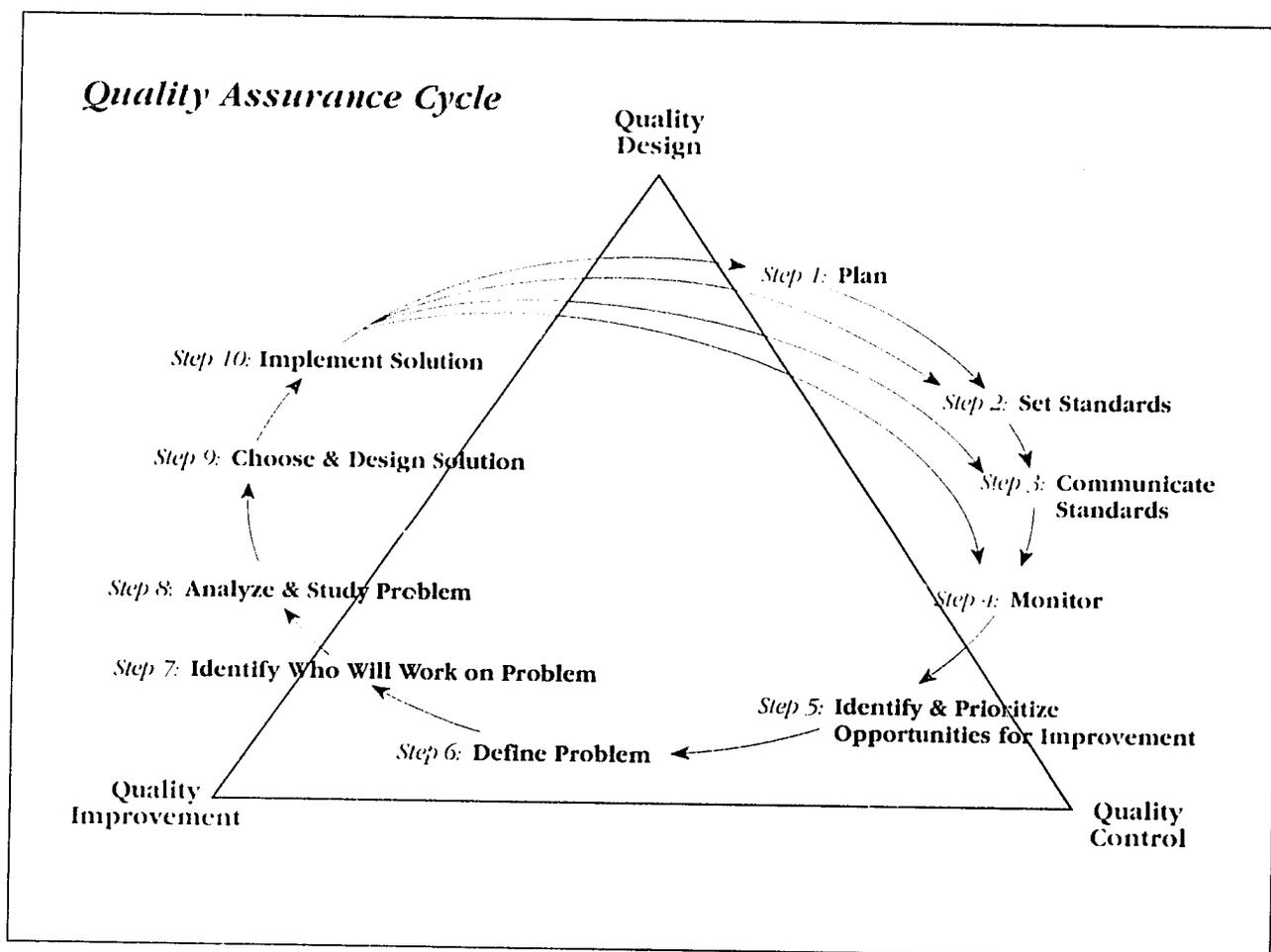
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*In the past year, both the World Health Organization and the World Bank have publicly expressed acknowledgement of, and support for, quality assurance activities.*



■ Quito, Ecuador, was the site of the First Latin American Conference on Quality in Health Care in August,

co-sponsored by the USAID-funded Latin America and Caribbean Health and Nutrition Sustainability contract. More than 60 participants representing 11 Latin American countries, a variety of PVOs, NGOs and cooperating agencies, representatives of USAID Missions,



and members of the Ecuadorean Ministry of Health were in attendance. Several countries expressed intent to develop country-wide QA programs at all levels of the health care system, with special focus on primary care.

- QAP, in concert with the Cost Recovery for Health Project, sponsored the First National Conference on Quality in Health Care in Cairo, Egypt, in late September. As the keynote speaker, the Minister of Health was instrumental in declaring QA a major component for the improvement of quality in health care throughout the country. While an estimated 300-350 participants were expected to attend, the conference started with more than 700 attendees, and 500 remained for the ensuing activities. Based on widespread interest, the Egyptian

Society for Quality in Health Care (ESQua) has now been founded.

- In September, the QAP staff was invited to present a 3-day seminar on the principles and practices of quality assurance and quality management to participants from USAID in Washington, DC. Eighteen AID staff members attended, representing a wide range of activities and interests with roughly equal representation between maternal child health and population programs.

In many countries, QA has concentrated on team-based problem-solving methodology. These teams have been instrumental in improving processes. A selection of results of improvements is presented in Appendix A of this report. In addition, a

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***September 20, 1990 to  
September 30, 1995***

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Total USAID Approved Project Ceiling:	\$22,000,000
Total Central (USAID) Programmed Amount:	\$13,389,784
Total Additional Funding Provided by USAID Missions:	\$5,988,248

Methodology Refinement study is being conducted by QAP staff to assess and analyze various components of team problem solving and the conditions necessary for teams to work well. Information gained from the study will prove useful in the design and implementation of future QA activities in both current and future country programs. The results of these teams include, but are not limited to, the following:

- Complete redesign of health care program availability and delivery in a district medical clinic in the Tahoua region of Niger allowing patients to attend to more than one clinical need during the same visit.
- Reduction of referral time for high-risk neonates from 60 days to 15 days in regional primary health care directorates in Chile.
- Reduction of the C-section infection rate from 25% to 11% — a better than 50% reduction in a Guatemalan hospital.
- Development of the first obstetrical/gynecology (Ob/Gyn) clinical guidelines at a public hospital in Egypt with associated standardized obstetrical clinical record to document compliance with standards.

- Increase in the use of sterile syringes for the immunization of children from 22% to 82% in primary health clinics in Costa Rica by improved supervision techniques.
- Distribution of clear antibiotic use guidelines (standards) resulting in reduction of misuse of expensive antibiotics from 55% to 25% in a region of Indonesia.
- Decrease in the wastage rate of immunizations in Jordan by reducing vaccines ordered by 25%, reducing wastage by 16%, and simultaneously increasing number of vaccines given by 5%.

## Future

Quality assurance continues to be an exciting concept and approach for countries and ministries of health confronting multiple complaints of poor quality, inadequate resources, and lack of management capacity. The QA Project will continue to respond to the increasing demand for assistance in developing QA programs throughout our extension. Completion of institutionalization activities in current QA countries will be undertaken, as appropriate. Bridging activities for QAP II and development of future potential QA countries will be explored. The need for the integration of QA methodologies into all health care projects will be addressed. Efforts at increased collaboration with other cooperating agencies and projects are already under way and are being supported by planning personnel at USAID. Additional QA technical assistance in Poland, South Africa, Ghana, and Zambia is being evaluated and/or under way. A major activity for the extension period is the collection, evaluation, production, and dissemination of the information, outcomes, lessons learned, and recommendations that have resulted from these 5 years of work in medical quality assurance.



Photo by Dennis Zierger

# *Methodology Refinement*



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## *Perspectives on Working in Teams*



*Methodology Refinement is the QAP's research component, through which QAP staff are continuously developing, refining, and validating cost effective measures for improving the quality of health care. The project team is working toward this goal by reviewing the current state of the art in quality assurance and collaborating with host-country colleagues in conducting seminal studies on how best to achieve optimal quality of care. Priority research areas include cost effective data collection methods, establishing and instituting standards for provider performance and support systems, methods of identifying and prioritizing operational problems, and simple problem solving methods.*

Working in teams is central to all the activities of QAP. Given the importance of teams within the QAP quality improvement methodology and the variety of circumstances under which teams have been formed and are currently working, it is important to assess the effectiveness of the team-based quality improvement strategy in the programs assisted by the project.

Thus, the objectives of the team methodology refinement study are:

- To document the experience of teamwork and the functioning of teams in QAP-assisted programs, from the perspectives of team members, their supervisors or coaches, and the QA coordinator or QAP resident advisor;
- To examine the value of teamwork by assessing each respondent's satisfaction with the team process and outcome; and
- To explore relationships between the perceived value of teamwork as measured above and other variables characterizing organizational structure and team functioning.

Information on three groups of variables has been obtained from each respondent: organizational structural characteristics, team process dynamics, and perceived outcomes in terms of observable, measurable improvements, satisfaction with team dynamics and accomplishments, and changes in work environment.

Early this year, QAP investigators finalized data collection instruments consisting of individual team member questionnaires, 'coach' or supervisor questionnaires, and a resident advisor form. After pretesting the form in Ecuador, with the assistance of Dr. Jorge Hermida and staff from the Cholera QA

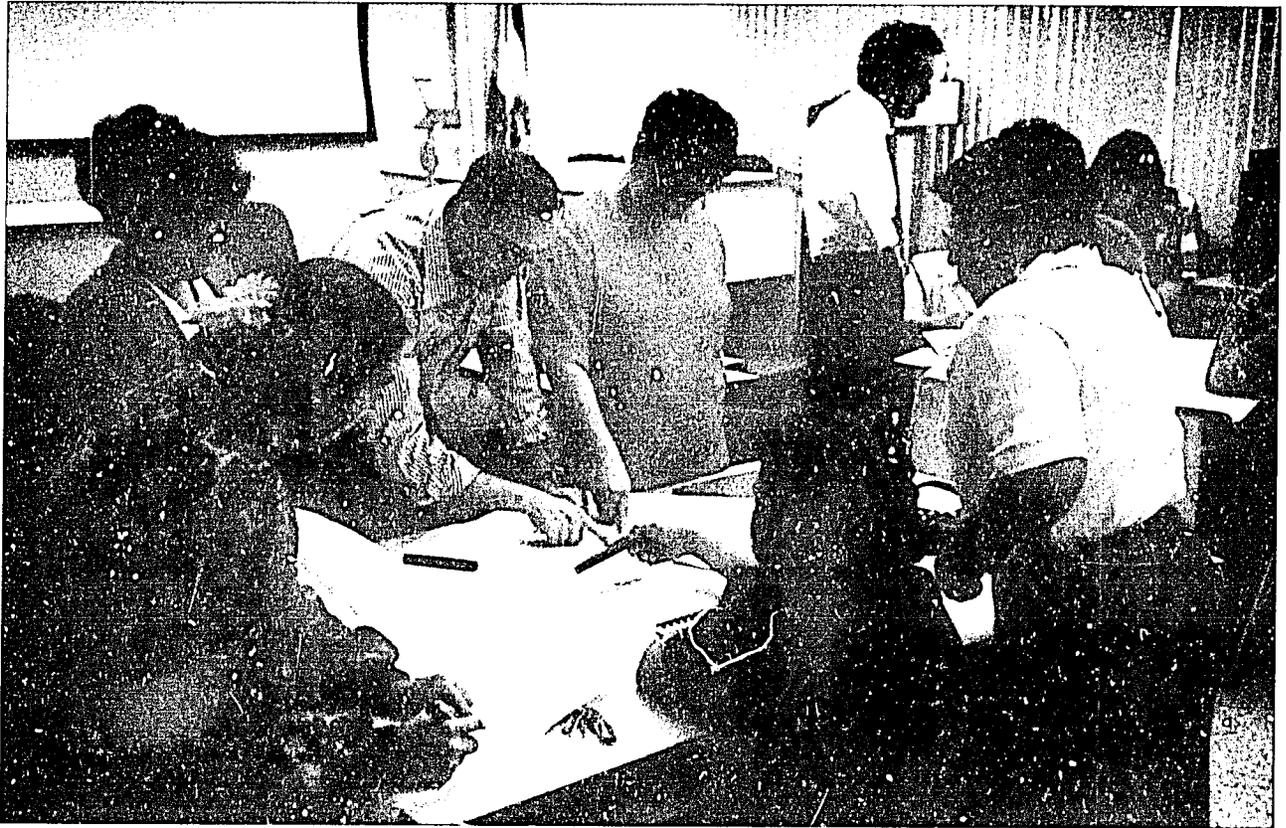


Photo by J. P. F. Coates

project, and final revision, all questionnaires were translated into French, Spanish, and Arabic.

The forms have been filled out by most QAP-supported field teams, including those in Chile, Indonesia, Jordan, Niger, Egypt, Costa Rica, and the Philippines. Data processing and analyses are being undertaken by Bethesda-based staff. Completion of the study is expected in early 1996.

## *Counseling*

The objective of the Methodology Refinement Group on Interpersonal Communication is to respond to a need for systematic means to assess, improve, and maintain the quality of client-provider communication in developing country primary health care services.

The research component of the quality assurance Methodology Refinement Group has addressed interpersonal communication (IPC) skills by developing and validating norms for interpersonal communication. These norms were translated into a training program for health providers which was applied in Honduras, Egypt, and Trinidad and Tobago.

## Honduras

In 1991, the QA group in Honduras analyzed the audiotapes of physician-patient encounters and household interviews. The study assessed whether better communication led to increased patient satisfaction and whether the improved communication was reflected in patient perceptions of the quality of IPC. Providers' perspectives on the importance and usefulness of IPC training were

*Patients' overall satisfaction and perceptions about quality of care were improved as a result of the IPC training intervention.*



Photo by Dennis Zaenger

also evaluated. Results of tape recordings of providers who received training compared with tape recordings of untrained physicians showed that the trained physicians were more likely to use positive talk, such as approval of patient efforts, and emotional talk, such as concern, legitimation, solicitation of patient opinion, and encouragement. Some IPC skills, such as open medical

questions and medical advice, showed marginal change. Patients' overall satisfaction and perceptions about quality of care were improved as a result of the IPC training intervention. While patient assessment of counseling per se was not improved, the perceived problem-solving and socio-emotional improvements seemed to result in more accurate diagnosis and enhanced rapport and compliance with follow-up appointments. Furthermore, patients' perceptions of improvements may have made them more likely to comply with counseling, even if the quality of that counseling was unchanged. Household follow-up visits to patients demonstrated that increased patient perception of provider behaviors improved patient compliance rates. Emotional talk and open-ended questions by providers increased compliance overall, particularly with requests to change lifestyle behavior. In turn, patients with higher

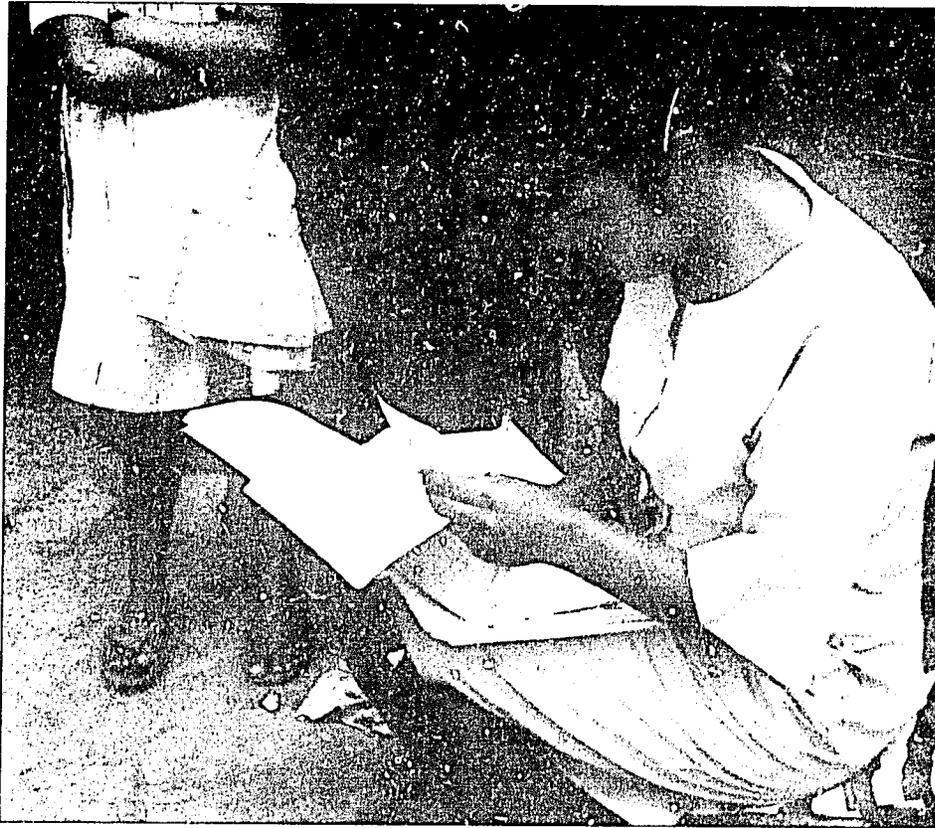


Photo by Dennis Zaenger

knowledge and compliance felt better and believed the medication was beneficial. In general, those patients who had better interactions with their providers were more satisfied. This supports the importance placed on the concept of patient wellness, which is contemplated in this and associated studies.

## Egypt

In Egypt, an IPC physician training intervention was conducted in July 1994 and January 1995. To respond to the physicians' wishes to improve quality health delivery services and patient satisfaction, the IPC training manual was adapted to nurses' needs and translated into Arabic. Several training courses were then conducted for nurses. Three

instruments were developed as post-training activities to reinforce the physicians' IPC skills:

- A post-training evaluation checklist to be filled out by a colleague who observed the encounter;
- A questionnaire addressed to the observed physician asking his or her opinion about communication with patients and work conditions; and
- An exit interview with patients to assess their satisfaction with the service.

The observations showed that physicians believe that improving their interpersonal communication skills can play a significant role during their encounter with patients. Indeed, the research showed that physicians improved the overall socio-emotional



interaction during the entire encounter and increased the listening time with their patients. The exit interviews with patients to assess their satisfaction with the service demonstrated that they were generally satisfied and felt they had received full explanation about the treatment. The lessons learned in Egypt show that ongoing "hands on" IPC activities for the providers who attend an IPC workshop reinforce the skills learned. Also, the providers felt that follow up activities were as important as the training to help them sustain the new IPC behaviors. Finally, it is suggested that the instruments used, such as observation or self-evaluation checklists, need to be simple, easy to use, and focused on the skill(s) that the team wants to improve.

## Trinidad and Tobago

In Trinidad and Tobago, a similar physician training intervention was conducted during the spring of 1995. A pre-post research design was used. Data analysis was based on post-training comparisons between trained and untrained physicians. In this analysis, pretest scores were held constant to limit the influence of differences among physicians that may have existed before the training. Trained physicians exhibited statistically higher performances regarding positive talk, attentive listening, open questions, and total physician talk. Coders also provided a global assessment of the encounters. This analysis showed that trained physicians displayed more

---

friendliness, responsiveness, and sympathy for their patients, as well as less anger and dominance. This same global assessment indicated that patients of trained physicians were more interested, friendly, and responsive to their physicians. Our study also demonstrated that before the training, there was higher satisfaction among patients of untrained physicians; after the intervention, this trend was reversed. Finally, it was found that the encounters among trained physicians lasted about twice as long as the encounters of untrained physicians (on average, an increase from 3 to 5 minutes).

Based on the results of the research conducted in these three countries, we can confidently say that IPC training is necessary and successful. Providers found the content of the course relevant and helpful for putting the new skills into practice. IPC improvements were mainly in the area of positive talk and socio-emotional talk, which spread across the entire encounter. The study suggests that it is the overall socio-emotional climate and the clinical input from the physician and the patient, through an increased share of dialogue, which assures patient satisfaction and compliance. Trainers, trainees, and researchers noted that it is difficult to distinguish legitimation, empathy, and concern, since these overlap. In the future, we recommend using them as one cluster. Participants of the training courses expressed the need for more staff to have the course and suggested that the topic be added at the university level so that medical students may learn to give better treatment to patients.

The Methodology Refinement group is finishing a monograph on counseling. This monograph will present "user friendly" IPC indicators and instruments. These tools will facilitate assessing the performance of IPC-trained providers using our approach. Different journal articles, presenting results and lessons learned, will soon be published.

## *Tuberculosis*

The Tuberculosis Project develops, tests, and refines methods which will help tuberculosis (TB) program managers and supervisors improve the effectiveness of their programs. Such quality assurance methods enable them to identify program elements that are significantly impairing system performance which they can improve with targeted interventions. This year's accomplishments include enhancing client compliance levels by improving counseling to ensure the patient's understanding of the disease as well as fostering the patient's commitment to treatment. Efforts were also made to improve health worker performance, specifically in recordkeeping.

### *The Philippines*

In the Philippines, QAP is working with the Manila City Health Department to reduce patient defaulting from therapy. Focus groups held both with patients who followed treatment to completion and defaulters showed that compliant patients understood more about the nature of their disease. They also knew more about the duration and requisite continuousness of the therapeutic regimen. Defaulters, by contrast, were prone to stop therapy when they felt better and only take the drugs when they did not feel well. As a class, the compliant patients were better educated than the defaulters.

Consequently, two interventions were proposed by QAP and Manila City TB staff. One is a standardized message for newly diagnosed patients, which emphasizes that the disease is curable but that the patient is largely responsible for overcoming the disease. It then goes on to explain the patient's responsibility for regularity



Photo by Dennis Zaunert

and continuity of treatment, carefully spelling out the duration of treatment. The second intervention promotes continuity of treatment in the form of a written agreement between the patient and the Manila City Health Department. In the agreement, the department promises that it will provide all the drugs and tests the patient may need until he or she is cured; the patient promises to collect and take the drugs on schedule.

In a random process, two city health centers were assigned to begin each of the new tools, two were assigned to use both, and two were to continue

their procedures for dealing with tuberculosis patients as before. New patients began being enrolled in the trial program in April. By the end of September, between 20 and 30 patients had been enrolled at each center. Data have been collected for the first 4 months of the trial. No analysis has yet been done, but a quick scan indicates that some centers are doing better at holding patients in the first few months, while some have not changed. Detailed analysis of the complete data set will be required to recognize any trends and factors involved in improving (or failing to improve) compliance.

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## *Study of Peer Review and Self-assessment Methodologies among Indonesian Midwives*

Private practitioners often work as independent professionals with relatively little support from their peers and with inadequate access to technical updates or other means of renewing and upgrading skills. In Indonesia, QAP associate Patricia MacDonald worked with provincial chapters of the Indonesian Midwives Association (IBD) to address this problem through peer review, self-assessment, and continuing education.

Researchers compared two methods of assessing quality:

- Peer review — using checklists for direct observation of service delivery, interviews with clients and providers, and medical record reviews.
- Self-assessment — using questionnaires based on the checklists.

In the first case, midwives trained as peer reviewers used the checklists for direct observation of their peers during service delivery. When problems were found, immediate and specific feedback was provided to the midwife being reviewed. The results of several assessments for the same clinical topic were combined and used to plan continuing education sessions to report common strengths and address common deficiencies.

In the second case, midwives filled out questionnaires about the frequency with which they perform several activities for a given clinical service. The questions on the self-assessment form followed the same standards and activities as those listed on the

peer review checklists. When self-assessment was compared with direct observation as a method of quality assessment, it was found to be nearly as accurate at much less cost.

To determine the ability of the peer reviewers to accurately assess the performance of midwives, another study was conducted in which a research assistant, acting as the "gold standard," accompanied a randomly selected group of peer reviewers on their peer review visits. The researchers, observing the same services, simultaneously and independently used the checklists to assess the midwife's performance.

A comparison of scores given by the researcher and the peer reviewer

*When self-assessment was compared with direct observation as a method of quality assessment, it was found to be nearly as accurate at much less cost.*

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*Both individual feedback and continuing education resulted in measurable quality improvements.*

re-vealed a consistently high level of correspondence in rating the midwife's performance (overall average of 85%). These results provide the necessary confidence in the peer reviewer's ability to use observation checklists to assess performance and subsequently to assess the impact of the peer review program.

A comparison of findings in the performance of midwives showed small, incremental improvements in performance with each successive cycle of peer review. This type of general improvement is most likely due to the effects of continuing education on overall quality of care.

The findings also show remarkable improvements in performance 3 months after receiving an initial peer review visit. These changes most likely result from the immediate and specific feedback at the time of the peer review visit.

Both individual feedback and continuing education resulted in measurable quality improvements. The peer review program produced benefits beyond the immediate focus of improved quality of care, such as developing leadership and managerial skills, increasing attendance at professional meetings, strengthening technical support for midwives, and enhancing the professional status of midwives and their association.

IBI is now replicating both the peer review and self-assessment methods on a wider scale and using the findings of these assessments to develop continuing education sessions aimed at continually improving the quality of midwifery services.

## *Malawi*

Traditionally, supervisors are the front line of quality control, but experience worldwide suggests that they rarely look carefully at individual tasks and how well the tasks are performed. This apparent neglect is partly due to uncertainty about the most effective means of assessing quality and the fact that few supervisors are trained in quality assessment.

In Malawi, QAP, in collaboration with the Ministry of Health Community Health Sciences Unit, led a methodology refinement study of alternative methods by which supervisors could assess health worker performance. The research team looked particularly at client exit interviews, provider interviews, and record reviews and compared each with direct observation of workers as they performed assigned tasks. Preliminary results are now available, and a final report is expected shortly. Results showed that client exit interviews can detect concrete activities, such as weighing and plotting, but only observations were able to identify the more refined, "mental" tasks of checking immunization status and growth. Exit interviews provided good agreement on selected history, physical exam tasks, and some counseling tasks. Provider interviews generally resulted in poor agreement with observation, with the exception of a few counseling tasks. Record reviews, at least in the Malawi context, were of little value, because records are incomplete or altogether omitted.



photo by Gaeil Murphy

## *Institutionalization*



*Institutionalization of QA is achieved when essential and appropriate QA activities are carried out effectively on a routine basis throughout an organization, health system, or health sector. Quality assurance activities can be said to be fully institutionalized and sustainable when expertise, commitment, and resource allocation are sufficient to apply, adapt, sustain, and further develop the QA approach.*

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# Niger



## *Taboua and Measles*

*The QAP currently has two projects in Niger. The Niger Measles Initiative focuses on improving the quality of immunization services in three health departments and the urban commune of Niamey. The Taboua Project is focused on specific clinical interventions in all seven districts of the Taboua Health Department.*

## *QAP/Taboua*

The focus of QAP Taboua was developed in collaboration with the Departmental Health Director of the Ministry of Health. The priority clinical interventions to be improved include: growth monitoring; nutrition; vaccination; family planning; and case management of diarrhea, malaria, tuberculosis, and acute respiratory infections. Management support services such as supervision, logistics, and communication systems are also targeted for quality improvement, as these support services are critical to ensuring that the health service structure can deliver quality care.

QAP's experience in Taboua to date indicates that a quality assurance approach can be introduced into the health care system, and that changes in the region's fundamental health management procedures have occurred as a result. Supervision plays a significant role in institutionalizing QA methods into routine practice. Niger supervisors, trained in quality assurance skills, have clearly communicated standards to health workers, monitored performance based on these standards, identified priority problems, and facilitated systematic process improvement activities at both regional and service delivery levels. As a result, the Taboua Department has made dramatic improvements in a short period of time, both in terms of the quality of curative and preventive services performed and in the number of persons served. Presently more than 30 problem-solving teams in Taboua are continuously working to solve quality-related problems in their respective districts.

Examples of problems for which clinic-based teams have found solutions include: high dropout rates for vaccination, prenatal care, family planning, TB

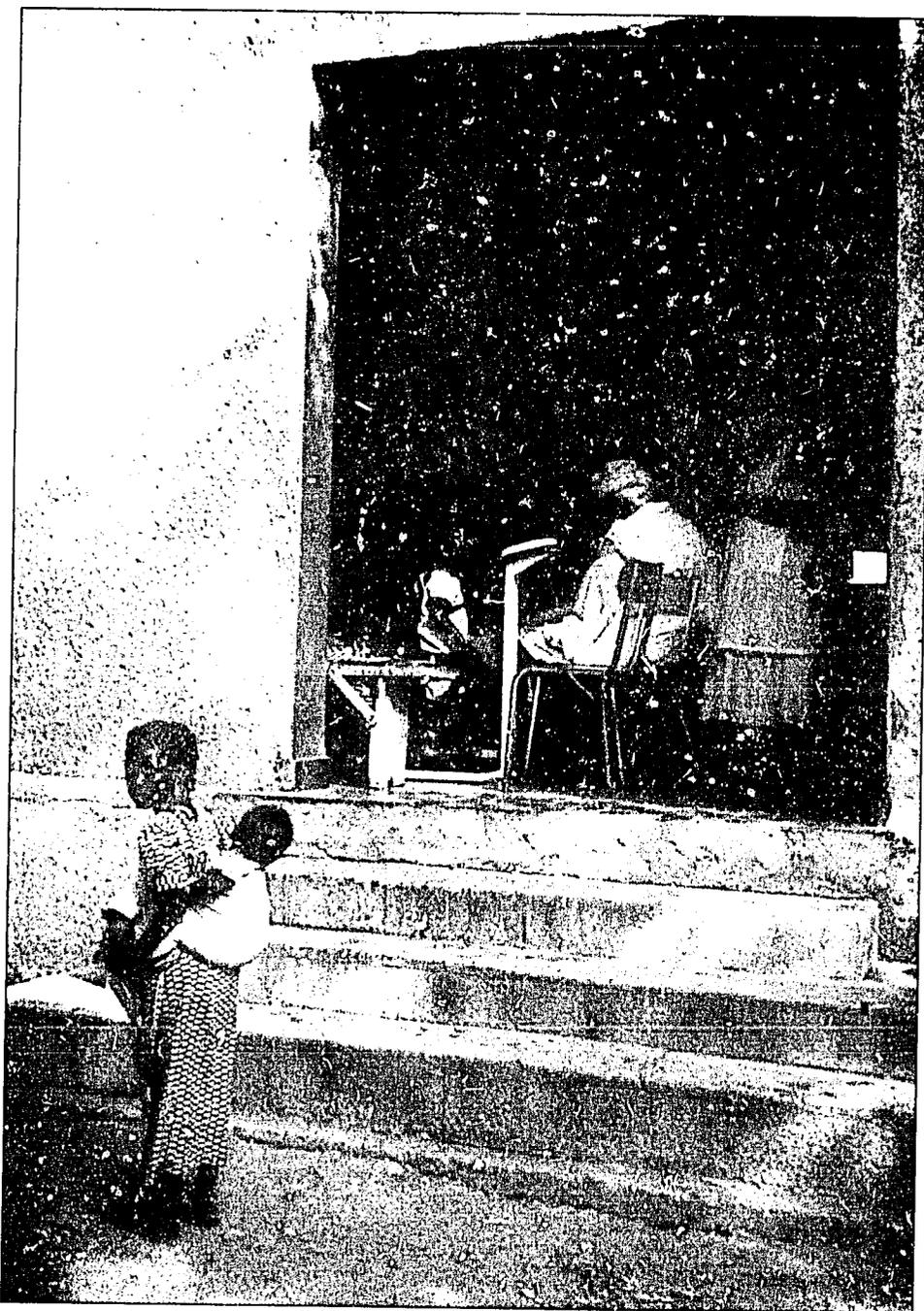


Photo by Gael Murphy

*The Taboua Department has made dramatic improvements in a short period of time, both in terms of the quality of curative and preventive services performed and in the number of persons served.*

treatment, outpatient nutritional rehabilitation; low utilization rates for family planning and growth monitoring; slow recovery of malnourished children; non-integration of services; high mortality due to diarrheal disease; and client discomfort. Regional-level teams have remedied problems, such as: irregularity of supervision, chronic vehicle

shortages due to disrepair, breakdown of the cold chain, shortage of small medical equipment, and irrational use of training resources.



Photo: Peter Maphu

Health managers and providers, who once felt powerless to make changes, now actively use the QA skills taught them to identify, analyze, and make significant improvements on a continuous basis. A QA approach in Niger has directly contributed to: improved management capability and decision-making authority; the design of systematic procedures for service delivery; greater willingness to take responsibility for the quality of services delivered; and preparation of health personnel for decentralization.

The following is a list of accomplishments according to the sub-components defined in the project:

#### *Infrastructure, Equipment, and Supplies*

- Priority package of services based on national priorities were established for the Department.
- A standardized list of minimum equipment and supplies needed in the health facilities was developed, an inventory was conducted to determine gaps, and needed equipment and supplies were procured.
- Equipment (scales, blood pressure cuffs, microscopes, stethoscopes, refrigerators) and vehicles were repaired.

- 
- Departmental Health Offices were renovated.

#### *Quality Improvement Teams*

- Seventy-six persons have been trained in QA methods and skills.
- More than 30 problem-solving cycles have been initiated. Seventy-percent of these problem-solving efforts are completed, or are near completion, and concrete quality improvements are documented.
- Twenty-five teams are actively pursuing quality improvement activities at Department, medical center, and dispensary levels.
- Training for QA coach facilitators at the regional and district levels was conducted. Facilitators are now following up active teams.

#### *Supervision and Monitoring*

- An explicit supervision policy detailing the organization, roles and responsibilities, content, frequency, and reporting requirements has been disseminated to all of the districts. Its innovation was to create integrated supervision teams at the district levels.
- A supervision course incorporating a quality assurance approach has been developed and field tested.
- All district supervisory teams (39 persons) have been trained in advanced supervision techniques.
- The supervision reporting system was revised to improve the quality of information obtained, reduce paperwork, and improve focused problem analysis and follow-up.
- A series of guidelines checklists was developed to aid supervision of technical and managerial activities.

- Training in monitoring for essential services and disease surveillance was provided. As a result health workers are setting performance standards and self-monitoring. Data being collected is more accurate and is being used to identify and remedy problems more readily.

#### *Management and QA Structures*

- A Quality Council has been established at the Departmental Health Directorate to guide quality assurance efforts. The Council members include the Departmental Health Director (DHD), regional staff, District Health Officers (DHO), and the Resident Advisor (RA).
- Regional and district-level quarterly staff meetings are held to review key technical and administrative information, such as performance measurements for the minimum package of services, disease surveillance, supervision feedback, definition of integration priorities, and the progress of the quality improvement teams.
- A regional and peripheral medical equipment inventory system has been instituted.
- A computerized personnel data base has been designed and is being used to rationalize selection of training participants.
- A vehicle maintenance system has been adopted, and 32 MOH drivers were trained in improved routine vehicle maintenance and safety. A system for managing spare parts has also been developed.
- A gas bottle management system has been designed and tested at the regional, district, and clinic levels in response to a gas shortage which seriously disrupted the cold chain.
- Management skills training needs have been identified, and an appropriate Technical Advisor (TA) to design and conduct the training is being sought.

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- Support to send the Department Health Administrator for third country training in administration and accounting was provided.

#### *Adapting Norms and Standards*

- A cross-functional team has been established to review and adapt technical guidelines for the essential package of preventive and curative services.
- A reference guide of Expanded Program of Immunization (EPI) norms and standards has been drafted to reinforce health worker compliance.
- Job aids to reinforce correct clinical procedures have been developed for case management of TB, malaria, and malnutrition, and to facilitate the correct calculation for a child's age.
- In-service training needs have been identified and are being supported under the project in clinical nutrition, TB case management and reporting, and laboratory skills.

#### *Collaboration Coordination*

- QAP has collaborated with the DSE, Measles Initiative, HKI, BASICS, UNICEF, AFRICARE, and CARE in planning, training, and quality assessment activities
- The DHD was funded under the project to participate in a World Bank organized study tour to learn about decentralization and cost recovery efforts under way in the Republic of Guinea.

## *Niger Measles Initiative*

The purpose of the Niger Measles Initiative (MI) is to assist the National Immunization Program in Niger to improve the quality and coverage of immunization services in three Departments (administrative areas) and in Niamey, the capital city, with the goal of reducing infant and child morbidity and mortality, in particular that due to measles. The Quality Assurance Project manages long- and short-term technical assistance, as well as material assistance, to the central Expanded Program of Immunization (EPI) and the three Departments.

#### *Training Modules*

The project continues to improve workers' performance by conducting training in monitoring, counseling, and vitamin A, followed by regular supervision. The MI training modules in IEC/EPI, monitoring and supervision techniques, and vitamin A supplementation were revised based on previous evaluations. Three trainings of trainers were conducted in preparation for the regional and peripheral training of agents, which is ongoing. To date, 73 of the 150 programmed health agents have been trained in EPI management and vitamin A supplementation. Training will be followed up with supervision of the trained health workers to evaluate the impact of their new skills.

#### *Job Aid Development*

A monitoring wall chart has been designed and distributed to 50 peripheral centers during the monitoring trainings. The project will use the feedback from these agents to further refine the wall chart before using it on a wider scale. Also, the project is developing an EPI Norms and Standards document to be adopted by the central EPI program and distributed nationally.

Outreach activities among mothers are being improved in Urban Commune of Niamey (CUN) through an assessment of actions conducted by the

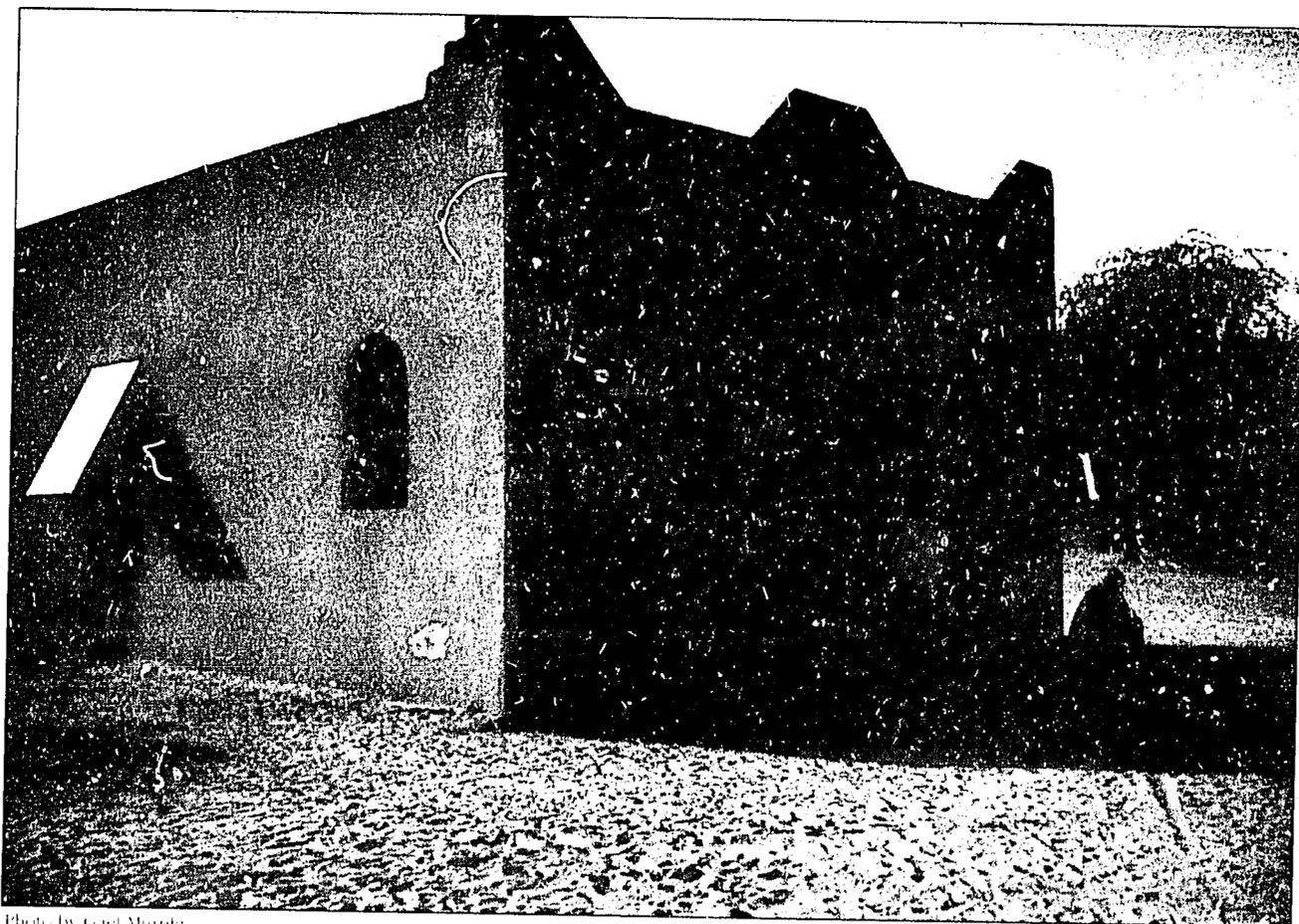


Photo: by Carol Murphy

previously trained femmes-relais. Also, the MI will support a school education outreach campaign, conducted by the central EPI program and scheduled to begin in July.

The project has facilitated the opening of four vaccination centers in the Department of Tahoua. All were in need of a minimum amount of equipment and supplies, which prevented their functioning.

A serious meningitis outbreak recently occurred nationwide. The MI, among other projects, participated in the response effort organized by the MOH by financing some transportation costs for the outbreak response teams in Niamey.

In the Department of Dosso, the project has assisted in the integration of EPI activities in 19 centers.

Currently, these centers (56% of the centers in Dosso) are conducting daily EPI services. With each client contact (regardless of purpose of visit), agents are verifying vaccination status, which will help reduce missed opportunities.

Quality improvement (QI) activities are being conducted primarily in Tahoua, where there are trained teams and therefore the highest likelihood of success. To date, four quality improvement teams (QITs) have been formed and continue to progress: the Guidan Ider Rural Dispensary, the Illela Medical Center, the Tahoua Regional Health Directorate gas bottle resupply team, and the Dosso DDS gas bottle resupply team. At the end of this project, we expect to compare the results of these latter two QITs and present a proposal for implementation of a national gas bottle resupply system to the Central EPI program.

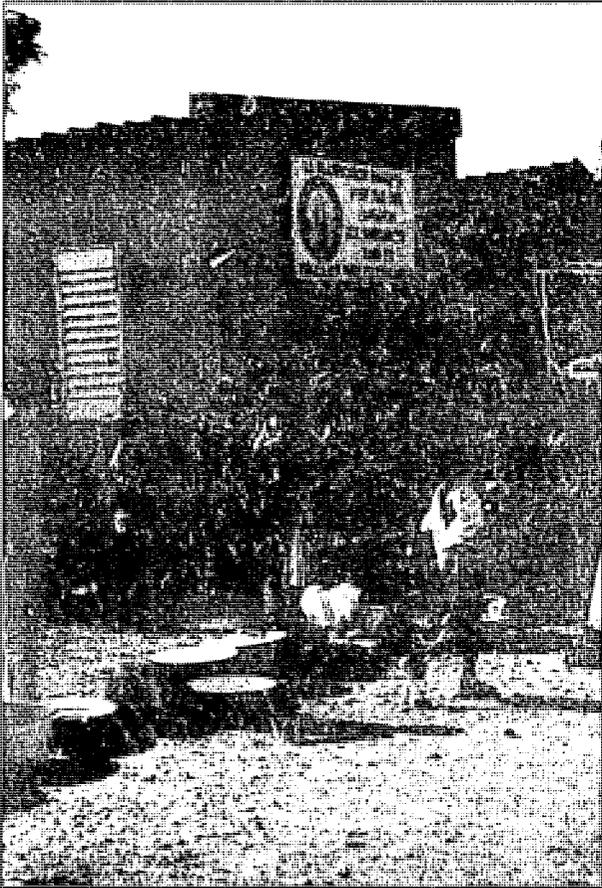


Photo by Gael Murphy

*As a result of these visits, the dispensary is experiencing an 80% to 100% return rate of the mothers who had initially dropped out.*

Gas bottle distribution was identified as a major problem in Tahoua and Dosso, based on reported supply ruptures at the rural dispensary (DR) levels. The main reasons cited are: 1) a lack of gasoline for vehicles to transport the bottles to the DR level and 2) poor management of the gas bottle supply and ordering. Other areas of weakness which were identified were the tracking system at the district level and the small inventory of backup bottles. The team has instituted a system of inventory notebooks at the regional dispensary level and at each medical center. At the DHS level, there have been no stockouts of gas bottles since last July. Since last quarter, no chief physician (CM) has reported a rupture of their gas bottle supply. Each CM an has received at least five bottles to resolve the problem of inadequate stock. The new management system is in place and is being monitored by the EPI Director of Tahoua.

In Tahoua Department, the project is continuing to improve management and resource planning through problem solving quality improvement in selected districts. Problems were selected on the basis of their potential impact on dropout rates and the feasibility of accomplishment in 1 year. MI has collaborated with QA Tahoua to identify small, manageable process improvement projects in areas mutually identified by QA Tahoua and MI. In the Tahoua Department, measles coverage in 1994 averaged 36%, up from 15% the year before. Access, as measured by BCG (0-11 months) coverage, has increased from 30% in 1992 to 60% in 1994 (Tahoua Dept. data).

Guidan Ider Rural Dispensary: Based on 1994 vaccination data, the main problems identified by this team were: 1) low and declining coverage of measles; 2) poor return rates, particularly between DTCL and measles (72% dropout rate in 1994); 3) limited vaccination service, particularly during a 2-month period, due to national strikes. The team proposed the following actions: 1) systematic verification of vaccination status of women and

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children, regardless of the purpose of their visit. This has been coupled with a reorganization of services so that vaccination is offered every day, thus reducing missed opportunities; 2) scheduled home visits by the dispensary staff to motivate mothers to complete vaccination cycles; and 3) outreach sessions at the dispensary.

As planned, the vaccination schedule has been extended to 5 days per week. In an effort to improve the quality of the vaccination services and to cut down waiting times, services were reorganized. MI has undertaken repair costs of the motorcycle, which is being used for weekly home visits. During the visits, a predetermined vaccination educational presentation is conducted, and the vaccination status of women and children is checked. As a result of these visits, the dispensary is experiencing an 80% to 100% return rate of the mothers who had initially dropped out. Also, the center has reported that children who are 1-2 years late are returning to complete their cycle. Since implementing their solution, the dispensary has reported a doubling of their vaccination coverage.

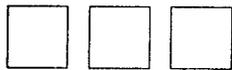
Illela Medical Center: Utilizing the multiple criteria assessment matrix, this five-member team identified low rates for vaccination against measles in the district as a serious problem. An examination of the center's vaccination registry showed that only 101 of the 769 children vaccinated against diphtheria pertussis tetanus (DTPD) in 1991 returned to complete the measles vaccination (13% return rate). Use of a cause-and-effect diagram made evident to the team that there were three dominant causes of these rates: 1) the lack of vaccination outreach activities, 2) poor management (available workspace, vaccination schedules, lack of furniture, lack of integration of services, lack of counseling sessions) of vaccination services at the center, and 3) irregularity of health education classes provided during the services. Observations, along with flowcharting of vaccination services allowed members to identify existing deficiencies within their vaccination ser-

VICES. One thing that became evident during the observations was that the current process for vaccination services needed to be restructured to allow for an orderly patient flow and to provide an opportunity to deliver vaccination education. The team's chosen solution is: 1) based on vaccination records, weekly visits will be scheduled to those who have dropped out; 2) during these visits, a questionnaire will be administered to mothers in order to identify the causes of their dropout; 3) vaccination service will be reorganized so as to minimize missed opportunities.

The vaccination service has been reorganized and integrated with other services. All clients are checked for vaccination status, and immunization is offered daily. The addition of a patient waiting area and a new station has allowed for an orderly patient flow and for improved patient education and counseling. Team members proposed buying two new tables and four benches so that a waiting area and a new station could be added. MI purchased these items, improving the organization of the vaccination sessions and improving waiting conditions. To address the lack of vaccination outreach activities and home visits, team members proposed using the one vehicle that is available to the center. During the visits, health workers check vaccination status of women and children and encourage them to return to the medical center to complete vaccinations. A schedule of home visits and outreach sessions has been established and is being followed. Another small, but important, change proposed by the QIT was to congratulate a mother for a job well done upon completion of all vaccinations of her child. Recognition of a mother's efforts to prevent childhood diseases will provide positive reinforcement of the goals of vaccination services, possibly resulting in an increase in future vaccination rates.

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# Chile



*The purpose of this project is to work with the Ministry of Health in Chile to develop a national quality assurance program within the Department of Primary Health Care. Our work complements the USAID mission's effort to jumpstart the PHC sector in Chile. Major activities include training, technical assistance, small project support, and dissemination.*

The Quality Assurance Project provided technical assistance to the Chilean Ministry of Health from 1991 until 1994. The National Program for the Evaluation and Improvement of Quality in Chile (EMC) now operates independently and is financially and technically self-sustaining. QAP collaboration began in July 1991, when QAP staff and consultants presented a workshop to MOH officials in order to raise awareness about the importance of quality assurance and to introduce a range of methods and approaches to improve quality. The recommendations of seminar participants led to the development of the National Project for the Evaluation and Improvement of Quality in Chile.

In the final phase of the project, which began in August 1993, the EMC Program has been formally designated as a routine program to be implemented by the health service areas (HSAs). This phase of the project is characterized by continued reduction in the role of external technical support and further development of the central level team. The development of local quality plans has resulted in decentralization of QA activities from the Ministry level to the HSAs, where quality monitors have assumed leadership. The creation of the MOH's Unit for Quality and Norms and the completion of the training modules has resulted in institutionalization of QA methods. The modules constitute an essential tool for replicating training at the HSA level, as well as providing a critical point of reference during technical presentations and group work.

Since its inception, the EMC Project has grown into an ongoing MOH program, with strong technical capabilities at the central level and a broad base of support in the HSAs. The program's success can be attributed to the following factors: 1) the technical

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***Summary of Project Achievements of the National  
Program for the Evaluation and Improvement of  
Quality in Chile (July 1991-July 1995)***

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<b>5254</b>	Health professionals received basic training
<b>256</b>	QA monitors trained
<b>26</b>	Health Service Areas participating in QA programs
<b>90</b>	QA Committees and Commissions at regional, HSA, hospital, and health center level
<b>4</b>	Health Service Areas have Quality Units
<b>11</b>	Health Service Areas have QA plans and policies for 1995-2000
<b>200</b>	Formal quality improvement projects
<b>500</b>	Quality improvement activities

excellence of the central level staff, including a strong command of QA methods, training approaches, and interpersonal skills; 2) a decentralized approach, which provides flexibility to respond to local needs and continuity despite changes at the central level; 3) the methodological innovations made by the central team, which enabled adaptation of QA to the Chilean reality; 4) the progressive incorporation of monitors into the program, which facilitated the exchange of experiences and mutual cooperation, providing essential support to the central level team; 5) collaboration with universities, which reopened communication between the MOH and Chile's academic institutions. This final factor is especially important because it has also led to inclusion of QA in professional curricula, which contributes to institutionalizing quality throughout the health professions. The *table above* summarizes EMC Project achievements from July 1991 through July 1995.

Support for decentralized planning and implementation is exhibited in the existence of QA programs in 26 of the country's 27 HSAs. The generation of a large number of quality improvement projects in the country's HSAs, and at the various levels of care, signals widespread commitment to quality. Group work is fostered by the development of effective teams, which improve communication and foster creativity. The Unit of Quality and Norms is viewed as a helpful advisory body which provides sound technical assistance, creating a climate that encourages individuals within the system to make a commitment to quality. All of these factors contribute to the success of the Chile program, making it a model for other countries in the region, who can learn from it to develop programs that respond to their local realities.

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# Jordan



*The Quality Assurance Project's primary focus in Jordan is to improve the quality of family health services by developing integrated service delivery using a quality assurance approach. To enable this activity, the project has worked intensively with the Ministry of Health (MOH) to design, develop, and implement a national quality assurance program appropriate for the Jordanian health care delivery system.*

Although the Quality Assurance (QA) Project has been involved with Jordan since November 1992, this year marked the first anniversary of Resident Advisor (RA) activities. In fiscal year 1995, efforts focused on expanding the breadth and intensity of project activities, while building on the sustainable structures for implementation and training established during the previous 3 years.

## Project Management

Several administrative changes occurred in FY 1995. Dr. A.F. Al Assaf, the first QAP RA, returned to the United States in February after 1 year of service. He was replaced by Jolee Reinke, MSN, CPHQ, who served as interim RA from February through August. Ms. Reinke was replaced by Dr. Walid Abubaker, in August. The changes in RAs presented the project with periodic opportunities to evaluate accomplishments, clarify goals, and redesign strategies and had no discernible effect on project continuity and working relationships with Ministry of Health staff.

Dr. Bushra Nimry, the Deputy Project Director responsible for clinical Family Health Services QA development, left the project in March and was replaced by Dr. Sana' Naffa' in late May. Development and refinement of Family Care Model Center activities continues under the supervision of Dr. Naffa'.

In July, project offices were moved to the Ministry of Health (MOH) building which houses the Planning and Project Management Directorate. This move has facilitated communication with our MOH Project Director and Coordinator and has given QA Project activities a higher profile within the Ministry.



## Project Activities

Working with high-level Ministry of Health officials, and through the Monitoring and Quality Control (M&QC) Directorate, the project's framework has been further refined. Activities at the Ministry level concentrate on creating a culture of quality within the Ministry and strengthening the M&QC role in directing health care quality activities. Service delivery level QA activity is ongoing in Balqa'a Governorate, through Al-Hussein Hospital in Salt, the General Health Directorate (GHD), and the Health Directorate (HD). Project expansion to Madaba is beginning. The Family Care Model Center in Salt is the pilot area for QA integration in family health services. Model

*Quality is never an accident;  
it is always the result of high  
intention, sincere effort, intelligent  
direction, and skillful execution;  
it represents the wise choice of  
many alternatives.*

Quote from QAP  
Jordan Project poster

*Greater access to senior officials resulted in the improved flow of information and a feeling of empowerment among center staff.*

# Quality

*is never an accident  
it is always the result of*

**high intention,  
sincere effort,  
intelligent direction, and  
skillful execution;**

*it represents the **WISE CHOICE**  
of many*

# Alternatives.



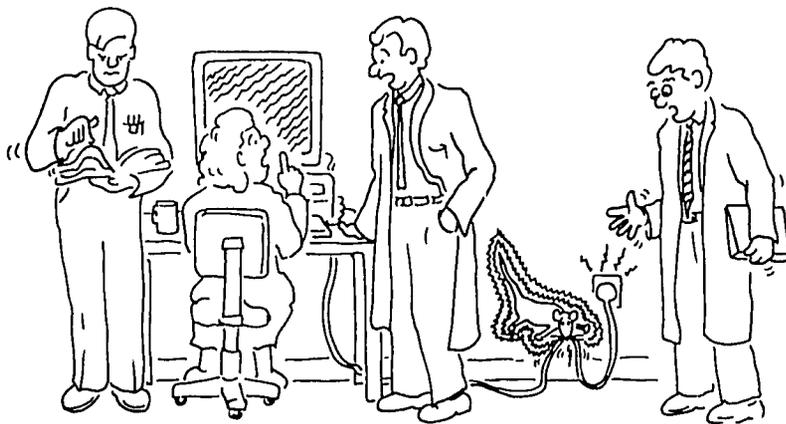
Centers in Irbid, Jerash, Ma'an, Madaba, and Mafraq will be added by the end of the project extension period in March 1996, and will serve as demonstration sites and resources for QA expansion.

*Accomplishments during FY '95 include:*

- Nine Ministry QAP staff attended month-long practicums in the United States. They worked directly with QA counterparts, learned about indicator-based monitoring systems, and observed QA implementation at several hospitals and primary health sites in Oklahoma City and the Washington, DC, area.

- Standards-setting teams created and communicated several important groups of practice standards and guidelines. M&QC staff created primary care and hospital standards to be utilized in facility evaluation. Al-Hussein Hospital, Salt, staff created over 25 interdisciplinary clinical standards for pediatric, surgical, emergency, and critical care. The Balqa'a HD and Family Care Model Center staff worked with M&QC to create selected maternal and infant care standards, including those for birth spacing and immunization. Staff throughout Balqa'a GHID standardized care protocols for patient assessment, patient education, prenatal care, and routine nursing interventions.
- All service delivery sites concentrated on improving customer service. Client satisfaction surveys were done in many facilities. Responding to survey results, Balqa'a GHID and HD staff focused on the quality and volume of patient education materials and coordinating and centralizing the process of creating/distributing clinical educational materials for common diseases and conditions. Al-Hussein Hospital also disseminated patient education booklets related to smoking, hypertension control, diabetes, and other disease management. Four pilot health centers performed patient flow analyses. Based on the results, the centers made changes in clinic direction signs and service locations, enhancing access to care. In response to a field request for more central coordination of customer surveys, M&QC began development of standardized satisfaction tools for ambulatory care. As of the end of FY 1995, this activity is ongoing.
- Internal customer service was a focus at all pilot level facilities. Internal GHID personnel policies were created for implementation at these clinics, resulting in better communication of personnel issues and compliance with clinical requirements. Greater access to senior officials resulted in the improved flow of information and a feeling of empowerment among center staff. The HD acknowledged complaints about clinic management and responded with job-task analyses that caused staff redistribution and management strengthening.
- Four computer software programs were developed for Al-Hussein Hospital, Salt: a pharmacy utilization module which will allow analysis of both use rates and prescribing patterns, personnel and accounting programs to automate recordkeeping, and basic patient record information to track demographic and diagnostic data. This software will be installed and implemented when the appropriate hardware becomes available during the coming year.
- Several pilot sites addressed the issue of emergency services. M&QC revised Emergency Room documentation. One comprehensive health center did extensive training in trauma and emergency medical conditions, creating a certification process for staff working in the Emergency Room. Balqa'a HD physicians created a cross-training program with Al-Hussein Hospital, sending clinic physicians to the Emergency Room to gain experience with complicated patients. Al-Hussein Hospital conducted a vigorous life support training program, with over 98% of the nursing staff completing Basic Cardiopulmonary Resuscitation (CPR) training and select Emergency Room staff studying Advanced Cardiac Life Support (ACLS).
- Medical records were improved in several areas. Al-Hussein Hospital acted to improve record filing and retention after they confirmed

# Quality Assurance is...



...bringing problems to the attention of others.



a record loss rate of 12%. They designed a terminal digit filing system, dedicated trained staff to the records function, and now experience no measurable records loss. Another primary health center was unable to locate records over 40% of the time. To improve their records system, they developed a color-coded storage system and allocated dedicated trained staff to the issue. They now experience no record non-availability.

- Lack of job descriptions was identified as a cause of poor quality in many project sites because staff did not understand their roles and responsibilities. A Ministry-wide job description for hospital staff nurses was developed with M&QC assistance, and all pilot sites created job descriptions unique to their practice sites. Anecdotal evidence points to an increased knowledge and understanding of

individual responsibilities as well as increased rate of job satisfaction.

- Infection control was a common area for improvement. The Balqa'a HD established, communicated, and monitored standards for use of sterilizers, and found personnel performance improved after re-education. Al-Hussein Hospital discovered a 97% negative culture rate, suggesting a pattern of over-utilization. They set and communicated standards for blood culture use, and thereafter the lab noted a decrease in submissions. The hospital also studied surgical wound infections, and although they could not accurately calculate an actual rate, they did determine that the incidence was unacceptable. After training Operating Room and Surgery Department nurses in wound care and general infection control procedures, there was a noted decrease in the incidence of infection.

Course	Dates	Attendees
<b>Clinical Quality Improvement for Nurses and Midwives</b> ■ Balqa'a HD	October 1994 (6 days) July 1995 (6 days)	22 12
<b>QA Awareness</b> ■ Amman GHID ■ Salt Hospital ■ Shuna Health Center ■ Salt Hospital ■ Salt Hospital ■ Madaba GHID ■ Salt Hospital	November 1994 (1 day) January 1995 (2 days) January 1995 (1 day x 3) May 1995 (2 days) June 1995 (2 days) June 1995 (2 days x 2) July 1995 (2 days)	24 34 40+ 20 20 43 21
<b>Intermediate QA Skills</b> ■ pilot area and M&QC	January 1995 (5 days)	32
<b>Basic Nursing Skills</b> ■ Shuna Health Center	February 1995 (6 days)	16+
<b>Training of Trainers in Contraceptive Technology</b> ■ Model Center, Salt	February 1995 (6 days)	10
<b>Training of Trainers for QA</b> ■ pilot area and M&QC	April 1995 (6 days)	22
<b>QA/Customer Service</b> ■ Balqa'a HD nurses ■ Balqa'a HD physicians	June 1995 (2 days) June 1995 (2 days)	20 10
<b>Clinical Quality Improvement for Nurse Aids and Practical Nurses</b> ■ Balqa'a HD	June 1995 (5 days)	20
<b>QA &amp; Administrative Topics for Senior Physicians</b> ■ Balqa'a HD	June 1995 (2 days) July 1995	8 7
<b>Birth Spacing</b> ■ Balqa'a HD	June 1995 (3 days)	10
<b>Computer Training</b> ■ Balqa'a HD	July 1995 (6 days) August 1995 (6 days)	8 8
<b>Customer Service</b> ■ Salt Hospital	July 1995 (2 days) August 1995 (2 days)	20 20
<b>QA/Customer Service for Clinic Clerks</b> ■ Balqa'a HD	July 1995 (2 days)	10
<b>QA Team Building</b> ■ Balqa'a GHID	August 1995 (3 days)	26

*After training Operating Room and Surgery Department nurses in wound care and general infection control procedures, there was a noted decrease in the incidence of infection.*

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## Training

There were two main focuses of training during the year. The first was QA training, which provided Awareness, Team Building, Customer Service, and Training of Trainers. The second emphasis was on clinical training done in response to QA findings or as part of the birth spacing training in association with Model Center QA activities. The table on page 35 summarizes project-sponsored classes. Following the April training of trainers, all QA courses were designed and delivered by MOH staff with RA assistance. Clinical training was entirely designed and delivered by MOH staff, with the assistance of the Deputy Project Director.

In September, all training was suspended while a Task Force on Quality Re-Design of Training was convened. They are evaluating the scope of QA and clinical training, as well as the roles of the project and the MOH in training delivery and funding. They will create a training plan for the remainder of the project. In addition, RAs presented QA topics to the Royal Medical Services, the Institute of Public Administration, and the Jordan Association for Family Planning and Protection. The project funded six MOH participants to attend the Quality Management Program for Health Care Organizations in the Middle East in Egypt in May 1995. Project staff augmented Dr. Donald Berwick's faculty. The project also funded two participants to attend the First National Conference on Quality in Health Care in Egypt in September 1995.

## Family Care Model Center

The Model Center in Salt was inaugurated by the Minister of Health and the U.S. Ambassador to Jordan on March 15, 1995. Prior to opening, the project rebuilt and refurbished the existing center. Quality Design techniques had been used to ensure meeting client requests for privacy in treatment and provider requests for up-to-date equipment and infection prevention measures. Patient loads immediately increased from 40% to 80%. During

a nationwide polio immunization campaign during the center's inaugural week, over 900 visits were made within 2 days. Clients indicated they came because of the new, easier to access services.

Expanded, integrated birth spacing services are offered at the Model Center. Initially service demand increased over the old clinic; however, due to kingdom-wide recall of contraceptive methods, the increased client volume was not sustained. Although some supplies were eventually obtained through USAID, the supply was not consistent enough to draw clients for regular care. Ministry-level action is ongoing to address permanent solutions for the supply, distribution, and warehousing problem.

Training in birth spacing and family health services is a project priority. Several formal classes were held to increase skill and knowledge in this area (see training grid). Multiple informal classes were also held on topics such as self-breast exam, natural family planning, and voluntary surgical contraception.

The Model Center concept will be expanded during the rest of the project. Model Centers are planned for Madaba, Mafraq, Ma'an, Jerash, and Irbid. Initial QA readiness and quality of care assessments have been performed, and equipment has been identified and submitted to USAID/Jordan for purchase. A plan to introduce QA and clinical training in these areas is being developed.

## Studies

Six cost studies were planned during the life of the project, three hospital-based and three based in primary care. The first hospital study was expanded significantly and provided so much data that further original hospital studies have been canceled. In the same way, the scope of the primary care study has been greatly expanded, and the expert panel advises doing only one primary care study.

- An extensive unit cost study was completed at Al-Hussein Hospital, Salt. The study measured the total cost for care from June 1993 to May 1994. Costs were also calculated for the average cost per inpatient night, and average cost per outpatient visit. The cost per inpatient night was further categorized by major clinical department.
- Results showed that the cost per patient night ranged from JD 11 to JD 55, compared to a charge to the patient of JD 2.2 to JD 4.4. This difference between cost and charge has implications for MOH regulations regarding medical insurance. The expert panel believes cost savings are attainable through staff reductions. To that end, they recommended further development of job specifications to clearly determine required staff.
- It is anticipated that one primary care study will be carried out in the near future. The expert panel has not yet determined whether the study will examine the cost of service delivery across all patients in a clinic, cost studies of several clinics, or common services across several clinics.
- The Maternal Mortality Study completed training of their field staff. The data collection phase of the study began in July. The final report is due in March 1996.
- In June, a new study manager was appointed for the Causes of Death Study. Final protocol revisions were completed in September, with data collection targeted to start November 1, 1995. This study is scheduled to continue beyond the project extension period.
- A new Principal Investigator and investigators were appointed to the National Morbidity Study in June. After extensive discussions about protocol revision, a study structure was agreed to in September. Tools and detailed protocols will be reviewed in October, and data collection should begin in November.

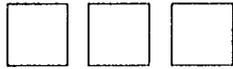
Epidemiology studies are carried out through MOH staff who work with a researcher from Johns Hopkins, supported by project staff. All studies had received approval at the beginning of this fiscal year, but subsequent delays occurred while waiting for further approvals of study participants and funding.

- The Neonatal and Perinatal Mortality Study Principal Investigator was so interested in the research that work began prior to formal approvals. Therefore, data collection began in September 1994 and was completed in September 1995. Initial data aggregation and analysis is beginning, and final reports are expected by December 1995.

*Quality Design techniques had been used to ensure meeting client requests for privacy in treatment and provider requests for up-to-date equipment and infection prevention measures.*

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# Egypt



*The Quality Assurance Project is providing technical assistance to two projects within the Ministry of Health in Egypt. The Cost Recovery in Health Project (CRHP) has been designated to develop and implement policy changes to improve the quality of health services provided through the Ministry of Health.*

The Quality Assurance Project (QAP) has participated in the effort of the Cost Recovery in Health Project (CRHP), which aimed to enhance the quality, sustainability, accessibility, and affordability of health services for the Egyptian people. The CRHP is assisting the Government of Egypt in implementing policy changes, management, and quality of care improvements in selected Ministry of Health (MOH) hospitals and polyclinics. In 1993 QAP was asked to implement quality assurance activities in two CRHP pilot hospitals. The original scope of work called for a 2-year effort. QAP assigned a Resident Advisor to work with the project in Cairo during the first year. As the end of the first year approached, momentum and enthusiasm for Quality Assurance grew, and the Resident Advisor was asked to continue for a second year.

Initially, QAP worked primarily within the May 15 Hospital in Cairo. Shortly after the second year began, renovation work revealed major structural damage to the inpatient services buildings, which required closing all inpatient services; outpatient services continued. The hospital closing resulted in a temporary discontinuation of the quality improvement activities started by the Quality Assurance Project. Meetings with the Ministry of Health, the CRHP Directorate, USAID, and QAP culminated in a decision to focus quality assurance activities on a more national basis, the preparation of a national conference on quality of health care and the development of a national quality assurance society. At the end of the second year of the project, QAP finds itself working at the service delivery level with the May 15 Hospital, at the CRHP Project Directorate level to strengthen quality assurance activities within the CRHP, and at the national level, with the national conference and quality assurance society. As the Quality Assurance Project ends in Egypt, QAP personnel will continue working with their Egyptian counterparts in the new CRHP. The following paragraphs briefly summarize QAP Egypt's accomplishments during the past year.



## Activities at the Service Delivery Level

At the service delivery level, most of the work was with the staff of the May 15 Hospital. Although some quality assurance activities were conducted at El Kantara Gharb hospital, work at El Kantara Gharb hospital was postponed until the physical construction of the hospital was completed, a full complement of staff were working at the hospital, and a larger number of patients were admitted for care.

### *Planning for Quality*

To strengthen the support systems for quality improvement, the following activities were completed:

- The May 15 Quality Committee met at the beginning of the second year to review activities, set priorities, and develop a plan with time lines for the second year of quality assurance.

Priority areas for action for year 2 were: Obstetrics and Gynecology, Pediatrics, Emergency Room, the Outpatient Department, and continuing work in the Operating Room. Following this meeting, each of the priority departments developed quality assurance plans, which were then presented to the Quality Committee for approval prior to implementation.

### *Training*

Training activities have two aspects. One is the training of personnel in quality improvement knowledge and skills. The second is training needs of health care providers, identified by the quality assurance committees, which will result in improved patient care. The following training was provided for May 15 Hospital staff during year 2 of the project:

- A Quality Assurance Awareness training was requested and given for the Quality Committee. During the year, a number of new members joined the Quality Committee. This training was

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to provide them with quality assurance concepts and bring them up to date on accomplishments of the quality assurance program at the May 15 Hospital. Although El Kantara Gharb is not yet beginning a quality assurance program, an Awareness seminar was presented to Ministry of Health officials, hospital administration, and staff to familiarize them with quality assurance principles.

- Three May 15 Hospital Quality Committee members, accompanied by the QAP Egypt Quality Assurance Coordinator, participated in a 3-week participant training at the Makassed Hospital, Beirut, Lebanon. The purpose of the training was to provide Quality Committee members with practical, hands-on experience in the daily activities of a QA Department in a hospital setting.
- A workshop was convened for the May 15 pediatric physician staff for the purpose of introducing the concept of clinical practice guidelines and to obtain their consensus on pediatric guidelines prepared by selected May 15 pediatric staff, QAP Egypt and Bethesda staff, and expert pediatric clinician consultants.
- Two workshops on interpersonal communications were held, one for May 15 Hospital staff and one for El Kantara Gharb. Training materials available from QAP were translated into Arabic. Observations of staff communicating with patients were made following the workshop to evaluate the results of the workshop, and a survey was conducted to obtain patients' level of satisfaction with their physician visits.
- A CRHP Directorate staff member was assigned as a quality assurance coordinator to work with the QAP Egypt team. Dr. Mona Hozain traveled to the United States to attend a seminar on quality assurance provided by the Institute of Health Improvement at Harvard University. Following the seminar, Dr. Hozain attended the annual meeting of the American Public Health Association in Washington, DC.

She completed her visit with a week of structured visits to two hospital quality assurance departments in the Washington, DC, area to observe quality assurance in action.

- Recovery Room nursing skills were up-graded through an on-the-job training designed for two May 15 Recovery Room nurses. The training was provided by a local clinic.
- An on-the-job training was provided to the May 15 secretary by the QAP administrative assistant on secretarial skills needed for quality assurance activities. Examples are preparation for workshops, use of standard quality assurance forms developed by the Quality Committee, and documenting of Quality Committee agendas, minutes, and process improvement activities.

#### *Process Improvement*

Process improvement activities and the accomplishments of process improvement teams at the May 15 Hospital are:

- *Obstetrics:* In the first year, clinical practice guidelines were developed for obstetrical care, and indicators were developed to measure the quality of obstetrical care. This year, a medical record was developed to record care provided, as well as the patient's progress during labor, delivery, and post-delivery care. The record allows for monitoring of care and recording information which can be entered into an information system for assessing quality of care. Weekly case management sessions were held with QAP consultants to review selected obstetrical and gynecological cases to assess the appropriateness of patient management using the newly developed clinical guidelines as a reference for discussion.
- *Pediatrics:* Pediatric clinical guidelines were developed by May 15 staff physicians, QAP staff, and Egyptian clinical expert consultants. Following completion of the guidelines, a pediatric medical record was developed, and indicators were identified for use in monitoring

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the quality of pediatric care. Following consensus and adoption of the practice guidelines, pediatric staff physicians requested a refresher training course in the management of pediatric patients. A 30-day training curriculum was developed by QAP Egypt staff and consultants, and training was arranged with Cairo University Medical Center.

- *Operating Room:* In the first year of the project, operating room nurses attended an on-the-job training developed for them in conjunction with a collaborating hospital to upgrade their operating room skills. In the second year, ongoing post-training performance evaluations demonstrate that the nurses are performing more operating room skills appropriately, although variation in the performance between nurses remains.
- *Outpatient Department:* A process improvement team (PIF) has begun a patient flow analysis between the different outpatient department units.
- *Laboratory:* A laboratory process improvement team has been formed to address the issues raised in the study completed in the first year of the project. This study demonstrated that inappropriate tests and unused results of laboratory tests ordered accounted for 23% of the annual total budget deficit for the hospital laboratory. Due to the discontinuation of the May 15 Hospital activities, the PIF has not yet implemented solutions to the problems associated with the study results.

## Activities at the National Level

QAP Egypt efforts were directed toward assisting the Minister of Health to establish the Egyptian Society for Quality Assurance. The Society was registered as a legal non-profit society in Egypt, and the first meeting was held in June 1995. The mission of the Society is "to introduce the concept of quality assurance and continuous quality improvement to all sectors of health care services in Egypt." The goals of the Society are to: create awareness among health care providers in the community about the concept of quality assurance in health care; emphasize the

concept that the client, who is the health care beneficiary, is the cornerstone for all health care plans, and all efforts should be made to meet his or her needs and expectations; provide continuous quality improvement for health care in Egypt; and coordinate with relevant organizations to develop, improve, and mobilize human resources in the field of health care to enable them to provide high quality services.

Simultaneous to the establishment of the National Society for Quality Assurance, QAP Egypt staff, working closely with the CRHP and Ministry of Health, began preparing for the first Egyptian National Conference on Quality in Health Care. The conference was under the patronage of His Excellency Professor Dr. Ali Abdel Fattah, the Minister of Health, Egypt, and was held in Cairo in September 1995. The goal of the conference was to create public awareness required to increase demand for quality service in Egyptian society. Conference objectives were to: explain Quality Management (Q.M.) in health care and how to build institutions based on these concepts; exchange experience and knowledge with other countries that apply Q.M. in health care; review the methodology of implementing Q.M. in hospitals and other health care institutions; disseminate information and experience gained by CRHP and QAP; and encourage Egyptian researchers to introduce their papers and share their experience in the field of Q.M. in health care.

An intensive media campaign prior to the conference created awareness about quality in health care and defined problems related to quality. Publicity was also directed to the public about the work of the Ministry of Health in supporting quality in health care. Participants from other countries in the Middle Eastern region were invited to present their quality assurance experiences. Four hundred conference invitations were issued; however, interest was high, and 750 participants attended the first day of the conference.

# Nigeria



*Despite the political situation in Nigeria, the Nigerian Quality Assurance Initiative (NQAI) is currently engaged in the development of a collaborative implementation plan to meet the new requirements and expanded focus of the USAID Nigeria program. While maintaining its primary objectives in child survival, family planning, and HIV/AIDS prevention, USAID Nigeria has broadened its program to include an emphasis on the Northern States, women's decision making, institutional development and sustainability in NGOs, and adolescent and urban health issues.*

## Problem Solving

### *EPI Policy and Guidelines Development*

NQAI provided technical and financial support to the Government of Nigeria in the completion of the Nigerian National Expanded Program of Immunization (EPI) Policy and Practice Guidelines Document, an activity which concluded in November 1994. The Government of Nigeria approved, printed, and distributed this important document, which establishes the national standard of practice for all aspects of EPI vaccine acquisition, distribution, storage, and administration.

### *Integrated Baseline Health Survey*

USAID and its implementing partners (IPs) designed and are now implementing an integrated baseline survey of communities and facilities being served by USAID-supported projects. This coordinated, in-house activity involved technical inputs from all IPs, including NQAI. Field work on the survey began in October, and preliminary results are expected in January 1996.

### *National Vaccine Initiative*

At the request of USAID/Nigeria, the NQAI advisor worked with the CDC staff to develop an assessment of the status of vaccine supplies for the Nigerian EPI program, with special emphasis on assuring the adequacy of vaccines for private sector NGO partners.

### *Quality Assurance in the Private Sector*

NQAI provided support for the annual meeting of the Association of General and Private Medical Practitioners of Nigeria held in Olumo in March 1995. Dr. Stella Goings and Dr. William Jackman (Director/QAP, Bethesda) were featured at this conference, which launched a year of quality assurance activities for this professional organization.

### *Nigerian National Health Summit*

On September 6-9, 1995, the Federal Ministry of Health convened a national Health Summit in Abuja. Representing both USAID and QAP, Dr. Goings addressed a technical session on "Quality Assurance — Health Management in Nigeria." The Minister of Health, Dr. Madabukwe, attended this session and asked Dr. Goings to work on the National Work-planning activities after the conference. Dr. Goings contributed to an ad hoc committee to synthesize recommendations for the FMOH. Constraints resulting from decertification legislation prohibited greater involvement.



Photo by Tisna Ael Hoeszen Van Zutphen

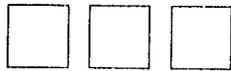
## *Short- and Medium-Term Technical Assistance*



*In addition to the five country programs included in Institutionalization, the Quality Assurance Project is involved in a number of short- and medium-term technical assistance efforts throughout the world. The length and scope of these efforts vary greatly*

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# Costa Rica

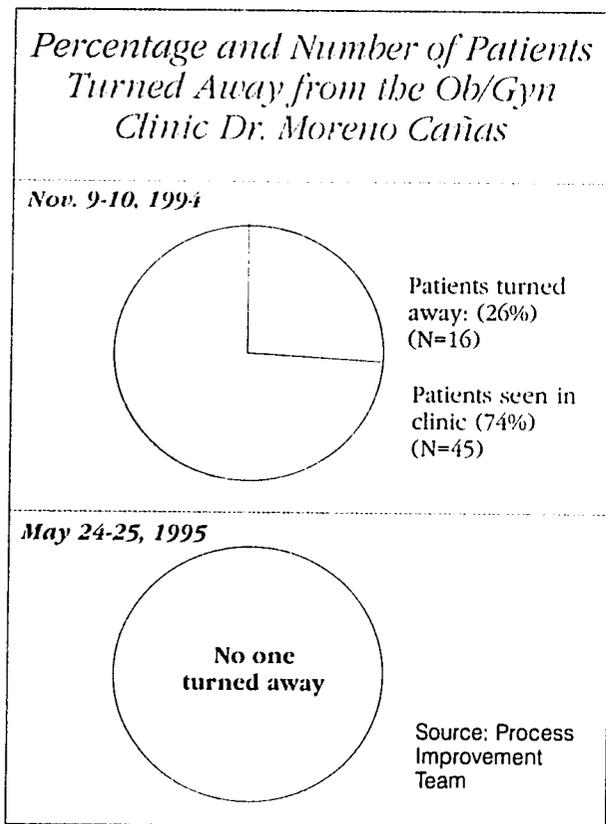


*In recent years, Costa Rica has undergone a fundamental shift in the organization of its health services delivery. Under the health sector reform plan, the Caja Costarricense del Seguro Social has taken over the delivery of all public health services in the country, both preventive and curative. The Ministry of Health is strengthening its role as the institution responsible for both the setting of standards and the monitoring of adherence to standards at the service delivery level. A new, integrated model of health care delivery accompanies this shift in responsibilities, based on the principles of decentralization of service delivery and increased involvement of both community and health personnel in service delivery decisions. Among its objectives, the reform plan has stated improved access, improved quality, and service delivery in accordance with the needs of the population.*

QAP, in collaboration with the Latin America and Caribbean Health Nutrition Sustainability Project (LAC HNS), has provided technical assistance over the past 2 years to introduce the methodology of process improvement to seven hospitals and clinics in one health region of the country, Central Sur. Resulting process improvement studies were expected to lead to solutions to concrete problems in each of these health facilities and to serve as a model to be replicated elsewhere in the country.

The methodology utilized in Costa Rica has started with the premise that the importance of continuous quality improvement can be convincingly demonstrated by the actual systematic improvement of particular problems which have been defined as priorities by health personnel. Training and support to the seven health centers was provided through a combination of workshops and coaching visits.

The teams applied a variety of tools to the various stages of process improvement: for the definition and analysis of the problem, they used brainstorming, flowcharts, and cause-and-effect diagrams. Based upon the selection of what each team considered to be the root causes of the problem, indicators were developed and data were collected to measure both the magnitude of the problem and the main causes. An analysis of the results of the data collected allowed the team to better understand the nature of the problem and thus better target the solutions being designed. Through brainstorming, the teams devised a number of possible alternative solutions. The solution considered the best was chosen using a multiple criteria decision matrix. After careful definition of all components of the solution and the establishment of a detailed implementation plan, solutions were introduced and new data were collected to measure the impact of the solution on the problem as it had been originally defined. Storyboards were used for the final presentation of the results.



## Results

Seven teams in all participated in the study: two hospitals, four clinics, and one regional health district. The participants from these health centers recognized the importance of patients' perceptions of the quality of services and identified problems that focused directly on the interaction between clients and health providers. The problems identified included: the high number of patients being rejected each day in the external obstetrics gynecology (Ob-Gyn) clinic; the long wait of diabetic patients for follow-up visits; the delay in the retrieval of medical records for patients in the outpatient clinic; the long lines to obtain an appointment to see a physician; the long pre-operative hospital stay; and the number of pediatric patients that were not seen each day. The district health office chose as its problem the slow response time for incoming correspondence.

As shown in the chart above, four of the seven groups were able to significantly reduce the problem as

originally identified. For example, the number of patients rejected in the Ob Gyn clinic was reduced from 26% to 0%; waiting time for medical records was reduced from 70 to 24 minutes; waiting time for diabetic patients was reduced from 5.7 to 3.7 hours.

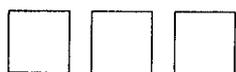
In the hospital which focused on the length of the pre-operative stay, the problem was reduced slightly, but more importantly, a second stage of the study has been initiated, involving a wider representation of staff, particularly those working in surgery.

In one clinic, the data collected showed that the patient population changed depending on the agricultural season. The influx of migrant workers during particular periods of the year made it clear that different improvements needed to be designed according to the time of year. The insights provided by the problem analysis have motivated the staff to look for variable solutions aimed at satisfying the needs of different population groups. Similarly, the hospital with the large number of pediatric patients rejected daily has decided to involve other regional health centers to further study the problem.

Several groups were able to identify additional benefits resulting directly from the implemented changes. In several clinics, waiting lines at other related services, such as the pharmacy, diminished. Patients and communities alike recognized the new mentality of health staff, and as a result started to become more directly involved in efforts to improve health care delivery in their communities. Where before the medical staff had been overworked and a demand had been placed to increase personnel, the new organization of health services led to a diminished workload for all. And finally, the teams involved in the process improvements have decided not only to monitor the improvements already achieved to ensure that they continue to function, but also to form new teams to improve different problems, thus instituting a continual effort to improve the care delivered in their health centers.

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# Cholera



*The Quality Assurance Project is carrying out QA activities related to cholera case management in Guatemala, El Salvador, and Ecuador. This initiative involves training two local managers to carry out Rapid Service Quality Assessments and to use program-specific information to develop effective improvement strategies. These objectives are being achieved through awareness-building, through QA training, through technical support in evaluating and improving case management, and through dissemination. Based in Ecuador, Jorge Hermida, M.D., is overseeing the cholera field activities.*

## Guatemala

In El Quiché and Suchitepéquez Provinces, implementation of interventions aimed to improve quality of care of cholera and acute diarrhea patients. Fifteen health centers are implementing interventions in fields such as improving access to oral rehydration therapy (ORT) in remote rural areas through trained community health workers; improving clinical case management at health centers; improving client education on oral rehydration solution (ORS) use and prevention of dehydration; improving laboratory capabilities for detection of *Vibrio Cholera* in stool samples; and implementing community oral rehydration units.

In February, technical assistance was provided by Dr. Jorge Hermida to the implementation of the following microprojects at El Quiché and Suchitepéquez departments: 1) improving acute diarrhea and cholera case management; 2) improving client counseling; 3) implementing community-based epidemiological surveillance; 4) improving access to ORT through community health workers; 5) improving cholera laboratory capabilities at local hospitals.

Data sources and procedures for monitoring quality indicators were established, in order to demonstrate effects of interventions.

During the third quarter, all of the 18 micro-projects planned in the Health Areas of Quiche and Suchitepequez were implemented. Jointly, INCAP-QAP produced a monograph dealing with the results of using quality assurance methodologies to improve treatment for cholera and acute diarrhea.



## *El Salvador*

Nine health centers are implementing interventions in aspects such as improving education to clients on ORS use and cholera prevention; improving clinical case management at health centers; improving hygienic practices of street food vendors; and implementing community epidemiological surveillance of cholera suspects.

In February, technical assistance was provided to the current ongoing implementation of the following microprojects in Chalatenango, El Salvador: 1) improving hygiene practices of food vendors; 2) improving acute diarrhea and cholera case management; 3) improving client counseling; 4) implementing community-based epidemiological

surveillance; 5) implementing an outpatient oral rehydration unit at Nueva Concepción Hospital.

During the third quarter, implementation of the oral rehydration unit at the Hospital Health Center of Nueva Concepción, Chalatenango, was concluded. The personnel of Health Units of Chalatenango were trained on the application of norms for handling cases of acute infant diarrhea. Four out of five micro-projects planned for improving quality in treatment of cholera and acute diarrhea were carried out.

In September, a final workshop took place in Chalatenango, El Salvador, to present methods used and results obtained from QA in cholera acute diarrhea activities. Health workers, who were part of several quality improvement teams, presented



Photo by Dennis Zaenger

*Through the presentations, it became evident that QA teams had accomplished significant improvements in case management, client counseling, use of antibiotics and other drugs, patient waiting times, and work in laboratories which for the first time in many years started to perform stool cultures to identify Vibrio Cholera.*

their experiences of applying QA methods to the improvement of clinical case management, client counseling, food vendor's hygiene practices, and community epidemiological surveillance.

Dr. Santiago Almeida, who represented the Ministry of Health in the meeting, expressed satisfaction with the results and recommended expansion of these experiences into the process of Health Sector Reform, which is currently being undertaken in the country.

As a result of these activities, Dr. Enrique Angulo, Director General of the Ministry of Health, invited Dr. Jorge Hermida of QAP/Center for Human Services (CHS) to a meeting to explore ways to begin to introduce quality assurance into the process of decentralization of the MOH.

## *Ecuador*

A national meeting was convened in Quito in early December to present the methods and results of the project, as well as to discuss the potential of the QA approach to support national MOH health policies. Thirty health professionals participated in the national meeting. Participants included representatives of MOH selected programs, as well as of international cooperation organizations including USAID, UNICEF, PAHO, and French Cooperation. Nine professionals, members of QA teams working at project field sites, presented their experiences and results working with the following projects:

- Improving cholera/acute diarrhea case management in Health Areas of la Troncal and Babahoyo.
- Improving patient counseling in cholera/acute diarrhea in Health Areas of la Troncal and Babahoyo.
- Improving cholera case management and laboratory capabilities at Babahoyo Hospital.

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- Improving patient waiting times at la Troncal Health Center.

Presentations included a description of how the steps of the QA cycle were put into practice in the specific context of each project, how teamwork was developed, and the results achieved.

Through the presentations, it became evident that QA teams had accomplished significant improvements in case management, client counseling, use of antibiotics and other drugs, patient waiting times, and work in laboratories, which for the first time in many years started to perform stool cultures to identify *Vibrio Cholera*. Participants divided in working groups also discussed how the QA approach could support MOH national policies, identifying strengths and obstacles.

Some conclusions of the groups include the following:

- The QA approach and methods can be learned and used without difficulty by management teams and health personnel at health districts and hospitals in Ecuador.
- The implementation of QA methods results in rapid and visible improvements in the quality of care.
- QA methods and tools can be an important support for the management functions at different levels of the MOH and its facilities.
- QA methods have a moderate cost, while its implementation can result in significant savings because of improvement of quality failures. In this way, QA methods improve the system's efficiency.
- QA methods contribute to raising the motivation of health personnel in their performance, through making objective their achievements and supporting teamwork.

Based on QAP's work with cholera patients in 1994, the Ministry of Health of Ecuador (MSP) solicited QAP's assistance in initiating a National Quality Improvement Program that would encompass a greater number of Provinces and be directed toward improving quality, not only in handling cases of cholera and acute diarrhea, but also in primary care services as a whole.

In May 1995, the Ministry of Health decided to integrate the Technical Committee of the MSP for Quality Improvement, which consists of the National Directors of Health Areas, Health Services, Fomentation, Epidemiology, and quality assurance consultants from OPS and QAP CHS. The committee is presided over by the Director General of Health Services. The principal function of this committee is to design and implement the Quality Improvement National Program. This committee has met regularly and has produced a document on the National Program, in which it describes its objectives, its organizational structure, its methods, and its schedule of events for 1995.

### Design of the National Program for the Improvement of Quality of Services

Members of the committee held regular discussions about the role of quality improvement within the health sector's reform process. In this sense, they designed the content and activities of the National Program for Improving the Quality of Services in order to support the reform process.

The National Program held a 4-day seminar on June 28, which was directed toward the National Directors of the MOH and the Provincial Directors of the five Provinces where the program began its activities. The objective of this seminar was to inform and win political support of the high management of MSP. The national and provincial directors met and approved the content and strategy of the National

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Program for Quality Improvement, and they also learned about basic methods to improve service quality.

In June, a seminar was held in the Province of Guayas for provincial facilitators. In attendance were 25 delegates from different health institutions, who would themselves become facilitators, supporting specific processes of quality improvement in the hospitals and health centers of their Province.

## Ecuador's National Program for the Improvement of Quality in Health Services

The QAP has continued to provide technical assistance to the National Committee of the Ministry of Health for the Improvement of Quality of Health Services. This technical group was appointed by the MOH to initiate a process of designing and implementing a National Program for Quality Improvement in Ecuador's MOH's services. This National Program is being designed to support the Health Sector Reform process, which is being implemented by Ecuador's government and supported by USAID Mission Ecuador's strategies.

A first plan of action has been drafted by the Committee, and initial field training activities have already been initiated in five Provinces: Guayas, Azuay, Chimborazo, Bolivar, and Pichincha. In each of these Provinces, QA activities have begun in two Health Districts selected by the MOH. QA activities in hospitals will be concentrated in emergency services.

Other international agencies such as PAHO, UNICEF, and UNEPA are also supporting this program, providing resources for technical assistance on a small scale. The MOH's National Committee coordinates the efforts.

As part of the program's activities, two Awareness seminars took place in the Provinces of Chimborazo

and Bolivar, each one attended by approximately 30 participants. These initial seminars were intended to provide provincial managers with a general overview of QA scope and methods, and to design activities to be implemented in the Province, including the selection of the Health Districts where QA activities will take place.

In August, a seminar for national QA facilitators was conducted in Quito. Each province participating in the program appointed two professionals, who began training as facilitators. Six professionals of the MOH central offices also began their training. These facilitators will provide local assistance to the QA efforts being developed at health units in Provinces. Instructors for the seminar were Dr. Pedro Saturno from Murcia University, Spain, and Dr. Jorge Hermida, QAP CHS.

## The Latin American Conference on Quality Assurance in Health Care

### *Background*

Based upon the promising results in the various programs in which quality improvement activities have been introduced and the commitment shown by health professionals involved in the programs, a regional conference on quality assurance was held in Quito, Ecuador, in August of this year. This first Latin American conference in quality assurance brought together 50 participants from 11 countries in the region. The conference was hosted by the Ministry of Health of Ecuador, and financed by USAID through the LAC HNS and QAP.

The pursuit of improvement in health care has been the cornerstone of USAID policies over the past decades. For many years, such improvement was defined only in terms of increased coverage and access. More recently, however, much progress has been made in broadening the concept of quality to include such dimensions as effectiveness of treatment, professional competence, cost-effectiveness, and focus on the client. Many health programs fall

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far short of providing quality services as reflected in indicators of morbidity and mortality, low use of services (particularly in the public sector), and rising costs. The success of the quality assurance methodology has been not only to demonstrate that positive changes can be brought about, but also to enable health professionals themselves to take responsibility for the outcome of their work in a sustainable fashion. The conference was a clear demonstration of the enthusiasm generated by this approach and the commitment to its wider application.

### *Conference Activities*

The Quito meeting combined technical presentations and country reports. The purpose of the technical presentations was to provide participants with an in-depth exposure to some of the pertinent issues related to the introduction of quality assurance in health care, such as the parameters involved in building a national quality assurance program, the relation of quality assurance to health sector reform, the importance of vision and personal commitment to quality, and the role of health managers in changing organizations to become quality-oriented.

In addition to the presentations, participants engaged actively in group discussions. These discussions focused on three main areas, namely the strengths and weaknesses of different approaches to introducing quality assurance in a country, the role of quality assurance within health sector reform, and ideas on how to establish a regional quality assurance network. The groups identified the need for central leadership, particularly politically, and urged for the continued documentation and study of the improvements in quality of health services and cost savings resulting from such improvements. There was widespread agreement on the interrelationships between ongoing health sector reform, the need to ensure better quality health services, and the complementarity of decentralization and ability of local health personnel to make improvements. A third component of the discussions focused on the desire to establish a

*The success of the quality assurance methodology has been not only to demonstrate that positive changes can be brought about, but also to enable health professionals themselves to take responsibility for the outcome of their work in a sustainable fashion.*

regional network for professionals interested and/or working in quality assurance. Participants expressed strong interest in continuing to share experiences in quality assurance and to utilize the available expertise and resources throughout the region. A working group was formed whose primary purpose is to establish a forum on the Internet, which will be managed from Ecuador. Additional proposals include the establishment of an Ibero-American Society for Quality in Health Care and the planning of a subsequent regional conference.

The participants also drafted a declaration explicitly formulating a summary of the discussions and plans to strengthen and further develop regional quality assurance activities. Among the recommendations were the establishment of an Ibero-American network of professionals working in quality and the introduction of quality assurance as a cornerstone of health sector reform programs. This declaration will be widely disseminated both within the countries who participated in the conference and through the Journal of the International Society for Quality in Health Care.

A report with the proceedings of the conference will be published in November and available from LAC HNS. Further information on the Ibero-American Network can be obtained through the Internet at [urc@jhermida.ccx.ec](mailto:urc@jhermida.ccx.ec).

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# Micronutrients Initiative



*The Methodology Refinement Group had as its original objective to develop and test measures to improve the quality of vitamin A programs. In response to USAID's financial support for QAP technical assistance to micronutrient interventions, our focus has switched from vitamin A methodology refinement to the institutionalization of QA techniques within micronutrient programs. Through methodology refinement research and technical assistance for institutionalization, QAP supports micronutrient programs by offering techniques for setting standards, assessing the current status of programs, planning for quality improvements, and problem solving.*

## Philippines: Iodization

Iodine deficiency is a major problem in the Cordillera Administrative Region of north-central Luzon. The five Provinces that comprise the Region have decided to attack the problem by means of an iodized salt program. Under the decentralized government scheme that began in 1993, however, each Province is free to determine its own approach. In November, the DOH Nutrition Service asked QAP to consider helping one or more of the Provinces build a quality assurance component into its program. Because of the difficulty of traveling in this mountainous region, it was decided that QAP would focus its activities in one Province, Benguet, and the nearby independent city of Baguio. Both Benguet Province and Baguio City were slated to begin receiving iodized salt from the same source, an iodization unit located initially in the main health center of Tuba municipality. (Iodization machinery was provided by UNICEF.) The iodization program was to be managed by the health center physician, in addition to his normal medical duties.

At the start of the project, QAP provided an overview of quality assurance approaches, methods, and tools for health care and non-health municipal planning staff from Tuba and from Benguet Province. Participants developed a flowchart, showing the entire process by which raw salt was acquired, iodized, and distributed down to the consumer level. At the workshop, the local QAP advisor assisted the group in developing a set of key indicators. They also worked out the specific data required to operationalize these indicators.

By February, salt production had ceased entirely because Tuba had not been conforming to the GOP Commission on Audit (COA) rules in procuring raw



Photo by Stewart Blumenfeld

### Benguet Province Iodized Salt Program

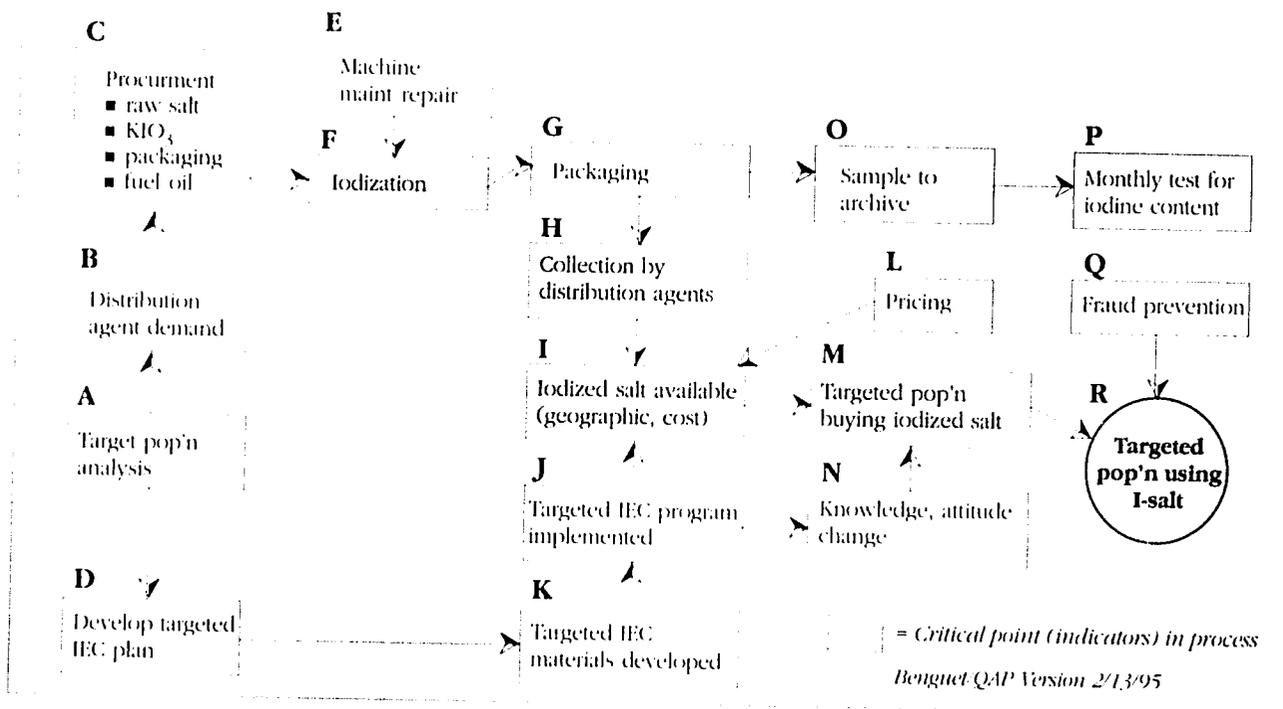




Photo by Dennis Zaenger

salt. A meeting with the Provincial Governor yielded a scheme which would place salt manufacturing and distribution in the hands of the Benguet Barangay Health Workers Association, an NGO. This transfer took place in June.

In April, QAP and DOH Nutrition Service staff facilitated a 2-day workshop in Baguio on QA Awareness and Tools. There were 21 participants representing each of the five Provinces of the Cordillera Region, the Regional Health Office, UNICEF, and the Nutrition Center of the Philippines. The workshop concluded with each of the provincial staffs producing its own iodization system model, flowchart, and indicators of perfor-

mance. Staff are now acting as consultants to Benguet and Baguio. QAP and Benguet staff are working with Data for Decision-making Project staff in Manila to incorporate seven key quality characteristic indicators into the standard data set used by the Provincial Health Office to monitor health services in the Province.

The salt iodization program in Baguio City began in June. Follow-up visits included the development of a flowchart of the manufacturing and distribution processes and the identification of a minimal appropriate set of quality assurance indicators. Tracking financial indicators was deemed essential to sustainable quality. In September, data collection began. Follow-up will occur in November, with training in problem solving using problems identified by the monitoring scheme as workshop examples.

## *Honduras*

The purpose of this collaborative project with the International Eye Foundation (IEF) is to carry out a study aimed at improving the quality of vitamin A capsule (VAC) distribution in a selected site in Honduras. QAP and IEF staff identified field sites, modeled the VAC distribution system, and identified weaknesses in three general areas of concern: logistics, health worker performance, and supervision.

The first part of this short-term assistance focused on assessing the quality of vitamin A services provided by IEF Honduras staff and MOH staff. Maria Francisco and Dennis Zaenger worked in Honduras with IEF staff to test and revise data collection instruments, train IEF staff to collect data, carry out data collection, and enter data.



Photo by Dennis Zaenger

## Results of Assessment

Within the community health clinics (CESAMOS), problems were found in the areas of health education, recordkeeping, supplementation of postpartum women, and supplementation of high-risk groups such as children with acute respiratory infection (ARI), measles, diarrhea, or severe malnutrition. Regarding the distribution of capsules through the community volunteers, problems were found in the areas of health education, supplementation of postpartum women, and supervision from Auxiliary Nurse Supervisors.

## Problem Analysis

In a 1-day workshop in March, all teams came together to prioritize problems identified in the assessment. Teams from the three participating CESAMOS decided to address the lack of adequate patient health education about vitamin A. Assessment data indicated that many health workers are not consistently delivering key vitamin A messages to mothers when treating or supplementing their children. The IFF team decided to address the problem concerning inconsistent delivery of vitamin A to postpartum women. A major focus of the workshop was data collection to verify cause of problems.

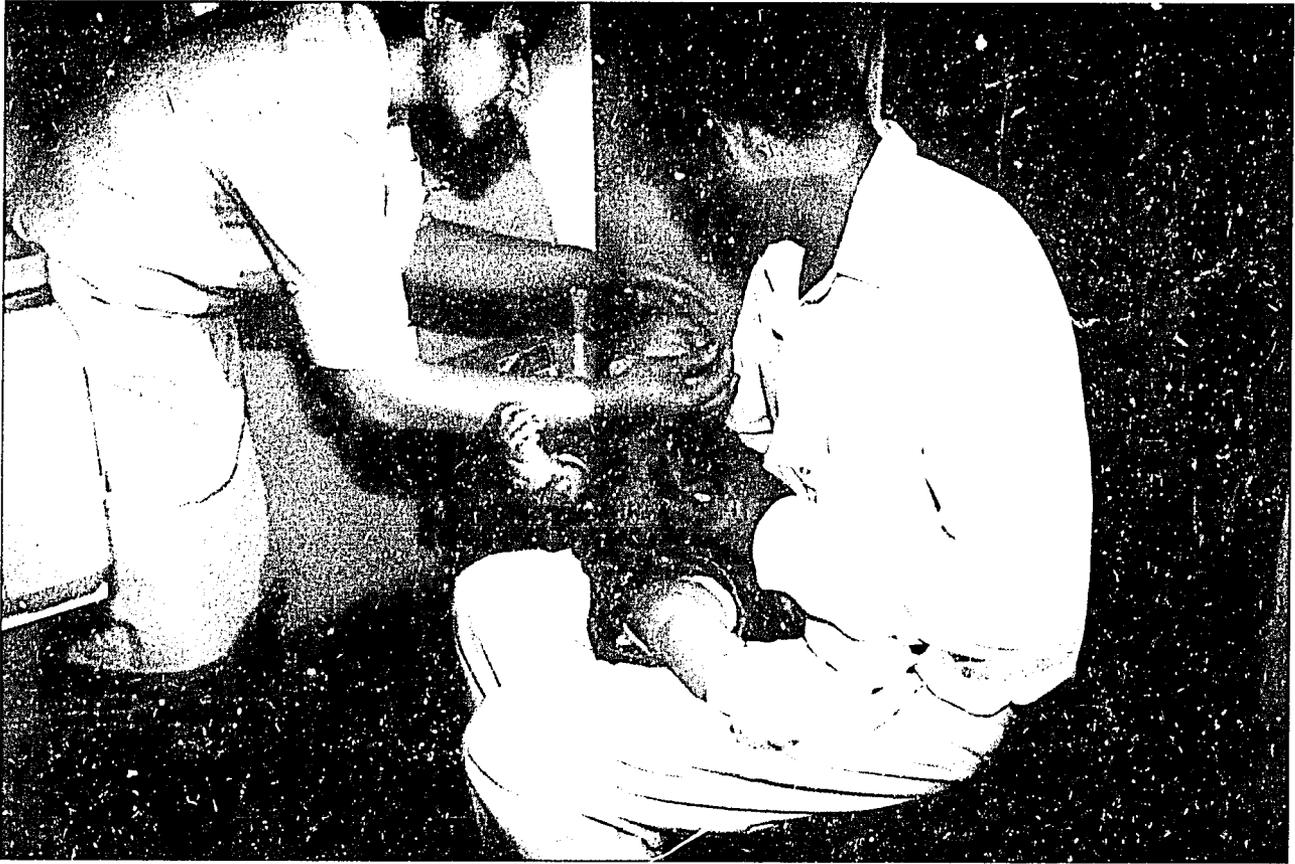


Photo by Dennis Zaenger

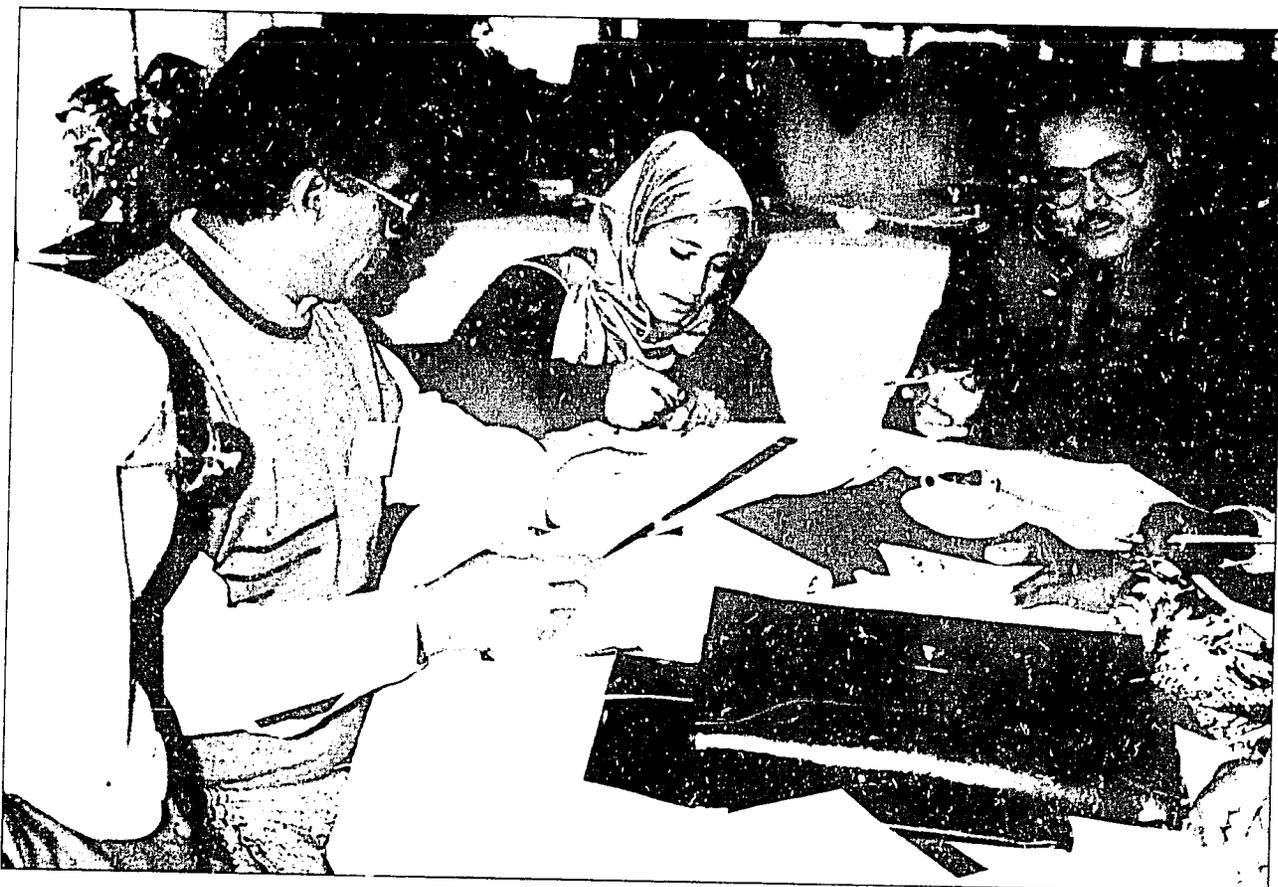
## Solution Development and Implementation

Dennis Zaenger traveled to Honduras in May to conduct a workshop on solution development and implementation for the CESAMO teams and the JEF Honduras team. Through teamwork sessions, each team analyzed data. Throughout the workshop, teams developed graphs and diagrams to illustrate the data and their problem-solving methodology and presented their findings to the other participants. Each team then brainstormed a list of possible solutions to address the causes of their problems, selected the best solution using a criteria matrix, and developed a plan for implementation, which included indicators to measure improvements. The teams returned to their workplaces to implement their solutions and monitor improvements.

## *Egypt*

During the fourth quarter of FY 1995, Dr. Mohamed Ibrahim Abdallah, local QA Coordinator, and Dr. Walid Abubaker, Associate Director, brought the Egypt QA Micronutrient program to a close. The objective of this program, which was initiated under a memorandum of agreement with the Egyptian MOH in March 1994, was to improve the quality and efficiency of micronutrient activities related to nutritional anemia in the Governates of Fayoum and Qena.

Over the course of the year, the QA Micronutrient project accomplished a great deal in the two Governates. Quality improvement teams were constituted and trained in state-of-the-art QA



techniques. In December 1991, a Team Building Workshop was held in Luxor, Egypt, focusing on issues of team development, decision making, and conflict management. Team members applied their newly acquired skills to several micronutrient initiatives in Upper Egypt.

Several areas were identified by team members as being in need of quality improvement. Local clinics lacked tracking systems for patient "dropouts," provided insufficient lab testing for iron deficiency disorder, and did not disseminate instruction or counseling about the proper treatment for this prevalent condition. All of these factors contributed to an extremely low level of client satisfaction. Quality improvement teams (QITs) endeavored to remedy this situation and ameliorate the quality of care through several interventions.

Micronutrient QIT interventions resulted in the development of standards and practice guidelines for iron deficiency disorder, and teams in Fayoum and Qena developed protocols for laboratory tests for iron deficiency. Overall, these teams were able to demonstrate a substantial improvement in mother's knowledge of nutritional needs. QIT interventions also resulted in a considerable improvement in client satisfaction with their provider's explanations of nutritional issues.

*Overall, these teams were able to demonstrate a substantial improvement in mother's knowledge of nutritional needs.*

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*The approach was planned to encourage staff to take responsibility for the quality of care in their hospitals by providing them with the QA skills needed to effectively monitor resolve and problems.*

## *Indonesia*

Since 1992, the Indonesian Association for Secure Contraception (PKMI) has been collaborating with the National Family Planning Coordinating Board (BKKBN), as well as the Quality Assurance Project (QAP) and the Private Sector Family Planning (PSFP) project, to strengthen internal supervision of service quality for long-term contraceptive methods. This USAID-sponsored initiative resulted in the development of a quality assurance model which was implemented in several pilot hospital family planning programs. The model, known as the Program Menjaga Mutu, or Internal Quality Assurance Program, involved a team-based approach to problem solving. The approach was planned to encourage staff to take responsi-

bility for the quality of care in their hospitals by providing them with the QA skills needed to effectively monitor and resolve problems.

PKMI, under the directorship of Dr. Azrul Azwar and with the accompanying support of BKKBN and the assistance of QAP and PSFP, provided periodic monitoring and technical support to 16 hospitals involved in the QA effort. This team of collaborators developed a reference manual, published in Indonesian, which describes the basic concepts and techniques for implementing quality improvements, and which was used to develop training courses and materials in the approach.

The PKMI pilot QA program officially ended in March of this year. QAP staff, Patricia MacDonald and Maria Francisco, completed a comprehensive final report which assessed the inputs, processes, and outputs contributed by QAP and PKMI as well as by the hospital teams. The table on page 57 summarizes this assessment.

The report concluded that although interest in quality is rapidly expanding and PKMI is greatly helping to "spread the word," much still needs to be done before the PKMI model can be fully institutionalized within the hospitals. Recommendations included further developing a core of skilled and fully committed staff and coaches within each hospital, strengthening problem-solving skills particularly in the areas of data gathering and analysis, and placing more emphasis on the planning and development of a hospital-wide (as opposed to service-specific) organizational structure for quality assurance.

At the close of the project in Indonesia, teams also completed documentation of their

problem-solving activities. Some notable results include the following:

- At Hospital A, interviews with women returning for their postpartum control visits and interviews with clinic staff indicated that 50% of potential family planning clients were returning home without receiving family planning services. Team members determined this was mainly due to the delivery of family planning services coinciding with vaccination services being provided on the same day. A subsequent adjustment to the schedule of clinic services increased the number of immunization and family planning days from 1 month to 2 months. In addition, the nursing staff from the maternity unit gave mothers referral cards to return to the clinic for family planning services. Since the solutions were implemented, the QA team has reported no more instances of potential family planning clients leaving the clinic without receiving services.

- Hospital D conducted a baseline assessment to determine the extent of post-tubectomy wound infection among post-partum patients. For 3 months the team monitored tubectomy clients, recording the number of infections occurring within the first week after surgery. They found that 6.6% of clients returning for their post-operative visit had a wound infection. The team subsequently determined that very few clients had been given information about what to do when they went home or were given incomplete information.

As a result, the team chose to have complete information about the tubectomy procedure, which was written in a simple manner on a leaflet, to be distributed to all relevant units within the hospital. In addition, staff were instructed to provide the leaflets to departing clients, noting on the forms any special instructions such as the date of a return visit

### *Assessment of Inputs, Processes, and Outputs*

	<b>Inputs</b>	<b>Process</b>	<b>Outcomes</b>
<b>QAP</b>	TA from QAP: <ul style="list-style-type: none"> <li>■ Field Visits</li> <li>■ QAP Materials</li> <li>■ Coach, Inter. Skills Course</li> </ul>	Ongoing Work with PKMI	QA Program Design QA Manual Training Materials PKMI Capabilities
<b>PKMI</b>	QA Manual Training Material PKMI Capabilities	Training of Teams and Hospital Directors TA Supervision	Hospital Director Support Team Capabilities
<b>Hospital Teams</b>	Team Capabilities TA Supervision from PKMI Hosp. Director Support	Problem-solving Documentation	Quality Improvements



or a medication schedule. The solution was monitored for a 3-month period, during which all clients returned for their follow-up visits, most with their leaflets. During the visits, doctors were seen to use the form to note a client's condition and give further instructions. Throughout the period, not a single case of post-operative wound infection was found. While the team was not sure what clients were doing differently at home, team members were satisfied that the extra information and counseling given to clients before they went home had resulted in a better outcome.

- To address the problem of incomplete medical records in the family planning clinic, team

members from Hospital A flow-charted the process, conducted observations and interviews with staff, and examined medical records. As a solution, nursing staff alternated responsibility for checking and ensuring the completeness of records. Once the system was established and operating, the team reviewed medical records for 3 months. The end result was a reduction in the proportion of incomplete medical records from 40% to 10%.

- Hospital C chose the problem of low knowledge about sterilization services among family planning acceptors, an investigation of which revealed weaknesses in counseling and the



use of educational materials. By adjusting the clinic schedule to create a special day for family planning, the team hoped to decrease the number of clients lacking such knowledge of sterilization services. During the first month of monitoring, only 33% of the clinic's clients adhered to the new schedule. This decreased to 25% in October, although on average, only one-third of the clients followed the new schedule throughout the solution testing period. In the end, however, the proportion of clients who did not know about sterilization dropped, from an average of 30% in October, to 16% in November, and 7% in December.

*The end result was a reduction in the proportion of incomplete medical records from 40% to 10%.*

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# Uganda



*Quality assurance activities in Uganda are the results of ongoing collaboration between Johns Hopkins University (JHU), the Ministry of Health, and Makerere University in Uganda. Achievements of the QA Management Programme within the first 18 months have included major improvements in the coordination and interaction among the divisional programmes at headquarters level, enhanced morale of the district teams, increased patient community satisfaction at the district level, strengthened communication and coordination between headquarters and districts, and greatly improved interaction among district level local government leaders and the district health management teams.*

## At Headquarters Level

In addition to providing a forum for coordination and interchange at Central Headquarters, the QA Management Project has enabled the identification and resolution of several important problems. For example, concerns with drug procurement and difficulties with decentralization funds were detected and addressed. CQI support visits found many districts unsure of how most effectively to purchase drugs under decentralization policies. In response, the Ministry of Health was able to establish recommended procedures rapidly for district use. In a second example, district health teams had difficulty obtaining funds allocated for health activities from district councils. Working with the Ministry of Local Government, the obstacles were overcome early in the decentralization process.

Planning and management activities of the QA Project throughout the reporting period were led by Professor Francis Omaswa, Director of the Quality Assurance Unit (QAU), and the many training activities were conducted by QAU members Drs. Henry Mwebesa, Gladys Baingana, and Vincent Ojuume. This planning and training for QA had the support of the World Bank.

## At District Level

One of the programme's principal accomplishments has been to bring together district health teams with local political and other leaders to help share responsibility for health services. QAP has also promoted integration of curative and preventive activities in districts. Hospital managers are now members of the district health teams in many districts. A smoother functioning referral system

## ***Problem Categories Selected by Districts for Resolution Using Quality Improvement Methods***

<b>Type of Problem</b>	<b>Number Districts Selecting Problem</b>
Management and administration, including financial management	21
Quality of clinical and preventive services	20
Collection and use of information, especially for planning purposes	13
Patient or employee satisfaction	6

*Note: Some districts selected two problems.*

from health units to district hospitals has been one of the first benefits of this cooperation.

The development of district management capacity to identify and solve quality problems has been a primary goal of the programme. The table above shows the nature of problems which district health managers identified for resolution during the first 18 months of the Uganda programme.

Among the management problems commonly tackled were those related to cost-recovery schemes. Using quality management methods, weak steps were located and strengthened. Standard methods were established to allocate a proportion of funds to supplement salaries of health workers (whose pay is low and often irregular), to provide maintenance to facilities, and to purchase supplies. A number of district teams have noted reduced absenteeism among health workers, an increase in morale, and increased patient satisfaction with health center

services. By monitoring records through the system established, district health teams are able to correlate fees recovered with numbers of patients seen and to better estimate drug requirements.

### **Outcome in Three Districts**

#### *Maternal Mortality in Jinja District*

Maternity staff at Jinja hospital and the district health team were concerned about the high mortality rate among women referred from the 30 health units within the district. Records from 1993 showed 17 of the 126 (13.5%) women referred had died after arrival at Jinja hospital. The principal causes were found to be hemorrhage (antepartum and postpartum), ruptured uterus, and postpartum sepsis. Interviews with peripheral health unit personnel revealed that many did not routinely identify high-risk pregnancies and some could not identify patients in need of urgent referral.

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To solve the problem, hospital staff and the District Medical Officer began an educational campaign for outlying units which stressed the early recognition and prompt referral of high-risk pregnancies and obstetrical complications. These messages were conveyed through workshops and visits to health centers by district health managers. Hospital staff strengthened their recordkeeping system and, with the District Medical Officer, established a monthly outcome record for patients referred for obstetrical complications.

In the 12 months which followed initiation of this programme, the number of women referred for obstetrical complications increased from 126 to 274 and maternal deaths were reduced from 17 (13.5%) to 8 (2.9%). Maternity ward staff established that the education campaign has resulted in earlier referral of many obstetrical complications.

#### *Measles Outbreak in Arua District*

In spite of an active immunization programme in Arua district, the number of measles cases reported by health centers each month continued to rise to 70-80 cases each month. The district health team identified weakness in the district cold chain, problems with diagnostic accuracy, and a poorly functioning information system as problems to address. The team carried out a systematic analysis of these factors and put into place a number of corrective measures. Over the next 4 months, the number of cases dropped dramatically, and no cases have been reported in the last 3 months.

#### *Long Waiting Times at Masisaka Hospital OPD*

Although outpatients reported early to the Masisaka hospital, many did not leave until very late in the afternoon, and then often without treatment. This was a source of increasing dissatisfaction to both patients and staff. Using the Ishikawa diagram, multiple potential causes were identified. Examination of outpatient records, observing patient flow, and discussing the problem with patients and key staff revealed six areas which the hospital staff felt

could be addressed immediately. These included low morale among health workers, shortage of supplies, inadequate supervision by hospital management, poor patient flow, and inefficient dispensing of drugs. A work plan was developed to address each of these problem areas. The hospital management actively sought participation of OPD staff in the problem-solving process. At the end of 5 months, long delays had been eliminated, and patients arriving in the morning were treated and released by noon. Reorganization of flow eliminated overcrowding at certain steps in the outpatient process. Both patients and staff felt satisfied with the results. In the 6 months following these improvements, there was a 28% increase in utilization of OPD services.

### Methodology Refinement and Institutionalization TB Control

Plans for a study have been developed to test an intervention that will train district TB control programme team members in the specific QA techniques designed to supplement the Uganda National TB Control Programme approach. Although the trial has been postponed, the development of the study design itself is an important advance, and because of the unusual circumstances in Uganda, it represents the first rigorous controlled, randomized trial of quality assurance management methods that we know of. The unit of randomization and intervention is the district, and the study is planned to include 26 of the 40 districts in Uganda. The outcome measures will be the proportion of registered TB patients who complete treatment. The average completion rate in the 26 districts was 40% in 93-94, but with wide variation. Districts will be paired by completion rate and randomized to receive QA training or not. If the QA training leads to a significant improvement in completion rates, it will be incorporated as part of the TB Control Programme routine. Once incorporated, there should be no overall increase in costs; indeed, because there should be improved efficiency in aspects of the service, there may be cost savings.



Photo by Dennis Zaenger

## Zambia



**I**n the next quarter, QAP will assist the Quality Assurance Unit of the Health Reform Implementation team to further institutionalize quality assurance at the district level in Zambia. The assistance will include three phases: an assessment and problem identification phase; a data analysis and problem solution phase; and a re-assessment phase. Ideally, six primary health clinics and a district hospital will be included. Hospital referrals are an essential part of an integrated case management approach, and it is imperative to determine the level of quality provided by the hospital.



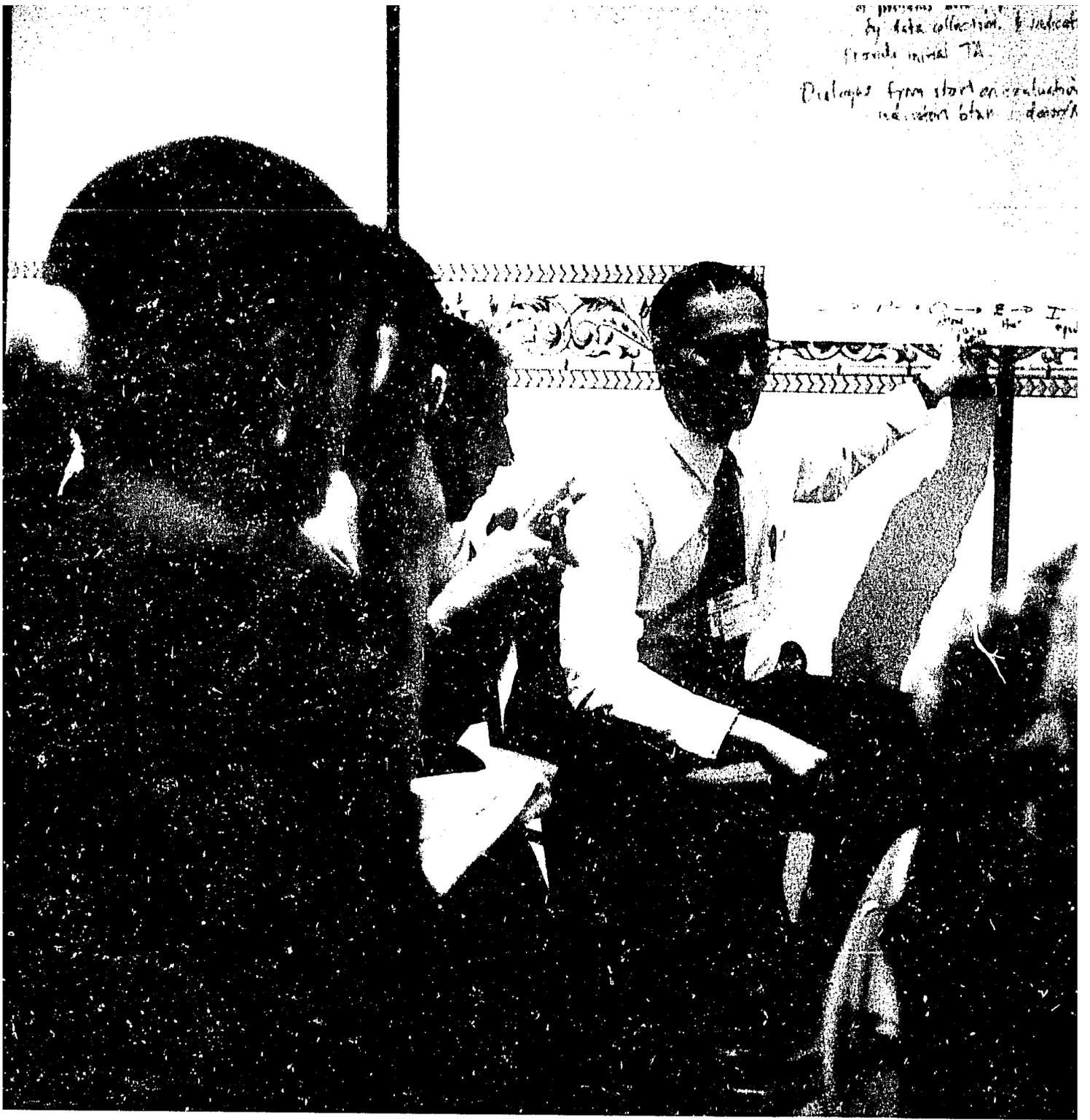
Photo by Jolene Renke

## Poland

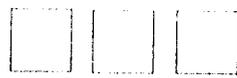


Over the past several years, USAID has provided assistance to the Government of Poland in quality assurance, in the form of training and other support, to help develop a National Center for Quality

Assurance and a hospital accreditation program along the lines of JCAHO's. At the invitation of USAID Warsaw, QAP CTO Jim Heiby and QAP carried out an assessment of quality assurance in Poland's health care system, which is changing from a largely state-run system to a system based on a mix of private and government providers organized in a variety of ways (fee for service, HMO and other managed care, and private and state-sponsored insurance). Following a brief assessment of existing QA policies, structures, and activities, the team will design a short, well-circumscribed activity to demonstrate the process of quality assurance, based on quality management principles. Concurrent with the end of the demonstration activity, the team will propose a 2- to 3-year program of training and demonstrations aimed at strengthening the institutionalized capacity for modern quality assurance in the country. The initial 2-week visit is scheduled to take place in October 1995.



## *Training*





*Training is critical to the achievement of the QAP objectives. It is seen as the first step to attaining a level of institutionalization needed for a successful QA program. It has been used effectively to transfer QA skills and knowledge as well as to increase awareness and enthusiasm for the QAP approach. At this point in the project, most work has shifted from training to ongoing technical assistance, supporting countries as they implement QA skills learned in their prior training.*

**T**his has been another exciting and active year for training. Building upon previously developed training programs, we collaborated with other cooperative agencies, streamlined our training development process, and developed an implementation planning workshop, an intermediate skills course, and an intermediate team building course, as well as revising and updating our standard courses. For specific information about country and program training, please refer to the appropriate sections in this report and to Appendix A.

One of the activities undertaken this year has been the development and field testing of the Training Development Manual. This unique manual is designed to help staff and short-term consultants follow a systematic set of steps to develop and revise task-based training. The manual guides the user through the process of analyzing tasks to be taught, the potential participants, the environments where the training will be given, as well as where the job will be performed. Using this information, the training developer writes, designs, and develops training that will help the participants transfer their new QA skills to their job. The central point to using the training manual is to ensure the most effective and efficient training by focusing on skills

and knowledge required to meet the needs of personnel involved in QA. One of our major objectives is to make learning QA as job-relevant as possible. The training manual is currently being field tested.

To further increase the efficiency of the training development process and to ensure the consistency of the content, all training materials are being stored electronically and as hard copies in our training library. Copies of training materials are systematically cataloged and archived using electronic storage and retrieval software and hardware. The computerized training directory allows us to quickly find what we previously developed on any given topic and revise it. Training materials developed early in the project were reviewed to determine their relevance for future training. Those deemed pertinent were archived for future reference. Hard copies of all training are also cataloged by technical content and by geographical area. This allows the country personnel to easily determine what was presented earlier and maintain a consistency for future training. The Training Resource Library has significantly shortened the time required for developing and producing training materials by eliminating costly rework. Materials developed this year are highlighted below.

QAP Bethesda-based staff also conducted a QA awareness course for USAID personnel through a special training contract with CHS. This contract enabled CHS QAP staff to provide training to a number of key USAID Washington-based staff who administer a variety of projects in health, nutrition, and population. Training topics included the evolution of quality assurance, the state of the art in developed and developing countries, quality design, setting and communicating standards, monitoring for quality, quality improvement, cost and quality, and institutionalization of quality assurance. Since many participants expressed an interest in continuing training in quality assurance, the CHS-URC staff provided information about various programs available.

# Summary of Quality Assurance Training Activities

October 1994 - September 1995

Course	Costa Rica	Egypt	Haiti	Honduras	Jamaica	Jordan	Niger	Palestine	Philippines	Trinidad & Tobago	Uganda
1. <b>QA Awareness:</b> an introduction to QA concepts, tools, techniques, and problem solving		■				■■■■ ■■■■	■	■	■■	■	
2. <b>Advanced Supervision:</b> teamwork, data analysis, leadership, management, administration							■■				
3. <b>Quality Design and Planning:</b> develop vision and implementation plans for QA programs					■■■■ ■■						
4. <b>Problem Solving/Process Improvement:</b> indepth study of the process improvement cycle	■			■ ■					■		
5. <b>Coaching/Team Building:</b> coaching skills, team development, team dynamics, process improvement		■				■■	■				
6. <b>Interpersonal Communication Skills:</b> enhance physician IPC skills to improve interactions with patients		■■								■	
7. <b>Standard Setting:</b> methods of setting and communicating standards, developing monitors		■									
8. <b>Training of Trainers:</b> adult learning principles applied to QA training						■					
9. <b>Monitoring:</b> methods of QA monitoring, planning monitoring systems	■		■				■■				
10. <b>Customer Service:</b> customer focus, communication skills, identifying client needs						■■■■ ■					
11. <b>Practicum:</b> select participants work directly with experienced QA coordinators in the US and Beirut	■■■■ ■					■■■■ ■■■■ ■					
12. <b>Johns Hopkins Graduate Course:</b> Quality Management Methods for Developing Countries											■

■ Number of times course was given.

# Quality Assurance Training Activities

October 1991 - September 1995

<b>QA Awareness: an introduction to QA concepts, tools, techniques, and problem solving</b>			
<b>Date</b>	<b>Location</b>	<b>Participants</b>	<b>Comments</b>
10/94	Philippines	Benguet Province salt iodization program staff and Cordillera Regional Health Office staff	
11/94	Jordan	Amman General Health Directorate physicians	
12/94	Trinidad Egypt	Senior Ministry of Health officials QA Committee, May 15 Hospital, new members	
1/95	Philippines Jordan Jordan	Manila City Health Department TB service staff Al-Hussein Hospital Salt staff Shuna Health center staff (3 sessions)	
2/95	Niger	Tahoua region peripheral health workers	
5/95	Jordan Palestine	Al-Hussein Hospital Salt staff Representatives from Palestine Council of Health, Ministry of Health, WHO and UNICEF	Collaborative work with other organizations
6/95	Jordan Jordan	Al-Hussein Hospital Salt staff Balqa'a Health Directorate nurse aides and practical nurses	
7/95	Jordan Jordan	Al-Hussein Hospital Salt staff Balqa'a Health Directorate nurses and midwives	
2/95	Haiti	Executive Directors and senior staff from major health/family planning NGO's	

<b>Monitoring: methods for QA monitoring, planning monitoring systems</b>			
<b>Date</b>	<b>Location</b>	<b>Participants</b>	<b>Comments</b>
2/95	Haiti	Staff of Eyecare/Citymed	
6/95	Costa Rica	Social security hospital and regional health management teams	
9-11/95	Niger	District medical officers and clinic managers	Regular updates

**Coaching Team Building:** *coaching skills, team development, team dynamics, process improvement*

Date	Location	Participants	Comments
1/95	Jordan	Ministry of Health and pilot area staff	Intermediate course
5/95	Niger Egypt	Dispensary staff Ministry of Health officials	Conference done with collaborators from Institute for Healthcare Improvement, Harvard University; audience from Middle East
8/95	Jordan	Balqa'a General Health Directorate staff	

**Problem Solving Process Improvement:** *indepth study of the process improvement cycle*

Date	Location	Participants	Comments
12/94	Costa Rica	Staff from Ministry of Health, social security, one region	
3/95	Honduras	International Eye Foundation and teams from 3 MOH clinics	Introduction, planning data collection
5/95	Honduras	International Eye Foundation and teams from 3 MOH clinics	Problem analysis, solution development
8/95	Philippines	Salt iodization staff from Baguio City, 4 other provinces in Cordillera Region, UNICEF staff, Nutrition Center of Philippines staff	

**Advanced Supervision Skills:** *team work, data analysis, leadership, management, administration*

Date	Location	Participants	Comments
12/94 & 1/95	Niger	Integrated district supervisory teams, Tahoua staff (2 sessions)	

**Quality Design and Planning:** *develop vision and implementation plans for QA programs*

Date	Location	Participants	Comments
11/94 12/94 2/95	Jamaica	Managerial staff from 6 regional hospitals (6 sessions)	

***Customer Service: customer focus, communication skills, identifying client needs***

<b>Date</b>	<b>Location</b>	<b>Participants</b>	<b>Comments</b>
6/95	Jordan	Balqa'a Health Directorate senior physicians Balqa'a Health Directorate nurses, physicians, clerks	
7/95	Jordan	Balqa'a Health Directorate senior physicians Al-Hussein Hospital, Salt physicians	
8/95	Jordan	Al-Hussein Hospital, Salt general staff	

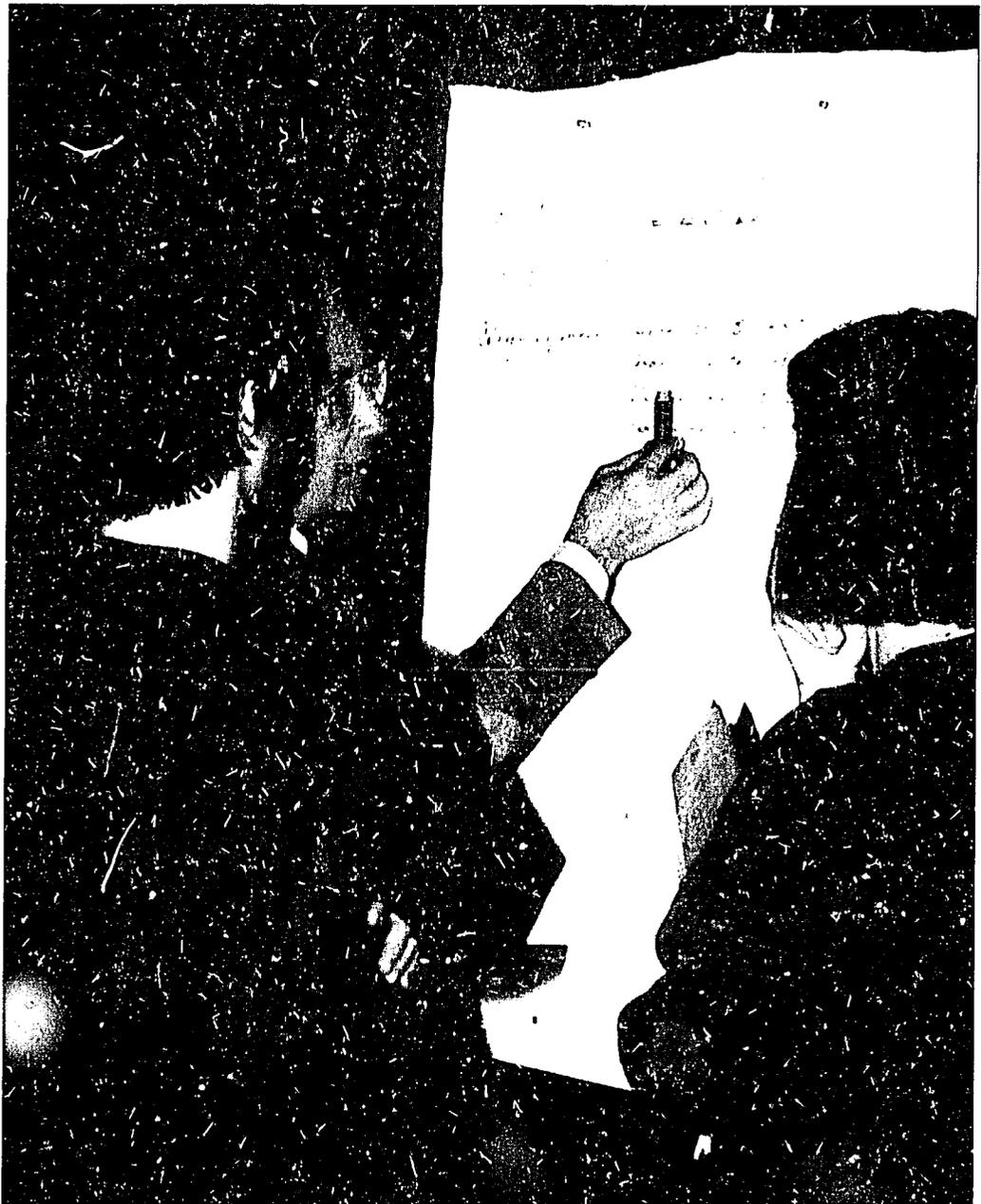


Photo by Jolee Remke

***Interpersonal Communication Skills: enhance physician IPC skills to improve interactions with patients***

<b>Date</b>	<b>Location</b>	<b>Participants</b>	<b>Comments</b>
1/95	Egypt	El-Quantara Hospital, Ismailia physicians  May-15 Hospital, physicians	Conducted by Agency for Educational Development (AED)  Conducted by AED
4/95	Trinidad & Tobago	Ministry of Health, counties of Caroni, Victoria and St. George's West physicians	Conducted by AED

***Standards setting: methods of setting and communicating standards, developing monitors***

<b>Date</b>	<b>Location</b>	<b>Participants</b>	<b>Comments</b>
3/95	Egypt	May 15 Hospital, pediatric physicians	Clinical guidelines introduction

***Training of Trainers: adult learning principles applied to QA training***

<b>Date</b>	<b>Location</b>	<b>Participants</b>	<b>Comments</b>
4/95	Jordan	Ministry of Health and pilot area staff	

***QA Practicum: select participants work directly with experienced QA Coordinator***

<b>Date</b>	<b>Location</b>	<b>Participants</b>	<b>Comments</b>
11/94	Rockville, MD	Egypt - QA Coordinator assigned to QA Project from Cost Recovery Program	
7-8/95	Beirut, Lebanon	Egypt - May 15 Hospital Quality Council	
8-11/95	Oklahoma City, OK Alexandria, VA Washington, DC	Jordan - 9 Ministry of Health staff assigned to work in QA jobs	

*Quality Management Methods for Developing Countries: Johns Hopkins University Course*

<b>Date</b>	<b>Location</b>	<b>Participants</b>	<b>Comments</b>
4-5 '95	Uganda	Graduate students at the Makerere University	Conducted by JHU staff
6 '95 & 9-11 '95	Baltimore, MD	JHU graduate students	Conducted by JHU and QMP staff



Photo by Dennis Zaenger



Photo by Dennis Zaenger

*Dissemination*





*The three goals of QAP dissemination are: 1) to raise awareness of the importance of quality improvement in health care management; 2) to demonstrate to program managers and decision makers various approaches for integrating quality assurance measures into an existing program; and 3) to explain to the international health community the discoveries and advances that the QAP is making in the field of PHC quality improvement. The dissemination channels the QAP has used to meet these goals include the distribution of printed materials, conference presentations, publications, and interpersonal networking.*

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As the first phase of the project comes to a close, increased emphasis is being placed on reporting and disseminating results not only within the United States but, more importantly, to the field, where the materials are of the greatest value. QAP hopes to share the methodologies, lessons, and insights gained throughout the project.

QAP's newsletter, the QA Brief, has continued to be published and disseminated as scheduled. The latest issue, which was published in July 1995, offers a synopsis of the lessons learned through application of Total Quality Management principles and team problem-solving methodology. Lessons are taken from specific country interventions in QA planning, process improvement, training, dissemination, and institutionalization. As the project reaches closure, more lessons will come to light. The final QA Brief, scheduled for publication next winter, will address final results and additional insights into the QA Project.

The QA Report series, which presents the methods and results of project activities in QA methodology refinement and technical assistance, was disseminated in conjunction with the QA Brief mailing. QA Reports were written on the following topics in July and August:

- "Development of a National Program for the Evaluation and Improvement of Quality in Chile"
- "Evolution of the Quality Assurance Project in Egypt"
- "QA Methods Improve Quality of Care and Reduce Costs in Cholera Acute Diarrhea in Local Health Districts in Ecuador"
- "Improving Quality of Cholera Case Management in a Hospital Setting in Ecuador"

**For further information about QAP publications, please contact:**

The Quality Assurance Project  
7200 Wisconsin Avenue, Suite 600  
Bethesda, Maryland 20814  
301-654-8338

The following three articles that describe the work in Ecuador were written by Dr. Hermida and the Ecuadorian QA team of the Ministry of Health:

- "QA Methods Improve Quality of Care and Reduce Costs in Cholera and Acute Diarrhea in Local Health Districts in Ecuador."
- "Reducing Patient Waiting Times through QA Methods in La Troncal Health Center, Ecuador" (awaiting publication in the PAHO Bulletin).
- "Improving Quality of Cholera Case Management in a Hospital Setting in Ecuador."

A Tahoua-based quarterly bulletin, ADER Santé, was created, and five issues have been distributed widely in Niger. This publication provides updates on health activities and the health situation, shares QA progress, and is a forum for technical updates.

The QAP Egypt staff were instrumental in publishing Arabic versions of Quality Assurance of Health Care in Developing Countries, the QA Awareness Workshop Manual, Ob Gyn Clinical Guidelines, Pediatric Clinical Guidelines for Selected Conditions, training materials for the Interpersonal Communication Workshop, training materials for Quality Customer Service, and the QAP Problem Solving Manual.

In Jordan, an Arabic Quality Awareness manual was compiled and distributed by project and MOH staff. The project's Problem Solving manual was translated into Arabic by MOH staff, and it was published. Several QA posters were created by project staff and distributed throughout Jordan.

### The International Society for Quality Assurance (ISQUA) Conference

QAP organized a pre-conference seminar on the applicability of different quality assurance methodologies in developing countries. The meeting was jointly sponsored by the Canadian 1995 ISQUA Organizing Committee, WHO PAHO, USAID, the Quality Assurance Project of the Center for Human Services, and the National Organization for Quality Assurance in the Netherlands (CBO). The main purpose of the meeting was to provide participants with the opportunity to exchange ideas and experiences, in small group discussions, on problems and solutions encountered in their efforts to implement improvement of services through a variety of QA methodologies.

A prize was awarded for the presentation of a paper co-authored by Nadwa Rafeh, PhD, MPH; Bérengère de Negri, PhD; Samy Gadalla, MD; Yvonne Sighom, MD; and Sayed Shehata, MD, entitled "A Strategy to Improve Patient Satisfaction in a Public Health Hospital in Egypt." The names of all prize winners will be announced in the next issue of the International Journal for Quality in Health Care, and an abstract of the paper will be published.

Dr. Sayed Shehata, Quality Assurance Coordinator of the May 15 Hospital, presented the Interpersonal Communications (IPC) Study. The Quality Assurance Project IPC study is a joint effort between the Academy for Educational Development, The Johns Hopkins University School of Hygiene and Public Health, and the Center for Human Services. The

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presentation was well received and was awarded the prize for the “Best Paper from Africa and the Middle East.” This is the second year in a row the QAP/ Egypt and May 15 Hospital staff have won this award for their presentation at the ISQua annual conference.

In addition, a prize was awarded for a poster entitled “How Quality Assurance Facilitates a Decentralized Health System: The Case of Niger,” by Lauri Winter, MSc, MPH; and Gaël Murphy, MA, MPH.

Dr. David Nicholas presented a paper on Al-Hussein Hospital’s QA experience in Jordan, and Dr. Nuha Ikhdair, of Jordan, spoke about the MOH QA program. Dr. Ikhdair also presented a brief on the Jordan QA program at pre-conference.

The following abstracts were submitted:

- Abubaker, Walid, MD; “Outcome Measurement through Process Improvement Teams, Egypt.”
- Al-Assaf, A.E., MD, CQA; Al-Ayed, Fuoad, MD, MHA; and Al-Qhewi, Sulaiman, MD; “Country Report: Jordan.”
- Al-Assaf, A.E., MD, CQA; “An Effective Information System for Measuring Health Outcomes Nationally.”
- Al-Assaf, A.E., MD, CQA; “The Organization of National Health Care Quality Directorate.”
- Binns, Mimi, MA; Veldhuyzen van Zanten, Tisna, PhD; Holley, John, MBA, MPH; and d’Avis, Juan, MD, FACS; “Linking Quality and Costs: Quality Improvements at the Children’s Hospital, La Paz, Bolivia.”
- Brown, Lori DiPrete, MSPH; “Quality Assurance in Developing Countries: Guidelines for Developing a QA Program.”
- MacDonald, Patricia, RN, MPH; and Stinson, Wayne, PhD; “Measuring Midwife Performance: Studies of Peer Review and Self-Assessment Methodologies.”
- Mariani, Elizabeth B., MS; “A Guideline for Applying Quality Assurance Methods to the Management of Training.”
- Hermida, Jorge, MD, MPH; “QA Methods Improve Quality of Care in Local Health Districts in Ecuador.”
- Murphy, Gaël, MA, MPH; and Winter, Lauri, MSc, MPH; “The Role of Supervision in Quality Assurance in Niger.”
- Rafeh, Nadwa, PhD, MPH; “Improving Operating Room Nursing Services at a Public Hospital in Egypt.”
- Rafeh, Nadwa, PhD, MPH; de Negri, Bérengère, PhD; and Raslan, Ismail, MD; “A Strategy to Improve Patient Satisfaction in a Public Hospital in Egypt.”
- Veldhuyzen van Zanten, Tisna, PhD; Holley, John, MBA, MPH; Binns, Mimi, MA; d’Avis, Juan, MD; “Improving Cost and Quality: Introducing Quality Improvement Methods in a Tertiary Hospital in Bolivia.”
- Winter, Lauri, MSc, MPH; and Murphy, Gaël, MA, MPH; “How Quality Assurance Facilitates a Decentralized Health System: The Case of Niger.”

## Other Conferences and Seminars

QAP staff members attended this year’s National Center for International Health (NCIH) Conference on Violence as a Global Health Issue: Responding to the Crisis. CHS was represented by a booth containing dissemination materials from the QAP, LAC HNS, and the Domestic Development Group. The booth itself

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featured maps and photographs detailing QAP country projects.

QAP staff presented a number of papers at the 1994 conference of the American Public Health Association which focused on public health and equity. The meeting was held in Washington, DC, from October 30 to November 3. One panel was devoted exclusively to Quality Assurance in Developing Countries, and most of the papers were presented by QAP staff. These included the following:

- "Model for Implementation of a Quality Assurance Program in a Public Hospital in Egypt," Nadwa Rafeh, PhD; Samy Gadalla, MD; Norma W. Wilson, DrPH.
- "Improving the Quality and Efficiency of Hospital Health Care Services in Guatemala," Tisna Veldhuyzen van Zanten, PhD.
- "Making Commitments to Quality Health Care: Developing a Sustainable Program for Quality Assurance in Chile," Lori DiPrete Brown, MPH.
- "Peer Review as a Model for Improving Service Quality: The Experience of the Indonesian Housewives Association," Patricia MacDonald, RN, MPH; Margie Abnan, MD.
- "Quality Assurance Approaches to Cholera Prevention Management," Jorge M. Hermida, MD; Lori DiPrete Brown, MPH; William J. Davis, MA.

Drs. Nadwa Rafeh and Samy Gadalla served as faculty for the Middle Eastern regional conference, "The Quality Management Program for Health Care Organizations in the Middle East," sponsored by the Institute for Health Care Improvement from Boston, Massachusetts. The conference was held in Egypt with participants representing a number of Middle Eastern countries. The QAP/Egypt staff assisted as faculty and presented their work in the QAP project.

A paper on Jordan QA activities was presented at the WHO Eastern Mediterranean Regional Countries meeting on Quality in Primary Health Care in Amman in December 1994.

A paper on Jordan QA activities was presented by Dr. Osama Samawi at Egypt's First National Conference on Quality in Health Care in Cairo in September 1995.

Television coverage of the inauguration of the Family Care Model Center in Salt, Jordan, showcased the center's staff achievements. Newspaper coverage was also provided.

In January, Dr. Hermida, Ecuador, attended a seminar entitled "El Mejoramiento de la Calidad de los Servicios de Salud" in Santa Cruz, Bolivia. He made a presentation describing the methods and results of QA activities in Cholera and acute diarrhea in Ecuador. He also participated in working groups that discussed methods to help Cooperación Italiana (COOPI) to improve their current work with operations research in support of the MOH in Bolivia.

In March, Dr. Hermida was invited to attend the Ibero-American Conference on quality of health care at Murcia, Spain. He made a presentation describing QA training, as well as an overview of the QA activities and country programs that are being supported by the QAP in the Latin American region.

A presentation about QA in treatment of cholera and acute diarrhea was delivered by Dr. Hermida in Washington, DC, for officials of USAID's Office of Health, Research and Development.

In June, Dr. Jorge Hermida was invited to participate in a seminar organized by the National Council of Modernization (CONAM) and carried out by the Western Consortium of California. He gave a presentation on the different methodological approaches for quality improvement.

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In August, QAP Deputy Director Stewart Blumenfeld was invited to speak at the quarterly scientific meeting of the Philippine Society of Dietitians and Nutritionists. Dr. Blumenfeld spoke on the topic "Quality Assurance in Transition." The presentation described the current movement away from traditional quality assurance toward quality assurance systems based in principles of Quality Management. It showed how this newer approach could be utilized in the main nutrition programs being implemented by NGOs and by local government agencies.

Also in August, Dr. Blumenfeld gave a seminar on Quality Management for the faculty of the University of the Philippines College of Public Health. The seminar was designed to introduce UPCPH faculty to principles, tools, and methods of QM. Delivered at the invitation of the Dean, the seminar helped the college develop a QM module for its health administration curriculum, which is part of the master's degree in public health. Since most managers in the national healthcare system encounter UPCPH during their careers, insertion of a QM module in the MPH program is seen as a particularly effective way to amplify awareness of the role of quality assurance in the service system. It is expected that the initial introductory module will be expanded to a complete skills-development course, and that UPCPH will become the national resource center for quality management.

## Articles Published

- Nadwa Rafeh, PhD, MPH and Dr. Dalal El-Tobgi. (1995). "Clinical Practice and the Use of Laboratory Tests at the May 15 Hospital in Egypt." *International Journal for Quality in Health Care*. Vol. 7, No. 1. Pergamon Press.
- Lori DiPrete Brown. (1995). "Lessons Learned in Institutionalization of Quality Assurance Programs: An International Perspective." *International Journal for Quality in Health Care*.
- A. F. Al-Assaf, MD; Dennis Zaenger, MPH (1995). "Improving Quality Through Outcomes Impact." *Journal for Quality and Participation*.
- An article on Total Quality Management, by former Resident Advisor Dr. Al-Assaf, was published in the Royal Medical Services professional journal.



Photo by Gael Murphy

## *Appendix A*



*A Selection of Problem-Solving  
Methodology Results*

<b>Team</b>	<b>Problem to be Solved</b>	<b>Tools Used in Analysis of Problem</b>	<b>Principle Causes Identified</b>	<b>Solutions</b>	<b>Results</b>
<b>Niger</b>					
<b>Dispensary at Guidan Idder</b>	Low measles vaccination coverage. Only 18% of target group (children 0-11 months old) immunized against measles. Dropout rate between DPT and measles is 60%. <i>(Source: SMS service statistics)</i>	Cause-and-effect diagram	It was assumed that the population was not aware of vaccination schedule of availability.	<ul style="list-style-type: none"> <li>■ Changed prevention service schedule to more efficiently rotate village and neighborhoods</li> <li>■ Publicity of new schedule with health education in villages &amp; neighborhoods</li> <li>■ Taking names of dropouts &amp; following up through village health volunteers</li> </ul>	<ul style="list-style-type: none"> <li>■ 80% of children aged 9-11 months who are identified during neighborhood meetings return to the center for a measles vaccination</li> <li>■ Increase from 18% to 85% measles coverage for 0-11 mo. age group.</li> </ul>
<b>District: Birni/Konni Medical Center QIT</b>	Through brainstorming, the staff identified incorrect treatment of malaria as a major problem. Only 33% of malaria cases were being treated correctly when the problem was identified in 1993.	Flowchart, observations, and analysis of patient register	Providers were ignorant of correct treatment protocol.	<ul style="list-style-type: none"> <li>■ In-service training</li> <li>■ Posting of job aide</li> <li>■ Improved patient flow</li> <li>■ Systematic taking of vital signs</li> </ul>	<ul style="list-style-type: none"> <li>■ Correct treatment of malaria cases increased from 33% to 56% during the implementation of the solutions at the beginning of the malaria season in 1994. By the end of the season, correct treatment had increased to 70%.</li> <li>■ Reevaluation during the 1995 malaria season showed that 83% of cases were being treated correctly.</li> <li>■ Increased client satisfaction with new patient flow.</li> </ul>
<b>Dispensary at Yama</b>	Low utilization rate of growth monitoring services. Statistics from 1st quarter 1994 showed only 18% of target group using services. <i>(Source: SMS service stats)</i>	Flow chart	Irregular schedules (due to strikes) <ul style="list-style-type: none"> <li>■ uninformed population</li> <li>■ unavailability of vaccines due to lack of refrigeration</li> </ul>	<ul style="list-style-type: none"> <li>■ Community meetings to inform population of schedule and importance of growth monitoring</li> <li>■ Repair refrigerator</li> </ul>	<ul style="list-style-type: none"> <li>■ Since community meetings, participation has increased from 18% in 1st quarter 1994 to 68% in 2nd quarter 1995.</li> <li>■ Vaccination coverage still low, due to non-functioning refrigerator.</li> </ul>
<b>District: Tahoua Medical Center MCH Center</b>	Poor rates (6%) of rehabilitation among children enrolled in out-patient nutritional rehabilitation services as well as high rates (average 36%) of dropout. <i>(Source: service statistics and brainstormed priority of staff)</i>	Flowchart, observation checklist based on norms of service	<ul style="list-style-type: none"> <li>■ Expectation of daily attendance, which is beyond norm</li> <li>■ Non-comprehension of what service was about</li> <li>■ Perception that children not getting better</li> </ul>	<ul style="list-style-type: none"> <li>■ Reorganized flow of patients through the clinic service</li> </ul>	<ul style="list-style-type: none"> <li>■ Added curative service to CREN</li> <li>■ Reorganized schedule of service according to norms - Reduced waiting time from 3-4 hours to 15 mins.</li> <li>■ Increased counseling time from 1 min. to 3 mins.</li> <li>■ Assessed &amp; treated 100% of ill children</li> <li>■ Decreased dropout from 36% to 22%</li> <li>■ Increased recuperation rate from 6% to 15%</li> </ul>
	41% of women visiting the clinic during the 9th month of their pregnancy do not make the recommended 3 visits during their pregnancy.	Flow chart, interviews with clients	<ul style="list-style-type: none"> <li>■ Non-comprehension of importance of 9th month visit</li> <li>■ Poor reception in clinic</li> </ul>	<ul style="list-style-type: none"> <li>■ Reorganized flow of patients through clinic service</li> </ul>	<ul style="list-style-type: none"> <li>■ Decreased waiting time and increased counselling time.</li> <li>■ During the problem analysis period, the number of women not visiting the clinic three times during their pregnancy decreased from 41% to 36%, and six months later, the rate dropped to 28%.</li> </ul>

<i>Team</i>	<i>Problem to be Solved</i>	<i>Tools Used in Analysis of Problem</i>	<i>Principle Causes Identified</i>	<i>Solutions</i>	<i>Results</i>
<b>Niger (cont.)</b>					
<b>District: Tchintabaraden Medical Center</b>	During the last 3 quarters of 1993, the average nutritional recuperation rate for children under the age of 5 was 16% and the length of stay under care was 13 months.	Flow chart, observation checklist	<ul style="list-style-type: none"> <li>■ Associated illnesses untreated</li> <li>■ Non-comprehension of mothers of value of service</li> <li>■ Mobility of population and provider</li> </ul>	<ul style="list-style-type: none"> <li>■ Establishment of an intensive recuperation center with treatments and supplementation</li> <li>■ Reorganized flow of patients through clinic and calendar of services</li> <li>■ Clarified entry and exit criteria for the nutritional rehabilitation service</li> <li>■ Training of providers</li> </ul>	<ul style="list-style-type: none"> <li>■ After 9 months of intensive treatment, the recuperation rate increased from 16% to 29%.</li> <li>■ The length of stay in treatment for malnutrition decreased from 13 months to 3 months</li> </ul> <p><i>Note: the following problems prevented positive results</i></p> <ul style="list-style-type: none"> <li>■ Lack of supplements and pediatric medications cut short the continuity of the intensive treatment.</li> <li>■ Provider in-service training has been delayed due to conflicting schedules.</li> </ul>
<b>Dispensary at Gradome</b>	Through brainstorming, staff identified low rate of early prenatal consultation as a problem.	Flow chart, interview of women clients and matrons	Lack of understanding importance of early prenatal care on part of women and social taboo to acknowledge publicly a pregnancy	<ul style="list-style-type: none"> <li>■ Integrated prenatal care into daily activities</li> <li>■ Community and dispensary health education sessions</li> </ul>	<ul style="list-style-type: none"> <li>■ Third and fourth month prenatal care visits increased on average fourfold.</li> </ul>
<b>District: Bouza Medical Center</b>	Through brainstorming, staff identified high irregularity of TB patients receiving treatment (57%) as a problem.	Flowchart, observation with checklist, survey of defaulting patients	Patients lack information about their disease and treatment.	<ul style="list-style-type: none"> <li>■ Integrated patient education messages given at 3 critical points in treatment process</li> <li>■ Identified providers responsible for transmitting the messages</li> <li>■ Included defaulting TB patients in social workers' home visit caseload</li> </ul>	<ul style="list-style-type: none"> <li>■ Increased regularity of TB patients treatment from 57% to 91% (improvements have been sustained for 1 year).</li> </ul>
<b>Dispensary at Babamkatami</b>	Low utilization (31%) of growth monitoring services (Source: SNIS)	Flowchart	Caretakers lack information about service.	<ul style="list-style-type: none"> <li>■ Integrated GMS into daily activity</li> <li>■ Community education and follow-up visits with TBAs</li> </ul>	<ul style="list-style-type: none"> <li>■ Increased GMS utilization for children 0-11 months from 31% at the beginning of 1995 to an average of 92% utilization by the end of the 3rd quarter of 1995.</li> </ul>
<b>District: Madoua Medical Center</b>	Through brainstorming, staff identified high dropout (42%) from nutritional rehabilitation services as a problem.	Flowchart, cause-and-effect diagram, interview of mothers who were not coming for care, client satisfaction survey, provider satisfaction survey, observation	<ul style="list-style-type: none"> <li>■ Distance from health center</li> <li>■ Lack of transport to come to center</li> </ul>	<ul style="list-style-type: none"> <li>■ Integration of all MCH services into daily clinic activities</li> <li>■ Creation of separate service station for malnourished children</li> <li>■ Reorganized patient flow and staffing assignments</li> </ul>	<ul style="list-style-type: none"> <li>■ Reduced waiting time from 4 hours to 15 minutes for malnourished children (and 20 minutes for regular GMS).</li> <li>■ Client &amp; provider satisfaction with integrated system of services.</li> <li>■ Without publicity for new system, center has maintained utilization rate for all MCH services</li> <li>■ Decreased dropout rate from 42% at the end of 1993 to 27% by mid-1995 in child nutritional rehabilitation service.</li> </ul>

<b>Team</b>	<b>Problem to be Solved</b>	<b>Tools Used in Analysis of Problem</b>	<b>Principle Causes Identified</b>	<b>Solutions</b>	<b>Results</b>
<b>Niger (Cont.)</b>					
<b>Dispensary at Arzerozi</b>	Low acceptance rate (2%) of family planning services <i>(Source: SMS)</i>	Flowchart, community interviews, cause-and-effect diagram	<ul style="list-style-type: none"> <li>■ Lack of information provided to the community on the availability of FP services</li> <li>■ Wives' fear of husbands' negative reactions to FP</li> </ul>	<ul style="list-style-type: none"> <li>■ Offer family planning everyday all day</li> <li>■ Targeting community education to religious leaders and men</li> <li>■ Additional staff to be trained "in house" by trained midwife at medical center</li> </ul>	<ul style="list-style-type: none"> <li>■ Increased acceptance of family planning methods from 2% to 5% in 6</li> </ul>
<b>Dispensary at Manzou</b>	Low utilization (33%) of growth monitoring service (GMS) Measles vaccination coverage (2%) low <i>(Source: SMS)</i>	Flowchart, review of norms for GMS	<ul style="list-style-type: none"> <li>■ Inadequate access to services</li> <li>■ Poor provider knowledge of GMS norms</li> </ul>	<ul style="list-style-type: none"> <li>■ Reorganized schedule of community awareness to permit every neighborhood the opportunity to come to GMS once a month</li> <li>■ Integrated GMS and vaccination into daily schedule</li> </ul>	<ul style="list-style-type: none"> <li>■ Increased participation from 33% last year in same period to 62% this year for 0-11 month olds.</li> <li>■ Measles vaccination coverage rose from 2% to 51%</li> </ul>
<b>Dispensary Malbaza</b>	Through brainstorming, staff identified problems relating to dissatisfaction of clients with clinic reception and discomfort while waiting for prenatal care and growth monitoring services According to client surveys, 65% of women complained about the reception conditions at the clinic Only 51% of women participated in growth monitoring sessions	Cause-and-effect diagram, interview of clients	Lack of space to sit and wait	<ul style="list-style-type: none"> <li>■ Provide drinking water for clients</li> <li>■ Build shed for shade</li> <li>■ Provide benches</li> </ul>	<ul style="list-style-type: none"> <li>■ Decrease in complaints about the reception area from 65% to 56%</li> <li>■ Increase in participation in growth monitoring sessions from 51% to 76%</li> <li>■ Successfully recruited community support.</li> <li>■ Village chief will build shed for shade.</li> <li>■ District supervision &amp; village chief supplied hose &amp; barrel for water supply.</li> <li>■ Clients will supply drinking cups.</li> <li>■ QAP financed benches.</li> </ul>
<b>Tahoua Department Cross-functional Team:</b> <i>(regional coordinators and district medical officers)</i>	Through brainstorming, the team identified irregularity and quality of supervision visits as a problem.	<ul style="list-style-type: none"> <li>■ Interviews with supervisors and supervisees</li> <li>■ Observation checklists based on norms and training</li> </ul>	Lack of time, fuel, vehicles and training	<ul style="list-style-type: none"> <li>■ Design policy for supervision</li> <li>■ Train supervisors</li> <li>■ Improve logistics</li> <li>■ Train teams of supervisors</li> <li>■ Repair vehicles</li> <li>■ Provide fuel for supervision visits</li> </ul>	<ul style="list-style-type: none"> <li>■ Overall doubling of supervision visits at peripheral level.</li> <li>■ Improved quality of feedback and problem solving</li> <li>■ All districts have at least one operational vehicle for field visits.</li> <li>■ Delegation of supervision to other team members</li> </ul> <p>Once system was designed and in place, secondary problems identified were the burdensome reporting system and lack of feedback from the regional level. Therefore, the reporting system was streamlined and 3 coordinators identified at regional level to receive and respond to district reports</p>

**Niger** (cont.)

**Tahoua Department Cross-functional Team:**  
(regional coordinators and district medical officers)  
cont.

<b>Team</b>	<b>Problem to be Solved</b>	<b>Tools Used in Analysis of Problem</b>	<b>Principle Causes Identified</b>	<b>Solutions</b>	<b>Results</b>
	<p>Lack of small medical equipment and a system for tracking and distributing medical equipment and supplies.</p>	<ul style="list-style-type: none"> <li>■ Establishment of supply norms by Team</li> <li>■ Verification of minimal equipment needs at various levels using checklists</li> <li>■ Outstanding equipment and supply needs categorized by vital, essential and non-essential equipment</li> </ul>	<p>Lack of ability to predict need or supplies</p>	<ul style="list-style-type: none"> <li>■ Design inventory and distribution system</li> <li>■ Order vital equipment to be funded through project</li> <li>■ Renovate storeroom and install shelves</li> </ul>	<ul style="list-style-type: none"> <li>■ Ability to report on available supplies at regional level</li> <li>■ Ability to track distribution of equipment</li> </ul>
	<p>As a priority of the regional quality council, the team addressed the Department-wide problem of chronically low vaccination coverage.</p>	<ul style="list-style-type: none"> <li>■ Provider Interview</li> <li>■ Facility-based observation</li> <li>■ Flowchart</li> </ul>	<p>An assessment showed health providers are technically competent. Persistent problem of low coverage related to access and cold chain breakdowns, specifically irregular supply of butane gas, non-functional refrigerators, and significant missed opportunities for vaccination.</p>	<ul style="list-style-type: none"> <li>■ Systematize butane gas supply system</li> <li>■ Increase regional, district and clinic buffer supply of butane gas bottles</li> <li>■ An easy-reference clinic guide for EPI norms</li> <li>■ Integrate EPI into daily clinic activities</li> </ul>	<ul style="list-style-type: none"> <li>■ In first 6 months of gas bottle management system (196 bottles), only 2 centers had stockout and only 1 bottles were lost.</li> <li>■ Buffer stocks were critical to success of management system.</li> <li>■ EPI reference guide is drafted and awaiting approval of central level for distribution to each EPI facility.</li> <li>■ Integration of EPI into daily activities has been successfully initiated in 10 out of 55 centers. EPI sessions have increased to 3 times a week in 20 out of 55 centers. Remaining centers vaccinate only once or twice a week.</li> </ul> <p>This team is continuing to refine the gas bottle management system while tackling the next priority problem of refrigerator repair.</p> <p>Integration of EPI services remains a priority. However, major obstacles to full integration relate to availability of personnel and limited capacity of smaller refrigerators to refreeze dry ice packs</p> <p>Family planning services have also benefitted from Team strategies to integrate services.</p>
	<p>Frequent disruption of outreach and supervision activities due to non-functioning vehicles and frequent breakdowns. Specific problems include:</p> <ul style="list-style-type: none"> <li>■ excessive repair costs</li> <li>■ repeated repairs on some vehicles</li> <li>■ lack of maintenance schedules</li> </ul>	<p>None applied</p>	<p><i>Preliminary analysis of data showed:</i></p> <ul style="list-style-type: none"> <li>■ average age of vehicles in the motor pool is 8 years</li> <li>■ poor quality or lack of spare parts</li> <li>■ lack of technical competence to repair diesel vehicles</li> </ul>	<ul style="list-style-type: none"> <li>■ Cost control system designed for Department garage</li> <li>■ Instituted a maintenance schedule</li> <li>■ Trained 32 drivers in basic maintenance troubleshooting and defensive driving</li> <li>■ Created a database for the motor pool</li> </ul>	<p>The cost control system has curbed abuses in the purchasing of spare parts. Initially it also seemed to help cut costs dramatically. However further analysis shows that the vehicle problem is multi-faceted. Costs are, in fact, controlled by the amount of credit the government allows.</p> <p>The system to increase accountability of drivers is being reviewed.</p>

<i>Team</i>	<i>Problem to be Solved</i>	<i>Tools Used In Analysis of Problem</i>	<i>Principle Causes Identified</i>	<i>Solutions</i>	<i>Results</i>
<b>Chile</b>					
<b>Team of physicians in the Metropolitan West Health Service</b>	In a record review of 20% of the ARI cases seen in 4 health centers over a period of 3 months, 80% of care providers were not recording the respiratory assessment score or the case severity in medical records. This information is required to effectively follow or refer cases.	Info pending	Providers do not have enough time to write down all the necessary information.	The team developed a special rubber stamp for ARI case records. The stamp reminds provider of ARI documentation requirements and provides necessary space.	The proportion of complete records for ARI cases increased from 9% to 100% in one clinic, and from 40% to 100% in another.
<b>Midwives in the Metropolitan North Health Service</b>	Pregnant teenagers often do not follow health care advice. From baseline data, compliance with nutritional advice was 46%, with social workers' advice was 40%, knowledge about where to seek emergency care was 46%, and how to receive government benefits was 33%.	Info pending	Teenagers are confused about appropriate procedures.	The team developed a simple orientation card that was given to all clients as they entered the clinics.	Compliance with nutritional advice increased from 46% to 46%, with advice of social workers from 46% to 88%. Knowledge about where to seek emergency care rose from 46% to 100%, and how to get government benefits from 33% to 96%.
<b>Team of midwives from regional primary care directorates</b>	The delay in reporting birth weight information for infant high-risk cases was averaging 60 days. Long delays in referring high risk cases can be costly, especially in the critical first month after birth.	Info pending	Info pending	The teams developed quality management procedures.	As a result of implementing the procedures, all hospitals reported within 8 days of the end of the month, health centers reported within 15 days, and health posts reported within 30 days.
<b>Clínica Victor Manuel Hernandez</b>	95% of women who receive pre-natal care and have anemia begin ferro-therapy after 15 weeks of gestation (average gestation period for first pre-natal visit is 13 weeks; anemia is defined as a level of hemoglobin less than 12g/dl). 5% of patients return with results of blood test within 10 days, 8% within 20 days.	Flowchart; histogram	Lack of motivation of patient, lack of knowledge about risks of anemia, lack of needed supplies, lack of medicines in pharmacy, late start of pre-natal control, lack of clear norm to return with results of blood test.	Explanation of risk of anemia to patients; Instruction to start pre-natal visits early; Instruction to return with results of blood test; redesign of flow to obtain results of blood test.	65% of patients returned with results of blood test within 10 days, 23% within 20 days.

<i>Team</i>	<i>Problem to be Solved</i>	<i>Tools Used in Analysis of Problem</i>	<i>Principle Causes Identified</i>	<i>Solutions</i>	<i>Results</i>
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## ***Chile (Cont)***

<b>Clinica Talcahuana</b>	37% of PAP smear results were communicated within the standard of 22 days; 87% of women with positive PAP smear results had to wait more than 29 days for first follow-up visit; 86% of women with positive PAP smear completed treatment within 90 days.	Flowchart; medical record review		78% of PAP smear results were communicated within 22 days in 1994, 100% in 1995; 12% of women with positive PAP smear had to wait more than the norm of 29 days for follow-up visit in 1994, but 0% in 1995; 86% of women with positive PAP smear completed treatment within 90 days in 1993, 93% 1994, 95% in 1995.	
<b>Health Center Metropolitan South</b>	<ul style="list-style-type: none"> <li>■ Poor hygiene in the maternity ward</li> <li>■ Use of uniform by personnel: 87%</li> <li>■ 15% of workers followed a work schedule</li> <li>■ 0% of workers fulfilled their job description</li> <li>■ 21% of workers used correct techniques</li> <li>■ Availability of supplies: 60%</li> <li>■ Availability of equipment: 20%</li> <li>■ Clean bathrooms: 60%</li> <li>■ Clean hallways: 60%</li> <li>■ Clean rooms: 50%</li> </ul>	Direct observation; interviews with personnel; review of current norms	<p><i>Health personnel:</i> no respect for cleaning staff; lack of personal hygiene; lack of critical attitude</p> <p><i>Cultural:</i> poor treatment of cleaning personnel; poor concept of supervision; resistance to changes.</p>	Forming of a Quality Committee; elaboration of new norms; and supervision plan; Development of supervision checklist; basic training for cleaning personnel; training for all staff in hygiene; regular communication with staff.	<ul style="list-style-type: none"> <li>■ Use of uniform by personnel: 93%</li> <li>■ Workers followed a work schedule: 79%</li> <li>■ Workers fulfillment their job description: 86%</li> <li>■ Workers used correct techniques: 76%</li> <li>■ Availability of supplies: 98%</li> <li>■ Availability of equipment: 88%</li> <li>■ Clean bathrooms: 81%</li> <li>■ Clean hallways: 83%</li> <li>■ Clean rooms: 83%</li> </ul>
<b>Hospital San Luis de Brun</b>	Lack of information provided to the patients, due to an inadequate system to provide information to patients.	Interviews with representatives from community organizations and with patients		Creation of a system of patient service; hiring of new personnel for the reception and information services; training of personnel; 3 promotional talks on the radio; development of a new vision for the hospital; distribution of 300 information brochures about the new system patient service and 2 large signs.	In 6 months, the number of complaints and compliments doubled. The number of complaints being solved went from zero to 100%.

## ***Ecuador\****

<b>Central ministry team responsible for the national program for the control of diarrheal diseases.</b>	According to baseline assessment data, there were deficiencies in clinical assessment of dysentery. For instance, in 93% of the patients, overall hydration degree was not assessed. In addition, providers prescribed antibiotics to 37% of patients with no appropriate indication; 85% of mothers were not counseled on how to recognize dehydration signs at home.	Systems modeling; flowcharts; and nominal group techniques		Refresher training on the norms for CDD/Cholera; the application of counseling techniques; use of job aids; provision of manuals of norms; improvement of laboratory capabilities at the hospital; and a new system of supervision from the level of the health area management team to the health center level.	Using observation checklists and interview forms during routine supervisory visits, management teams obtained ongoing data to monitor results of provider counseling, case management, and mothers' increased knowledge. There was a reduction in the incorrect prescription of antibiotics from 37% to 7%. The percent of patients whose overall hydration was not assessed dropped from 93% to 3%. The percent of mothers not counseled on how to recognize dehydration signs at home decreased from 85% to 21%.
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\* Collaborative work with other projects or organizations

<b>Team</b>	<b>Problem to be Solved</b>	<b>Tools Used in Analysis of Problem</b>	<b>Principle Causes Identified</b>	<b>Solutions</b>	<b>Results</b>
<b>*Clínica Dr. Solón Nuñez</b>	Delays in delivering diagnostic reports and outpatient records. Requests for reports records took 39 minutes for retrieval.	Flowcharts, cause-and-effect diagrams, data collection, and data graphics	<ul style="list-style-type: none"> <li>■ Misplaced inquiries</li> <li>■ Misplaced vouchers</li> </ul>	<ul style="list-style-type: none"> <li>■ A standard was put into place requiring that medical records for appointments be retrieved by 3:30 pm the day before the appointment.</li> <li>■ Staff in the reception and medical records department were trained in use of the standard.</li> </ul>	<ul style="list-style-type: none"> <li>■ Retrieval time was reduced to 26 minutes</li> <li>■ There was an overall improvement in the organization of medical records and a decrease in lines in other departments of the clinic.</li> <li>■ Priority was given to high risk cases.</li> </ul>
<b>*Clínica de Puriscal Integrada</b>	Waiting time for diabetic patients in the clinic had long been excessive. Baseline data indicated an average waiting time of 5.8 hours.	Flowcharts, cause-and-effect diagrams, data collection, Pareto charts, bar charts, histograms	<ul style="list-style-type: none"> <li>■ Most of the excessive waiting time was attributed to waiting for a medical appointment, waiting time for taking laboratory samples, and waiting time to see doctors.</li> </ul>	<ul style="list-style-type: none"> <li>■ Patient education sessions began at 7 am.</li> <li>■ Doctors attended each medical visit.</li> <li>■ A window in the reception area was dedicated to diabetic patients.</li> <li>■ The receptionist gave to diabetic patients a laboratory appointment time upon arrival in outpatient services.</li> </ul>	<ul style="list-style-type: none"> <li>■ Overall decrease in the average waiting time from 5.8 hours to 3.7 hours</li> </ul>
<b>*Clínica Dr. R. Moreno Cañas</b>	<ul style="list-style-type: none"> <li>■ 27% of patients were rejected</li> <li>■ 44% of all gynecological visits were pre-natal check-ups</li> <li>■ More important diagnosis took place in gynecology</li> <li>■ Waiting time for a gynecological appointment was 2 months</li> <li>■ 103% performance level for gynecologists</li> <li>■ Low 7% of patients seen for family planning services</li> </ul>	Flow charts, cause and effect diagrams, data collection, and data graphics	<ul style="list-style-type: none"> <li>■ The greatest demand was for general Ob Gyn services.</li> <li>■ There was an excessive number of gynecological problems referred to general medicine and family planning</li> </ul>	<ul style="list-style-type: none"> <li>■ Prenatal visits were transferred to general OB Gyn physicians rather than gynecologists.</li> <li>■ Talks on basic aspects of Ob Gyn information and family planning were given.</li> <li>■ Medicines were stored with instructions and protocols for treatment.</li> </ul>	<ul style="list-style-type: none"> <li>■ No patients were turned away.</li> <li>■ 5% of patients were referred for specialized gynecological care.</li> <li>■ Waiting time for a gynecology appointment decreased to one day.</li> <li>■ The percentage of patients counseled for family planning increased to 82%.</li> </ul>

## Guatemala

<b>* Hospital in Amatitlán</b>	Baseline assessment data indicated that infection rates in women after caesarean sections were 25%.	Cause-and-effect diagrams	Important factors associated with infections were found to include ruptured membranes, length of operating time, and time of day when surgery was performed.	Participants developed a standard protocol for patients with caesarean sections.	Implementation of the protocol reduced infection rates after caesarean sections from 25% to 11%.
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\* Collaborative work with other projects or organizations

<i>Team</i>	<i>Problem to be Solved</i>	<i>Tools Used in Analysis of Problem</i>	<i>Principle Causes Identified</i>	<i>Solutions</i>	<i>Results</i>
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## Paraguay

### \* Hospital Regional de Caacucé

Dissatisfaction of aspects of services provided in the outpatient-clinic were indicated in a baseline assessment. In pre-consultation, 21% of patients did not receive any information. In the payment office, 59% of patients did not receive information concerning payment and 61% did not know where to go next. In admissions, 61% of patients did not receive any information, 18% were not able to obtain a number to be seen.

Flowcharts, cause-and-effect diagrams, data collection, and team work

- Lack of coordination between services
- Low productivity of human resources

- The hospital created an information center and developed job descriptions for individuals in charge of the information center.
- All personnel were trained in interpersonal relations
- Administrative rules were implemented that enforced working hours and regarding notification 24 hours in advance of leave time.

- In pre-consultation, cases of patients not receiving information decreased from 21% to 6%.
- In the payment office, cases where patients did not receive information concerning payment decreased from 59% to 12%; cases where patients did not know where to go next decreased from 61% to 12%.
- In admissions, cases where patients did not receive any information decreased from 61% to 61%.
- Cases where patients were not able to obtain a number to be seen decreased from 18% to 1%.

### \* Hospital de Primeros Auxilios, Asunción

There was inadequate revenue collection of hospitalized patients. Of all patients, 31% paid in full, 57% paid partially, 7% failed to pay, 20% were indigent and not required to pay.

Flowcharts, cause-and-effect diagrams, data collection, team participation and cooperation

- Charges for certain procedures were not collected
- Accounting services were disorganized
- Lack of coordination between social services and accounting concerning patient payment

- Forms were created to track procedures performed for hospitalized patients
- The name of the payment office was changed to cashier, better signs were installed and more staff was provided per payment window, and there was an increase in the number of working hours for personnel in accounting
- Hospital personnel were educated regarding daily cost per patient, percent of hospital budget obtained from MOH and from patient payments
- Communication between social service and accounting was improved

Of all hospitalized patients, the percentage of patients paid in full increased from 31% to 42%, partial payments increased from 57% to 39%, cases where patient failed to pay increased from 7% to 9%, and cases of indigent patients (no payment required) decreased from 26% to 10%.

### \* Hospital de Primeros Auxilios, Asunción

There is a high incidence of pneumonia in patients on respirators in the Intensive Care Unit. The actual incidence of pneumonia in two data sets was found to be 15% and 33%.

Flowcharts, cause-and-effect diagrams, data collection

There was a deficiency in physical infrastructure, there were inadequate protocols for hand washing and the care of aspiration of endotracheal catheters, and 81% of catheters were changed.

Plans were developed for improvement in the physical infrastructure, updates were introduced for hand washing and the care of aspiration of endotracheal catheters.

There were improvements in the physical infrastructure of the ICU, and there was an increase in the change of endotracheal catheters from 81% to 93%.

<i>Team</i>	<i>Problem to be Solved</i>	<i>Tools Used in Analysis of Problem</i>	<i>Principle Causes Identified</i>	<i>Solutions</i>	<i>Results</i>
<b>* Hospital de Primeros Auxilios, Asunción</b>	The average stay of patients with fractures of extremities was 10.6 days for a sample of 78. The average duration of complete treatment per patient was 3.3 days, and average waiting time before surgery per patient was 1.6 days.	Flowcharts, cause & effect diagrams, data collection	<ul style="list-style-type: none"> <li>■ Elective surgery schedules not followed</li> <li>■ Lack of supplies and medicines</li> <li>■ Lack of communication between social services and anesthesiology; because the social services department obtains materials needed for surgical procedures, anesthesiologists need to communicate with operative patient evaluations</li> <li>■ Lack of an isolated area for infected patients</li> </ul>	<p><i>The team implemented the following solutions:</i></p> <ul style="list-style-type: none"> <li>■ Scheduled elective surgery in order to reduce fractures nonoperatively.</li> <li>■ Improved the method for obtaining surgical supplies for indigent patients.</li> <li>■ Anesthesiology evaluation before patients arrived at the operation room.</li> <li>■ Designated area for infected patients in order to achieve a more organized patient flow.</li> </ul>	The average stay per patient decreased from 10.6 days to 9.8 days, the average duration of complete treatment per patient decreased from 3.3 days to 2.9 days, and the average waiting time before surgery per patient decreased from 1.6 days to 1.1 days.

## *Paraguay (Cont)*

## *Jordan*

<b>Salt Hospital, Medication Use Committee</b>	A study of antibiotic use indicated that physicians frequently prescribed expensive drugs needlessly, based on the fact that first generation antibiotics could have been used instead of the fourth generation antibiotics which were prescribed.	None used	Lack of standardized procedures for drug selection	Physicians established prescribing standards, guiding drug selection for a given condition. To encourage the use of expensive antibiotics only when necessary, physicians were required to document the rationale for the order.	In a period of one year, (1993-1994) antibiotic costs were reduced by \$35,000.
<b>Balqa'a Health Directorate</b>	A staff survey indicated a need for education and clinical standards setting for infection control.	None used	Not applicable	Standards were developed and classes taught on: hand washing, aseptic technique for IUD insertion, and instrument cleaning, disinfection, and sterilization.	Anecdotally, physicians noted a decrease in the number of patients requiring IUD removal due to uterine infections and pelvic inflammatory processes.
<b>Balqa'a Health Directorate team</b>	Over a 6-month period, 60% of ordered vaccines were observed to be wasted.	Flow charts, run charts, cause-and-effect diagrams, and decision matrices	<ul style="list-style-type: none"> <li>■ Stocking problems</li> <li>■ Cold chain break</li> <li>■ Access</li> </ul>	New vaccine ordering forms were created which permit restocking only to a preset level based on average use, cold chains were improved with more accurate and reliable temperature control during transportation and storage, vaccine administration hours were changed, and expanded service at the comprehensive clinic allowed working families to bring children in after work hours. Smaller clinics reduced the number of days they gave vaccines.	Results included 25% decrease in the number of vaccines ordered, a 16% decrease in waste vaccines, a 5% increase in the number of vaccines given, and maintenance of the vaccination coverage between 95% to 100%.

\* Collaborative work with other projects or organizations

<i>Team</i>	<i>Problem to be Solved</i>	<i>Tools Used in Analysis of Problem</i>	<i>Principle Causes Identified</i>	<i>Solutions</i>	<i>Results</i>
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## *Egypt*

<b>May 15 Hospital, Reception Process Improvement Team</b>	All potential visitor fees to hospital may not be collected.	<ul style="list-style-type: none"> <li>Flow charting of fee collection process</li> <li>Brainstorming</li> </ul>	<ul style="list-style-type: none"> <li>Lack of trained personnel for fee collection</li> <li>No monitoring system for control of fee collection system</li> </ul>	<ul style="list-style-type: none"> <li>New receptionists trained in fee collection</li> <li>System implemented for control of fee collection</li> </ul>	<ul style="list-style-type: none"> <li>A revenue increase of 50% was generated by use of new system.</li> <li>Increased revenue was documented in accounting department reports.</li> </ul>
<b>May 15 Hospital, Reception Process Improvement Team</b>	<ul style="list-style-type: none"> <li>Patients coming for care have long waiting times outside hospital gate before being directed to clinics or admitted for care</li> <li>Visitors wandering around hospital looking for inpatient family members</li> </ul>	<ul style="list-style-type: none"> <li>Flow chart of visitor and patient entry system</li> <li>Non-functional reception area assessed</li> <li>Brainstorming</li> <li>Client observation and interviews</li> </ul>	<ul style="list-style-type: none"> <li>No designated hospital reception area</li> <li>No designated staff to assist patients and visitors</li> <li>No staff trained in hospital reception knowledge and skills</li> <li>No written information for staff reference when asked questions by clients</li> </ul>	<ul style="list-style-type: none"> <li>Two hospital staff assigned as hospital receptionists</li> <li>Receptionists trained in quality customer service</li> <li>Job description written for receptionists</li> <li>Receptionists created a hospital information manual by working with other departments to obtain information</li> <li>Attractive uniforms provided for receptionists</li> <li>Information desk established in reception area</li> </ul>	<p><i>Post-intervention client observations and interviews:</i></p> <ul style="list-style-type: none"> <li>No more waiting lines outside hospital.</li> <li>Visitors escorted to patients' rooms.</li> <li>Satisfaction stated by clients.</li> <li>Unsolicited positive report on improvement published in popular weekly magazine.</li> </ul>
<b>May 15 Hospital, Operating Room Process Improvement Team</b>	<ul style="list-style-type: none"> <li>Documented evidence of lack of basic operating room nursing skills among nursing staff</li> <li>Inappropriate dress in the surgical suite</li> </ul>	<ul style="list-style-type: none"> <li>Observation of nursing performance</li> <li>Interviews with operating room nurses and physicians</li> </ul>	<ul style="list-style-type: none"> <li>Lack of necessary training in operating room nursing knowledge and skills</li> <li>Lack of operating room gowns, overshoes</li> <li>No permanent nursing staff assigned to the operating room</li> </ul>	<ul style="list-style-type: none"> <li>Job descriptions written for operating room nursing supervisor and staff nurses</li> <li>On the job training in operating room nursing contracted for and conducted by a local hospital</li> <li>Observation checklist for performance based operating room nursing skills</li> <li>Request hospital administration to assign permanent nursing staff to Operating Room</li> <li>Purchased materials, provided each nurse with 2 sets of appropriate dress for surgical suite</li> </ul>	<ul style="list-style-type: none"> <li>12 nurses permanently assigned to the operating room</li> <li>12 nurses trained in operating room skill; supervisor received additional training in supervision</li> <li>Full time consultant employed as a trainer role model for operating room staff and supervisor</li> <li>Policy and procedure manual written and adopted for the operating room</li> </ul> <p><i>Nursing performance improved as documented by:</i></p> <ul style="list-style-type: none"> <li>Observations with checklist, review of nursing notes in medical record.</li> <li>Increased use of certain sterilized instruments, supplies and antiseptics</li> <li>Appropriate dress of gowns, suits and shoes observed</li> </ul>

## *Philippines*

<b>Teams from Barangay health clinics and provincial health office staff</b>	Baseline survey data indicated that many health workers were not determining nutritional status correctly and not recording information in conformance with standards.	Flowcharts, cause-and-effect diagrams, data collection	Health workers were not consistently following the protocol for determining nutritional status.	Training was given on use of MOH standards and protocols for targeting high risk groups and record keeping.	There was an improvement for all the indicators used to measure performance for determining nutritional status and record keeping
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<i>Team</i>	<i>Problem to be Solved</i>	<i>Tools Used in Analysis of Problem</i>	<i>Principle Causes Identified</i>	<i>Solutions</i>	<i>Results</i>
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## **Indonesia**

<b>Hospital Team A</b>	The baseline assessment revealed that 50% of family planning clients leave the clinic without getting services.	Flowcharts, cause-and-effect diagrams, Pareto charts, other graphic displays, and client interviews	The day for family planning services coincides with the day for providing vaccination services at the clinic.	Adjust the schedule of services so that there are increased family planning and immunization services from 1 to 2 days per month; also, nursing staff give mothers referral cards to return for family planning services.	Since the solution was implemented, the team reported no instances of potential family planning clients leaving the clinics without receiving services.
<b>Hospital Team B</b>	In the baseline assessment 92% of family planning clients did not know about sterilization services.	Flowcharts, cause-and-effect diagrams, Pareto charts and other graphic displays, interviews, and record reviews	<ul style="list-style-type: none"> <li>■ Few staff members</li> <li>■ Staff do not have enough time</li> <li>■ Lack of understanding about need for information education about services</li> </ul>	The family planning clinic schedule was rearranged, and the changes disseminated to staff, as well as to clients.	During a period of 3 months, the proportion of clients not knowing about sterilization services dropped to 30% the first month, 16% the second month, and 7% the third month.
<b>Hospital Team C</b>	Monitoring data indicated that 7% of tubectomy patients who returned after one week at their post-operative visit had a wound infection.	Flow charts, cause-and-effect diagrams, interviews	<p>Few clients were given information about what to do when they went home, and those who did receive information did not receive complete information.</p> <p>Other possible causal factors were eliminated through investigations, e.g., sterilization of equipment, cleanliness of operating room and patient rooms, and sterile techniques during operation.</p>	A leaflet that was already developed was used by health staff to provide extra information and counseling by clients. The leaflet contained information about the tubectomy procedure and provided space for recording medication schedules, return units, and any special instructions.	In the three month monitoring period following implementation of the solution, there was not one single case of post-operative wound infection recorded.
<b>Hospital Team D</b>	In a baseline assessment, 40% of medical records examined did not contain complete information.	Service observation, record review, interviews, flowcharts, cause-and-effect diagrams, Pareto charts, and other graphic displays	Nurses, doctors and admissions personnel were not entering complete information on medical records.	Instituted systems in which nursing staff alternated responsibility for checking the completeness of charting in the medical records.	During a period of three months, the percentage of reviewed medical records that were incomplete dropped to 13% in the first month, 3% in the second month, and 10% in the third month.

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