QUALITY ASSURANCE PROJECT

TECHNICAL REPORT SUMMARY

The Niger QAP/BASICS Joint Project

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QUALITY
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PROJECT

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Abstract

This summary presents the objectives, findings, lessons learned, and recommendations of the fall 1998 evaluation of a quality assurance (QA) program in Niger, a French-speaking country in West Africa with a population of 10 million. The Nigerien QA Project (QAP) began in the Tahoua region in 1993 and in 1997 merged with another healthcare program—Basic Support for Institutionalizing Child Survival (BASICS)—to become the joint QAP/BASICS project. Later, the Konni District (Tahoua) and the Boboye District (Dosso) were selected for QAP/IMCI (Integrated Management of Childhood Illness) interventions; this was the first time in the history of international health interventions that IMCI was introduced in an environment where QA practices were in place.

Important lessons learned from the evaluation of the first five years of Nigerien QAP and QAP/BASICS relate to the savings and benefits derived from introducing IMCI in a QA environment, the ability of healthcare providers to learn and adapt QA principles and implement solutions, the development of teamwork among QA-trained staff, and the importance of coaching and meetings to support and sustain QA activities. The story of QA in Tahoua stands out as an excellent example of how QA activities can improve the quality of care, even in the face of severe resource constraints.

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About this series

The *Technical Report Summary* series provides concise descriptions and background information on the Quality Assurance Project's technical intervention results, evaluation results, and other project activities. This summary is derived from a longer report that was presented to Nigerien and U.S. officials immediately after the evaluation. For a copy of the longer report, write to qapdissem@urc-chs.com or call 301-941-8532. For more information on the evaluation of Niger's QAP/BASICS project, please contact slegros@urc-chs.com.

The Niger QAP/BASICS Joint Project

Stephane Legros, Elizabeth Goodrich, and Hany Abdallah

Acronyms and Abbreviations

ARI	Acute respiratory infection
BASICS	Basic Support for Institutionalizing Child Survival
BPS	Basic Package of (Healthcare) Services
CCM	Combined Case Management
CHS	Center for Human Services
IMCI	Integrated Management of Childhood Illnesses
ISQua	International Society for Quality in Health Care
MPH	Ministry of Public Health
QA	Quality Assurance
QAP	Quality Assurance Project
RAHWP	Rapid Assessment of Health Worker Performance
TAP	Technical Action Plan
USAID	United States Agency for International Development
WHO	World Health Organization

I. Introduction

Based in Bethesda, MD, the Quality Assurance Project (QAP) helps developing countries improve the quality of their healthcare services by introducing quality assurance (QA) tools and methods. Such tools (e.g., checklists, flowcharts, cause-and-effect diagrams) and methods (e.g., standard setting, problem solving) ultimately enable a healthcare system to improve the health outcomes of the population served. QA has gained widespread acceptance in healthcare settings, particularly as part of health sector reforms that seek to deliver cost-effective, equitable, and high-quality services. While many countries have articulated goals for healthcare quality, ineffective structures and processes often hinder service delivery. QAP is working to improve those structures and processes by introducing QA interventions.

The U.S. Agency for International Development (USAID) created QAP in 1990 to improve the quality of healthcare, population, and nutrition services in developing countries through technical support to healthcare facilities, USAID Missions, and field-based cooperating agencies. The Center for Human Services (CHS) has operated QAP since its inception.

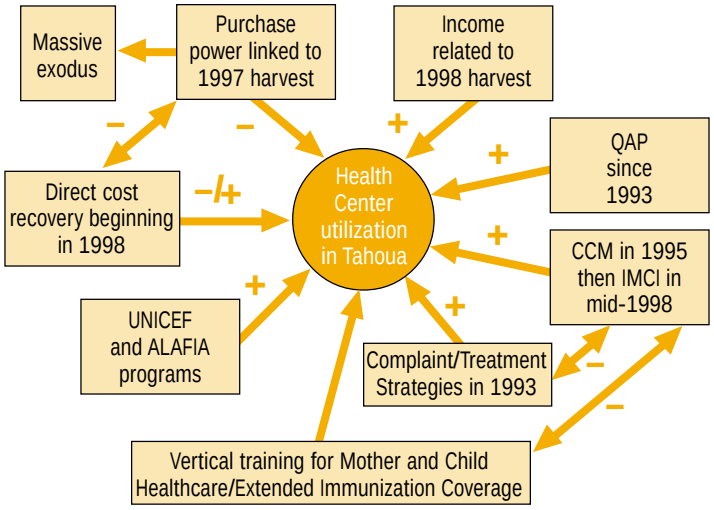
During its first five years, QAP developed national and regional QA programs, stimulated QA interventions in 16 countries, and conducted training activities in another eight. Since the start of its second five-year phase in 1996, QAP has been placing greater emphasis on demonstrating the cost-effectiveness of QA interventions. Specifically, it is seeking to: (a) determine the cost-effectiveness of QA in national programs, (b) document the impact and cost-effectiveness of QA through operations research, and (c) establish accreditation and other regulatory mechanisms. In 1993, QAP began to assist the Ministry of Public Health (MPH) in Niger in institutionalizing QA methods in its healthcare system. That program is termed “the Nigerian QAP” or “the QAP” hereafter.

A. Events Influencing Nigerien Healthcare in the Late 1990s

The Nigerien QAP experience was affected by numerous events that took place between its introduction in 1993 and the evaluation in 1998.

Figure 1

Factors Influencing Healthcare Utilization in Tahoua



Note: ALAFIA is a healthcare program sponsored by Germany.

Table 1

Timetable of Major Healthcare Developments

QA	Year	BASICS and Other
QA introduced in Tahoua at the health center and district levels	1993	Cost recovery introduced in limited areas
QA training begins	1994	
QA training of health center supervisors	1995	BASICS introduced
QA conference in Tahoua		CCM introduced in Boboye and Say Districts
QA training continues	1996	
QA introduced in Boboye		
Training of trainers	1997	Cost recovery starts to be introduced in Konni, Illéla and Boboye
Start of joint QAP/BASICS project		
Introduction of supervisory checklist		
1st RAHWP		
2nd RAHWP	1998	Cost recovery continues to be introduced in Konni, Illéla, and Boboye
International QA conference in Niamey		
Evaluation		IMCI introduced in Konni and Boboye
3rd RAHWP		

Those events included the implementation of two other major health-related programs and several events outside the public health sector that affected that sector, including a crop failure-driven exodus that resulted in reductions in healthcare utilization.

Figure 1 shows several of these events, and Table 1 is a timeline of significant dates in the implementation of the QAP and other major healthcare developments. Descriptions of some developments follow:

The QAP started in the Tahoua Department of Niger in April 1993:[1]

The Nigerien QAP sought to provide the government of Niger with both technical and operational assistance to improve the delivery of critical primary healthcare services in a limited demonstration region. This effort first aimed to identify and address the most prevalent illness-related problems of this population and then determine the resources necessary to deliver a basic package of services (BPS) to prevent and/or solve those problems.

After completing this introductory work, the QAP introduced a quality assurance system of management for healthcare delivery through: (a) clarifying, communicating, and monitoring clinical and management standards; (b) QA training; and (c) implementing and supporting a process for preventing and correcting problems. In addition, the QAP sought to improve the quality of family healthcare service by increasing effective coverage of the population with preventive services, improving case management of the most prevalent conditions threaten-

[1] Niger is divided into seven political regions or "departments," and the term is used in this report in reference to a region and not to a functional division of an organization. "Districts" are subdivisions of departments.

ing women and children, and strengthening core support services. While improving health outcomes, the QAP aimed to demonstrate the effectiveness and feasibility of quality management strategies by assessing the application of QA interventions, analyzing their impact, and disseminating the findings that resulted.

A QAP resident advisor directed in-country activities and worked directly with the Tahoua Department Healthcare Director, his staff, and district healthcare personnel to accomplish project objectives.

In 1993 cost recovery began in limited fashion in Tahoua and then evolved into different forms as it spread to other regions:
Cost recovery requires patients to pay for part of their health services and medications and thus effects their decisions of whether to seek healthcare for themselves or their dependents. In Niger, funds raised through cost recovery were used to replenish supplies of medications. This improved the healthcare system's ability to provide services and medications, which also influenced decision making. The evaluation assessed the effects of cost recovery in the districts of Konni, Illéla, and Boboye, where it was implemented in late 1997 and early 1998.

In 1995 an independent, USAID-funded program called BASICS (Basic Support for Institutionalizing Child Survival)[2] began:
BASICS supported the MPH in introducing Combined Case Management (CCM) for children in primary healthcare facilities.[3] Implemented within limited areas, CCM revised national policies for diarrheal diseases, acute respiratory infection (ARI), and malaria.

In 1996 the QAP extended QA beyond Tahoua to the Boboye District in the Dosso Department:
This step would support the mid-1998 introduction of the Integrated Management of Childhood Illness (IMCI) clinical guidelines. Developed by the World Health Organization (WHO), IMCI was later incorporated as part of BASICS in Boboye.

In early 1997 the QAP and BASICS merged to become the QAP/BASICS joint project in Niger:
QAP/BASICS focused on the possibility of revising the approach to the improvement of child healthcare services at the district level. The Konni District (Tahoua) and the Boboye District (Dosso) were selected for QAP/IMCI interventions on the basis of the availability of essential medicines and the interest shown by staff. This development is important to the international health community because it was the first time in the history of international health interventions that IMCI was introduced in an environment where QA practices were in place.

In the fall of 1998 the evaluation took place:
At that time, QAP/BASICS was ongoing in Tahoua Department and Boboye. The evaluation team also visited non-QAP facilities for comparison.

B. The Evaluation of the QAP/BASICS Project

In late 1998, USAID hired an evaluation team to review and assess the QAP/BASICS project. The team consisted of four doctors who specialize in public healthcare—one from the Quality Assurance Project in Bethesda, Maryland, one from BASICS, and two from the Nigerien MPH—and a healthcare program assistant from USAID.

Just before the evaluation, the team attended a USAID-funded international conference in Niamey, Niger, where the results of the QAP/BASICS project were presented by those involved in its implementation. Next, the evaluation team reviewed all QAP-related documents and visited two department-level health directorates, six district headquarters (which provide administrative and management support for district hospitals and healthcare centers), and 13 primary healthcare centers (health centers). The team interviewed about 60 individuals in all—from the

[2] BASICS provides technical leadership to reduce child mortality and illness worldwide. It applies cost-effective, child-survival interventions in six programmatic areas: sustaining immunization programs, integrated management of childhood illness (IMCI), strengthening the link between nutrition and health, promoting and sustaining healthy behaviors, improving techniques for monitoring and evaluation, and establishing public/private partnerships.

[3] Primary healthcare facilities in Niger are generally small clinics staffed by a nurse or less-trained healthcare provider. These facilities generally serve as the initial point of contact between a patient and health services; cases that cannot be treated at the health centers are referred to hospitals and specialist facilities.

Nigerien healthcare system, the QAP, BASICS, and other international staff—and conducted two focus groups of women who used the healthcare facilities in seeking care for themselves and their children. Interviews were guided by a multilevel questionnaire covering different aspects of QA. The team presented a preliminary report to the MPH General Secretary and other partners on the last day of the evaluation to validate its findings and recommendations.

The evaluation team used the USAID 1997/98 Technical Action Plan (TAP) as its guiding document. Written by USAID, the TAP set the objectives for the QAP/BASICS project. Those objectives are presented in Chapters II and III.

The goals of the evaluation were to: (a) assess QAP/BASICS' success in achieving those objectives, (b) summarize the lessons learned from introducing IMCI in a QA environment, (c) present a cost analysis for sustaining QAP/IMCI in Niger after the cessation of QAP/BASICS, and (d) develop recommendations to help the project expand into other areas of Niger and the surrounding countries that are, or may become, interested in introducing IMCI in a QA environment.

The evaluation team focused on: (a) documenting the benefits of QA institutionalization in the healthcare integration process, (b) documenting programs that increased healthcare workers' qualifications and motivation, and (c) evaluating how standards and tools were introduced to achieve the integration of QA and IMCI approaches.

The evaluation team does not claim to have made an exhaustive analysis of project performance and results; their efforts resulted in a broad overview of QA accomplishments in Niger. The team recognizes that factors and programs other than QAP/BASICS may have influenced those accomplishments.

C. Healthcare Environment Pre-QAP

Before QA activities began in 1993, clinical standards were unknown to Nigerien healthcare providers (see Table 2). Health workers had no understanding of or experience with working in teams. Regional supervisory competence was lacking, and no district supervisory teams existed. Healthcare workers could receive training only by means of vertical processes—no regular meetings were scheduled to share information and solve problems. In addition, health managers and staff had neither the knowledge nor the tools to solve problems or improve delivery systems.

Not only were many of the health centers lacking the essential equipment to provide a basic package of services, but the concept of a BPS was merely a vague desire in the minds of a few high-level managers who had neither the information to design nor the means to implement one. Another example of the poor state of healthcare in Niger before the QAP is the fact that cleanliness was largely unsatisfactory in most facilities.

Table 3 presents the baseline indicators and departmental objectives that were in place as Niger's QAP began.

Table 2
Existing Standards for Patient Management and Health Center Administration

Department Unit	Standards and Guidelines	Source	Year
Child Health and Development	Mother and Child Healthcare/ Family Planning	MPH	1993
	Handbook of Clinical Procedures for tuberculosis, malaria, and malnutrition cases	MPH	1995
	Complaint/Treatment Strategies	MPH	1993, revised in 1998
	Combined Case Management	BASICS/MPH	1995
	IMCI	WHO/MPH/BASICS	Mid-1998
Health Center Management	Standard management procedures manual (administration, finance organization, and health policy)	QAP/MPH	1996, revised in 1998

Table 3
BPS Baseline Indicators: 1993, 1997, and Objectives
(Tahoua Department; in Percentages)

Indicators	1993	1997	Department Objective
Utilization rate of curative services (total population)	30	29.8	50
Infant consultation coverage rate (0–5 km.)	58	75.6	85
Prenatal consultation coverage rate (0–5 km.)	63	76.6	85
Nutritional rehabilitation recovery rate	14	24.8	25
Nutritional rehabilitation drop-out rate	15	16	10
Family planning utilization rate (total population)	5	14	7
BCG coverage (0–11 months)	35	76	100
Fixed coverage rate for measles (0–11 months)	24	55	80
Fixed coverage set rate of DTCP/3 (0–11 months)	63	68	90
Fixed return rate anti-tetanus vaccine 2/1	74	73	90

Source: Official Tahoua data

NB: These indicators were calculated from demographic data from the general population census (1988) and revised according to the annual population growth rate in the Tahoua Department and calculation methods recommended by Niger's national health information system.

Demographic Data:

Children aged 0–11 months represent 4.7 percent of the population.

Expected pregnancies represent 52/1000 of the population.

Women of childbearing age represent 22 percent of the population.

II. TAP Objective Number 1

Institutionalize quality assurance in two districts in Tahoua Department and one in Dosso Department. Strengthen the supervision teams' management capabilities, revitalize problem-solving teams, and support and strengthen cost-recovery activities in the Konni, Illéla, and Boboye districts.

For this objective, the evaluation team determined the degree of institutionalization[4] of QA in two districts in Tahoua and one in Dosso, measuring the capabilities of the supervision teams and the problem-solving teams, and considering the effectiveness of the QAP's efforts to strengthen cost recovery. This section presents the team's findings in these areas as they relate to the three aspects of QA: defining quality, assessing quality, and improving quality.

A. Defining Quality

Standards are essential to achieving customer satisfaction, but the evaluation team found that Nigerien health workers had difficulty managing the numerous clinical standards (listed in Table 2) that had been developed by the Nigerien government, Tahoua Department managers, and donor partners. In addition, some clinical protocols conflict with others, causing confusion for healthcare providers.

Standards of healthcare may be communicated to health workers through several means: preservice training, inservice training, meetings of health workers and/or supervisors, the dissemination of publications bearing the standards, on-the-job training through supervision, job aids, or any combination of these. The evaluation team found that through six regional (to West Africa), national, and local training sessions held in Niger in 1998, 39 Nigerien health staff received training in the IMCI clinical guidelines. This number includes six who received training of trainers. Through documentation and other evidence, the evaluation team found that 14 out of 18 health centers have at least two IMCI-trained staff.

[4] "Institutionalization" can be described as follows: When QA activities are formally and functionally incorporated into the structure of a healthcare system or organization; are consistently implemented; and are supported by a culture of quality, as reflected in organizational values and policies that advocate quality care.

Other standards were usually communicated during quarterly meetings and supervisory visits. The QAP did not initially plan specific training for the implementation of the national standards it developed.

B. Assessing Quality

Monitoring and supervision systems work together to ensure that healthcare providers use standards appropriately. To measure the extent of their use and their effectiveness, indicators must be established and records kept, and supervisors must ensure that the records are used for supervision (to improve provider performance). Supervisory activities, including monitoring the use of standards, were largely nonexistent before the QAP began in Niger. The concept of supervision implied an authoritarian nature and a vertical approach.

Within six months after the QAP began, a Quality Council formed in Tahoua. Comprised of department-level healthcare managers, its objective is to guide, coordinate, and follow all actions relating to quality improvement. It identified supervision as the main vehicle to introduce and strengthen QA in Niger's healthcare system. It called for the creation of a supervisory system, which began with a document that lists several elements essential to supervision, such as a definition of supervision, objectives of supervision, and methodology. Thus began the journey from an authoritarian style of supervision toward a team approach. The following details the activities and results of the supervisory system.

1. Development and Activities of the Supervisory System

The Quality Council initiated the following measures:

- Training in supervisory techniques (each district has at least four supervisors to guide and assist health center problem-solving teams)
- District-level management teams of two doctors, a manager, a communicator, and an epidemiologist, all trained in QA, coaching, and/or supervision (successfully formed in six of eight districts of Tahoua)
- Health worker training in technical equipment and inventory management, and a stock management system
- Improvements in the car pool system
- Management standards and a BPS

2. Immediate Results of the Supervisory System

While the ultimate goal of the QAP is to improve health outcomes, reaching it requires intermediate steps. The Niger QAP's success in improving health outcomes through improved supervision would rely on several intermediate achievements. The evaluation team reviewed the progress made and found as follows:

The supervisory process was not fully operational:

It calls for supervisory visits by the department of each district every six months and by the districts of each of their health centers every three months. While department visits were still irregular at the time of the evaluation, department staff had made several information collection visits, which may have resulted in the kinds of improvements one would expect from a supervisory visit. Supervisory visits by district staff of health centers were being held as planned—every three months—and had helped the health centers acquire the technical and financial support they needed, which improved operations and staff motivation.

Health workers had been trained to ensure a functinal transport system:

Healthcare providers received training in maintaining equipment and managing inventory, and the car pool system was strengthened, although it was still not fully adequate at the time of the evaluation.

Standards were being developed and implemented:

Management standards and standards for the delivery of the BPS had been drafted, adopted, and disseminated.

A supervisory checklist had been developed:

The checklist has sections that help supervisors monitor health worker performance in following standards relating to IMCI; prenatal, postnatal, and infant consultations; immunization coverage, etc. It also covers cost recovery, community participation, monthly reports, and other administrative reporting. From interviews with those who use the checklist, the evaluators concluded that its strengths are that it is easy to use and archive and that its most important sections apply to IMCI and community participation. Its weaknesses are that it is too long, its cost recovery section does not request the same information as the cost recovery system in Tahoua, and that

sometimes the activities to be monitored do not occur while the supervisor is visiting the health center.

A rapid assessment of health worker performance (RAHWP) had also been developed:

The RAHWP helps supervisors determine the quality of health services, especially those related to IMCI. Using the RAHWP, supervisors monitor health workers' abilities to perform activities like greeting a caretaker appropriately, taking a patient's history, examining children according to IMCI, classifying the disease, identifying treatment, verifying a child's vaccination and nutritional status, and counseling mothers. The evaluation team found that the RAHWP helps workers improve their performance if results are discussed with them. This tool's weaknesses are that it does not cover health services other than child health, that health workers are not accustomed to such intense scrutiny, and that it is time consuming.

Managerial meetings were being held:

Meetings of staff who engage in supervisory activities to support QA are held at two levels: (a) district head doctors and staff, and (b) health center managers of a district and their supervision team. The meetings provide a forum for reflecting on and exchanging information among health centers in a single district or department. As part of the information exchange, participants benchmark successful problem-solving activities. The meetings also allow for the systematic review of health outcome monitors (which, in turn, helps develop data for future quality improvement activities), the adoption and communication of standards, and training and self-evaluation.

C. Improving Quality

Once supervision is in place to monitor the quality of healthcare services, the next step in improving customer satisfaction is identifying problems that hinder improvements in measurable healthcare outcomes and finding solutions to those problems. QAP advocates the use of teams of healthcare providers to implement this process. It also instructs providers in using QA methods, such as planning and defining quality, quality monitoring, and quality improvement to identify problems and implement solutions.

To begin, Niger´s QAP trained over 520 health workers between 1993 and 1998. Courses included basic QA training (400 trainees), coaching (52), supervision (94), and IMCI (39). Training was given every year from 1993 to 1998, with the largest number trained in 1996. The evaluation team felt that the high density of trained staff contributed to the level of teamwork among problem-solving teams and made problem solving possible despite less-than-optimal mobility.

1. Problem-Solving Process

After training, those trained are expected to return to their place of work—a health center, district hospital, or administrative office—and participate in the development and continuation of a "problem-solving" team. Teams tend to have three to eight members; composition varies, depending on who has been trained and the needs and resources of the workplace. A health center team might include a head nurse, an assistant nurse, a traditional birth attendant, and the director of the district office. QAP recommends that community members also participate, although they generally are not trained (and were not in Niger). In Niger, continuous team membership was a problem because of high staff turnover.

Identifying problems:

While QAP trains health providers to use data gathering and analysis to identify problems, most of the workers interviewed by the evaluation team used brainstorming instead. Brainstorming is also taught by QAP but is appropriately used for other steps in problem solving. QAP teaches providers to use a selection matrix to select a problem once several are identified, and this method was used in 90 percent of the cases discussed with the evaluation team.[5] Criteria used for selection usually included frequency of the problem, its impact on other activities, and its importance and impact on service use.

The evaluation team found that 120 problem-solving cycles had been started and were either continuing or had been concluded at the time of the evaluation. Another 27 had been

[5] The selection matrix is a consensus development technique where a group of people who are familiar with the problems at hand are asked individually to weigh the advantages and disadvantages of solving each of those problems. Through various scoring techniques, individual preferences are combined to establish a group preference.

abandoned for reasons unknown to the team. All cycles addressed problems relating to the BPS, meaning that problems relating to logistics or health center management failed to receive the attention they probably warranted. The most frequently addressed problems related to either nutritional training and rehabilitation or family planning.

Describing a problem:

The evaluation team found that most teams had difficulty at first in wording the description of their problems, but all teams acquired this skill with experience.

Problem analysis:

The evaluators also found that the Nigerien problem-solving teams performed problem analysis well, especially with respect to using cause-and-effect diagrams. However, the teams had difficulties collecting data and never used Pareto or control diagrams, which QAP explains and recommends for this step.

Identifying, applying, and analyzing solutions:

The evaluation team rated Nigerien health providers highly in identifying viable solutions and using selective criteria, such as cost and ease of application. In applying solutions, providers engaged in several types of activities, such as raising the public's awareness and organizing medical home visits. Local solutions to problems were usually found without significant outside help, although occasionally the community was asked to help build a facility annex or contribute food for nutrition presentations. The team felt that, generally, the teams should ask for community help more often.

Solution analysis helps teams evaluate their success in solving a problem and is especially important if initial results from the problem solving are unsatisfactory. The evaluation team found that a review was infrequently done; teams tended to press on to a second problem rather than assess the impact of their solution. Alternatively, they would analyze their solution but not document their findings.

2. Results of Problem-Solving Teams

The evaluation team found several constraints to problem-solving efforts, including the improper or insufficient use of QA tools, conflicting schedules, and lack of coaching. On the other hand, the team found appreciable improvements in teamwork that can serve as a foundation for improved healthcare. Particularly significant were the motivating and participatory atmosphere for health workers, including having doctors shift their focus to patients' expectations and satisfaction, regular brainstorming to solve problems, commitment on the part of workers to solve problems at the lowest level possible, and health center management that seeks to improve the quality of healthcare. Drug-stocking and cost-recovery systems were implemented to organize the essential generic drugs inventory, sustain routine support activities, and finance restocking (cost recovery and drug supply management are described below in the chapter on the second TAP objective).

At the department level, the evaluation team reported finding spontaneous problem-solving practices. For example, rather than implement the entire problem-solving process, department staff would use part of it to solve a problem in a day's time.

3. The Coaching Mechanism

A coaching mechanism was established to assist the problem-solving teams by providing support and facilitation. Coaches tend to be district managers and healthcare providers who have received training in both basic QA and coaching. Coaching results in closer follow-up of the teams' work and provides the support, such as advocacy for resources, necessary to implement solutions. This mechanism is especially important during a team's first cycle and at the beginning of subsequent cycles. At the time of the evaluation, there were 24 active coaches in Tahoua and four in Dosso. The evaluation team concluded that coaches significantly contribute to the problem-solving process by encouraging teams, that they should be stronger at the department level, and that they should meet to share experiences.

4. Process Design/Redesign

Process redesign—where healthcare providers go beyond problem solving to restructure a system or process—is still formative in Niger, but the evaluators were impressed with what they discovered. Although Nigerien healthcare managers and providers had no training or exposure to process redesign, there was evidence of spontaneous development of these skills.

For example, providers realized during their problem-solving sessions that it would be more efficient to offer all healthcare services to patients during a single visit, rather than have patients return

to the health center on the day the needed service was scheduled. The concept of integrating services—a process redesign—was suggested and implemented on a fairly wide scale in the pilot areas.

Similarly, providers realized that new mothers should have postnatal visits and implemented the idea on their own initiative. These examples resulted directly from QA practice and show that providers are going beyond simple problem solving to address faulty processes.

5. Results Analysis

The evaluation team found improvements in most of the BPS indicators, although other influences, such as the implementation of cost recovery and a crop failure-driven exodus, hindered those improvements. For example, the use of curative services rose from 30 percent in 1993 to 37 percent in 1995, but then dropped to just under 30 percent in 1997. The team believes that improvements to the healthcare system, some of them created by QAP/BASICS, caused the increase and that by forces outside QAP/BASICS caused the decrease, although this cannot be proven. Other indicator data are in Table 3.

The improvements in the indicators after the setbacks may have been caused by a growing satisfaction with healthcare services among the Nigerien people. This in turn may have been caused by: (a) improved availability of medicines (cost recovery income is used to resupply medicines/drugs), (b) the integration of services, and/or (c) lower medical costs (prescriptions are less expensive under cost recovery, where people buy medications through the public health system rather than through a private pharmacist). The evaluation team notes that healthcare services in Niger generally remain too expensive, especially for rural families and during the rainy season. The team was pleased to see that patients, now having to pay for services, are demanding better quality, which is expected to continuously improve those services.

To make a comparison, the team visited a health center that was not part of the QAP/BASICS project or the cost recovery system. It found that the facility without these programs lacked many valuable features. It saw less organized offering of services and activity planning, no monitoring of follow-up indicators, no use of data, no awareness of any changes in health outcomes, no provision of prescriptions, and no integration of services.

III. TAP Objective Number 2

Review, test, and distribute in Niger and the surrounding countries a model[6] to improve IMCI at the district level. Improve the health workers' skills in IMCI. Disseminate in Niger and the surrounding region the materials produced and lessons learned from the QAP/IMCI approach.

For this objective, the evaluation team looked at the Nigerien QAP's success in having certain aspects of the healthcare system in the pilot area become a model for implementing IMCI: Lessons learned from that effort were to be disseminated throughout Niger and the surrounding countries. The team also evaluated the impact of the QA environment on health workers' skills in IMCI. As noted above, in 1995 BASICS worked with the Nigerien MPH to introduce Combined Case Management for children in primary healthcare facilities. CCM helped Niger revise policies for the treatment of diarrheal diseases, ARI, and malaria, thus reducing missed opportunities to identify sick children.

In early 1997, the newly merged QAP/BASICS project began to focus on revising the approach to the improvement of child healthcare services at the district level. The Konni District (Tahoua) and the Boboye District (Dosso Department) were selected for QAP/IMCI interventions on the basis of the availability of essential medicines (in part because of cost recovery) and the interest shown by staff. IMCI focuses on five conditions that cause child mortality: diarrhea, ARI, malaria, measles, and malnutrition; BASICS was USAID's main vehicle for introducing IMCI in the late 1990s. One of the objectives of the evaluation was to make recommendations that would help QAP/BASICS expand into other departments of Niger and into neighboring countries interested in introducing IMCI in an environment that has a quality assurance system.

[6] That is, the healthcare system in Niger where QAP/BASICS was implemented would serve as a model for neighboring regions in the management of childhood illnesses.

A. Introducing IMCI in Niger

The QAP/BASICS project provided technical and managerial assistance in introducing IMCI into the Nigerien health system, including:

- Planning, through a working group, to adapt the IMCI generic[7] standards to Niger's specific needs
- Funding all 1998 workshops for district managers in orientation, QA training of trainers, and basic QA training of health workers in Konni and Boboye
- Orienting MPH decision makers, international partners, prominent pediatricians, and health workers in the pilot districts
- Adapting national standards for vertical programs and the generic IMCI standards to account for Niger's relatively low rates of malaria and parasitic infestation and to reduce the signs for evaluating dehydration
- Training to communicate the IMCI standards
- Organizing the training events

B. Local Implementation

The evaluation did not directly demonstrate that savings resulted from introducing IMCI in a QA environment. However, the evaluation team does believe that greater compliance to IMCI standards was a direct result of QA and that QA facilities should reap savings through a reduced use of medicines and personnel time. Also, better-quality child care standards were in place, thanks to the QAP and IMCI. In addition, the pilot QA/IMCI program taught international and governmental healthcare planners the specifics of implementing IMCI standards in a QA environment, including the provision of training in IMCI skills and use of quality improvement tools and methods.

1. Cost Recovery and Drug Supply Management

While cost recovery was in effect in both Konni and Boboye, the evaluation team found that they were not equally successful in developing and implementing drug supply systems. In Konni, the stockkeepers were successfully managing supplies, using payments from clients to maintain stocks. In Boboye, however, the team found several missed opportunities that were causing shortages. For instance, first-line antibiotics required for IMCI were generally available but second-line antibiotics were lacking.

While the availability of essential medicines improved remarkably with cost recovery, its impact on the use of services warrants caution. Utilization rates before and after cost recovery suggest that it caused a decrease in usage. Figure 2 shows changes in utilization for three healthcare services in Konni before and after cost recovery was implemented. And, as mentioned above, cost recovery can be beyond the financial means of some families.

2. Health Indicators

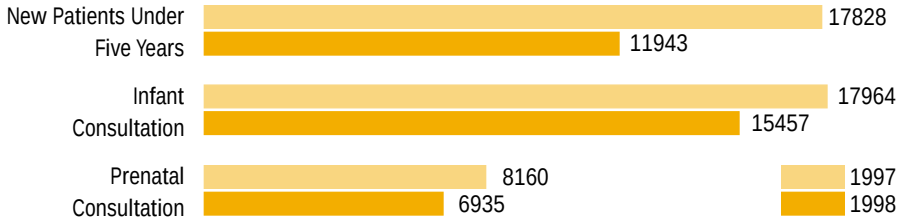
QAP/BASICS has improved the ability of health staff to collect, analyze, and use data. The evaluation team was particularly impressed with Konni District staff's analytical ability to monitor health service indicators (rates of family planning, prenatal, and neonatal visits, and vaccinations) and to detect malnutrition, tuberculosis, and leprosy.

C. Results of Introducing IMCI in a QA Environment

The evaluation team looked at several factors that contributed to the successful introduction of IMCI in Niger's districts with QA processes in place. It found that in Tahoua, where department and

Figure 2

Utilization of Services in Konni District
(1997 and 1998; January 1 to June 30)



[7] WHO has devised "generic" IMCI standards; they are adapted to fit the situation of each country where they are implemented.

district supervisory teams were trained in both QA and IMCI, supervisors are able to provide technical support to primary healthcare workers. The team is concerned that IMCI quality could erode if QA-trained supervisors are transferred out of QA districts and into those where QA has not been implemented. Because the evaluation occurred just three months after IMCI was introduced at the health center level, the team could only tentatively assess the impact QA was having on IMCI's effectiveness. The following summarizes some of the findings.

1. Supervision

The supervision checklist discussed with the first TAP objective evolved with the introduction of IMCI to ensure adequate monitoring of health workers' IMCI skills. (The sections of the checklist that monitor maintenance of essential medicines/drugs and compliance with the cost recovery system were also updated to conform to changes in those programs.)

The rapid assessment of health worker performance (also discussed with the first TAP objective) focuses mainly on IMCI and is conducted through observation of health workers while they examine young children. It also guides supervisors in interviewing mothers to assess their satisfaction with services and the effectiveness of health worker communications. The evaluation team found the RAHWP valuable for monitoring performance and generating data to improve services. The team also saw that feedback from the assessment can foster improved worker performance. The second time this tool was used, a higher percentage of mothers received adequate counseling for treating their children. On the other hand, some indicators either did not improve or declined between the first and second use (Table 4).

Table 4
Results of RAHWPs
(1997 and 1998; in Percentages)

Indicators	Konni		Illéla	
	Oct. 97 n = 78	June 98 n = 41	Oct. 97 n = 81	June 98 n = 32
Children checked for general danger signs	49	25	51	63
Children correctly examined	54	28	19	49
Children correctly treated	81	83	77	78
Mothers adequately counseled for the treatment of their sick child	52	73	50	69
Mothers counseled for signs that merit bringing their child back	75	83	33	50
Children having their nutritional status checked	93	45	6	16
Mothers who knew at least two general danger signs	43	83	79	53
Mothers who know how to give the prescribed medicine to their sick child	73	83	40	80

2. Quality Improvement

All IMCI-trained staff in Konni and Boboye had also had QA training, including problem solving. The team discovered that this training enabled staff to recognize problems with malnourished children and monitor their progress. This resulted in impressive improvements in the indicators measuring dropout rates in nutrition care. Still, serious concerns remain: QA can neither solve problems resulting from lack of resources (e.g., breaks in the cold chain caused by lack of refrigerator fuel) nor detect defects in staff clinical skills, although it can continuously improve efforts to help solve these kinds of problems.

3. Findings

While the evaluation team recognizes that IMCI had just been implemented in Niger, it did release the following tentative findings:

- Trained staff are capable of applying the IMCI clinical guidelines to examine and treat children, and they can check children's vaccination and nutrition status.
- Many of the items necessary for IMCI to be successful were

missing because of financial restraints: no health center visited had a respiratory rate counter; Boboye had no IMCI forms; and the urban health center in Konni had no baby scale.

- Health workers have to complete five different records for each sick child: the IMCI forms, the National Health Information System tally notebook, the Daily Register Book, the Cost Recovery Register, and the Card of Care. This results in inefficiencies.
- Health workers do not know what to do with the completed IMCI forms, undermining the program's effectiveness in monitoring trends in child health.
- Some completed IMCI forms indicate that staff fail to complete the nutrition section and/or to refer children with malnutrition.
- Some health staff need closer supervision to complete the IMCI forms correctly.
- Only 11 percent of expected follow-up visits actually occurred; caretakers may not be able to comply with IMCI standards that encourage their return for a follow-up visit.
- A similar discrepancy exists between children who exhibited a general danger sign and should have been referred to a hospital and those who actually were. In one set of records, only 9 percent of children with a general danger sign were referred. Either staff failed to record the referrals or they are reluctant to refer cases, knowing that it is hard for caretakers to go to the hospital because of transportation difficulties.
- The Konni and Boboye District Hospitals are not prepared to act as effective referral centers because they lack needed equipment, such as an oxygen mask (Konni).
- Some mothers received insufficient instruction in using prescriptions.
- Cold chain problems and failures to provide vaccinations are undermining IMCI's effectiveness.

D. Dissemination of Information on the Nigerien QAP

Before the QAP/BASICS merger, the Nigerien QAP disseminated information on its progress and experience, reaching health providers and managers both inside and outside the country. At a QA conference in December 1995 in Tahoua with over 200 people in attendance, presenters from all over the country discussed results from the problem-solving teams. Two-and-a-half years later, the MPH visited all the centers involved, which resulted first in a statement of intent to create a national QA program, and ultimately in a national QA policy (this had not been implemented at the time of the evaluation because of resource restraints). In addition, through quarterly meetings in Tahoua, staff in regions beyond the pilot areas have begun to learn about and generate demand for QA.

In October 1998, which was after the merger and just prior to the evaluation, the international conference in Niamey attracted 200 participants, many from Niger and the surrounding region. Presentations addressed the basic concepts of the QA approach, the child survival approach, QA rationale, the problem-solving experience, IMCI, supervisory activities and quarterly meetings, the RAHWP, and measuring client satisfaction.

The QAP staff participated in several international and regional conferences, study tours, visits, and projects, including the International Society for Quality in Health Care (ISQua) conferences from 1993 to 1995, projects in Burkina Faso, Cameroon, and Togo, a visit by an Ivory Coast delegation to Tahoua, a workshop and training in Rwanda, a visit by African experts to Brazzaville to define national QA strategies and programs, and a QA workshop in Niamey for French- and Portuguese-speaking countries.

The QAP staff also participated in a one-week study tour on QAP/IMCI in Mali and collaborated with the BASICS regional office in Senegal. All of these activities contributed to the broadcast of information on the Nigerien QAP experience. The evaluation team found that case studies, lessons learned, development of standards, procedural improvements, activity analyses, and all other QA documentation can be duplicated in Niger and other African Francophone countries

IV. Cost Analysis of the Niger QAP/BASICS Project

The evaluation team analyzed the operational costs of implementing and maintaining essential program activities. The analysis focused on costs incurred at the facility, district, and department levels, relying mostly on historical data from QAP/BASICS. They did not measure the full cost of technical assistance or project-level costs and overhead, so

estimates do not reflect the allocation of indirect costs related to the administrative infrastructure. Also, government-set per diems were high compared to devaluating salaries, so personnel costs are higher for activities that involve a per diem (training, supervision, and coaching) than they are for salary-based activities (problem solving). The former activities involve travel and consequently require per diems. In addition, several factors limit the application of these figures to Niger: government policies, the high cost of fuel in Niger, and the fact that spending was influenced by a budget. Lastly, the team was unable to obtain sufficient data to link the costs of these activities with their effectiveness.

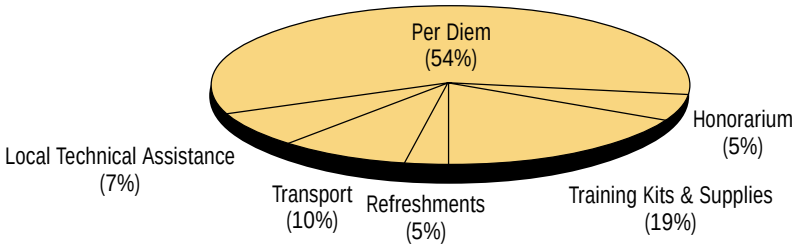
A. Sustainability Costs

The evaluation determined that a department with the size and structure of Tahoua would need to invest about 3.1 cents per capita per year to sustain essential QA activities of training, supervision, coaching, meetings, and IMCI. This figure is the equivalent of 7.7 cents per person within the catchment area of a QA health center. The projected level of investment capitalizes on the other QA activities built into the design of the program, including the development of standards and quality monitoring.

B. Basic QA and IMCI Training Costs

The evaluation team concluded that training, accounting for nearly 60 percent of total costs, constituted the most significant cost category of all the essential QAP/BASICS activities. Training costs include per diems for participants and trainers, honoraria for trainers, transportation, supplies, and refreshments. IMCI training also included accommodations and site rental. The team determined that it cost about $230 to train one provider in basic QA and $430 in IMCI (based on seven days of QA training and 11 of IMCI training). More than 50 percent of the training costs was for per diems; Figure 3 and Figure 4 show the percentages of the costs of the various components of QA and IMCI training.

Figure 3
Breakdown of QA Training Costs



Based on four training sessions held between February and April, 1998

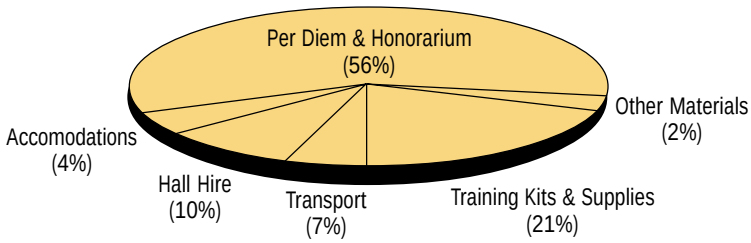
C. Training of Trainers

Training of trainers in QA helps sustain program goals well into the future. Such training is provided to selected individuals after they complete the basic QA training. The evaluation found that in Niger the cost ranged from $200 to $260 per trainee.

D. Team-Based Problem Solving

Costs from team-based problem solving accrue mostly from meetings and collecting data, and the attendant administrative costs of these activities. Problem-solving teams in Niger typically have three to eight members. Meetings average one to two hours per week, and cycles average three months. Costs varied from $78 to $130.

Figure 4
Breakdown of IMCI Training Costs



Based on two training sessions held between August and September, 1998

Data collection and supply costs had significant cost components of per diems to data collectors (approximately 30 percent), transportation or fuel costs (23 percent), and markers (20 percent). Survey forms, flip charts, and a record book accounted for just over 25 percent. The evaluation team noted that these estimates are approximate and would vary and that "safety stocking" (where teams request more supplies than necessary) tends to inflate costs.

E. Supervision and Coaching Activities

Having been instigated by the QAP, supervision and coaching are new costs to the Nigerien health system. The evaluation tried to capture all the costs associated with these activities. The team notes that under- or over-reporting of the number of coaching visits may have occurred because of idiosyncrasies in the reporting process.

Coaching activities incur costs when coaches visit health centers to participate in problem solving. Typically, two coaches would visit two centers a day (each center is scheduled for a monthly visit). In addition to the per diem paid to each coach are the costs of a driver and gas. Two districts reported having completed the coaching schedule and served as the basis for estimating costs. Averages ranged from $15 to $20 per visit, with per diems accounting for 5–15 percent and gas 70–80 percent.

All scheduled supervisory visits were reportedly conducted in four districts (Tahoua, Konni, Illéla, and Madaoua). Estimates vary by district, depending on the distribution of health centers in a district, but ranged from $20 to $35 per visit.

F. Supervision Checklist

The evaluation team estimated the cost of replicating the checklist, which would entail buying a binder, copying the checklist, and minimal training in using the checklist. This breaks down to approximately $14 per center to purchase a binder, $20 per year per center to make copies of the checklist, and $33–42 per supervisor for training.

G. Quality Meetings

The team estimated meeting costs and found that per diems, transportation, and refreshments account for substantial portions. The QAP/BASICS project set a cap on the amount that would be reimbursed for meetings, which probably influenced the amount spent on them.

District meetings are typically held quarterly, attended by 18 staff, and last two days; this costs about $200 per quarter. Department meetings are also usually quarterly; attract 24 individuals from the districts, department office, and MPH; and last three days; they total $3000 per quarter. Quality Council meetings are bimonthly and attract 24 people from a single area; they total $120 per meeting.

V. Lessons Learned

The presence of both the QAP and BASICS in Niger presented a unique opportunity for USAID and its partners to merge the two projects, improving IMCI's effectiveness by introducing it into a QA environment. In addition to the obvious benefit of reducing operational costs—which the evaluation team believes to be considerable though unquantifiable—by combining the projects, Niger benefited from the synergistic effect of supporting IMCI with quality assurance. For West Africa and the international community, it demonstrated a new approach for introducing IMCI, an approach that starts with strengthening health support systems well before IMCI is introduced.

In selected areas, QA interventions were conducted at least a year before IMCI training began and resulted in a significant improvement in supervision and the availability of essential drugs (also facilitated by cost recovery). The project succeeded in creating both a QA supervisory system and trained supervisory teams to provide technical support to healthcare staff. Peer coaching helped transform the traditional authoritarian style of supervision into a supportive, problem-solving approach.

Between 1993 and 1998, the project trained 400 healthcare workers in problem solving, resulting in the formation of over 77 problem-solving teams. About 120 problem-solving cycles were ongoing or had been completed at the time of the evaluation, improving the delivery of prenatal and postnatal care, infant consultations, family planning, immunization coverage, and nutritional rehabilitation.

The project also introduced a number of training tools that contributed to the support of IMCI. The program framework provided indicators and offered a new environment for managing healthcare organizations. Healthcare workers changed their behavior, improved their performance, developed a sense of teamwork, and experienced increased motivation.

The pilot of the combined QAP/IMCI approach demonstrates that healthcare support systems can be strengthened well before IMCI training begins. This combined QAP/IMCI approach is efficient and can be used as a benchmark for other Francophone African countries considering a launch of IMCI.

A. For Niger

The merger of the QAP and BASICS in Niger created a new way to implement IMCI that starts with interventions—such as the supervisory checklist and drug stock management—to improve the quality of healthcare. These interventions support IMCI, improving its viability and effectiveness. Previously, IMCI had never been introduced with such support. In selected areas of Niger, QA interventions had been implemented a year or more before IMCI training began and resulted in significant improvements.

The joint project brought many improvements to the healthcare system in the target areas. First, it created trained supervisory teams that can provide technical support to health facility staff. The concept of coaching facilitated the development of a supportive, team-based approach to problem solving and quality healthcare. Problem solving has had a significant, positive impact on the staff's ability to improve the quality of services at the health center and district levels.

The project also introduced tools that contributed to the support of IMCI. The RAHWP proved valuable not only in monitoring health worker performance, but also in improving it through timely feedback. Also, the supervision checklist is a helpful, comprehensive tool, albeit too long.

Because of problem-solving training and practice, health providers can identify and solve problems. They now have the skills necessary to collect, analyze, and use data; if sustained, this will have a long-term impact on healthcare services in Niger. The problems identified usually addressed issues connected to integration of BPS-related activities, such as immunization. Using data collected by the problem-solving teams themselves rather than from the national data system would likely expand problem-solving activities beyond the BPS.

Improved stocking of essential drugs/medicines, boosted by cost recovery, resulted in lower cost, more reliably available drugs/medicines, improved decision-making on the part of consumers, and ultimately, greater continuity of care and integration of services.

The evaluation team learned that several essential items were missing from some health centers, including IMCI forms, respiratory rate counters, and baby scales. If allowed to continue, this will have a detrimental impact on IMCI's effectiveness.

In addition to the IMCI form, health workers have to complete four different records for each child. Integrating these forms could lead to better health worker performance.

While healthcare providers are now capable of checking a child's vaccination status and have integrated this service into daily activities, problems in maintaining the cold chain are limiting the delivery of effective vaccinations. This has a twofold downside. First, children are not being vaccinated because health workers realize that a break in the cold chain has spoiled the vaccines, or workers are providing vaccinations without knowing that the vaccines have deteriorated. Either way, the population is unprotected. Second, IMCI records are incorrect, because staff don't realize that some vaccines have spoiled, and they are unknowingly reporting ineffective vaccinations. An investment in maintenance and new equipment could solve these problems.

Results show that health workers and caretakers are having difficulty complying with IMCI standards regarding referral of very sick children and the need to return to the health facility for follow-up visits. This difficulty, caused by Niger's dispersed population, presents a challenge not only to the health delivery system but also to IMCI standards. Further adaptation may be needed to adjust the requirements for referral and follow-up visits for this population.

The team discovered some troubling aspects of healthcare service delivery in the target areas. The district hospitals in Konni and Boboye are ineffective referral centers because equipment and trained staff are lacking. This means that children are not receiving

appropriate care and that the facilities cannot follow the IMCI protocols. Furthermore, exit interviews with mothers at these hospitals revealed that health providers should improve their communications regarding prescriptions and nutrition.

B. For the International Health Community

The project enabled Niger to play a leadership role in demonstrating an effective new way to introduce IMCI. Healthcare workers from many West African countries have participated in IMCI training in Niger, and Niger's experience in QA and IMCI was presented at a number of regional conferences and meetings. Considering the large number of trained agents and trainers, prepared materials, existing documentation, and the success of the international conference in October 1998, the project's replication in Francophone Africa should be rapid. Further, the project's benefits could spread to other continents. The supervision system's launch with the RAHWP, supervision checklist, and coaching methods were important experiments that could benefit other QA projects in Africa, Latin America, and Asia.

Several aspects of the joint project experience should serve as guideposts for those who will implement similar endeavors in the future. First and foremost, the evaluation determined that the QA approach helped improve the effectiveness of IMCI by creating favorable conditions, such as activity integration, a referral system, and regular follow-up of activities.

Using the problem-solving process, the quality teams have consistently improved the quality of healthcare and services, although progress varies. The greatest weakness of the teams is their problem analysis, specifically data collection and interpretation.

Quality teams have greatest impact when they are supported by: (a) a supervision and coaching system that the district manages, and (b) a district coordination structure like the Quality Council.

Discussion opportunities within the problem-solving cycle generated favorable group dynamics and teamwork. Experience sharing is an indispensable part of the system, and the emergence of teamwork will likely improve healthcare services in the target areas for a long time to come. Information sharing by coaches helps capture successful ideas from the health centers. Those ideas can then be disseminated to other facilities that might have similar problems.

The integration of BPS activities is a good example of process redesign that all interviewed healthcare workers noted as a product of QA efforts. An illustration of this is the new practice of providing immunization every day at all the health centers the evaluation team visited.

Problem-solving cycles average six months in length and range from three months to a year. Regular coaching, if performed systematically—as is the case at the health centers in the target areas—shortens this cycle.

Community participation varies, depending on the health center. Since commitment from the community leads to longer-lasting solutions, the health centers should do more to integrate community involvement into their QA activities.

The sometimes dramatic improvement in coverage and utilization rates—along with user satisfaction—following problem solving shows that problems are not always caused by a lack of means, but sometimes by poor service organization or management problems.

Cost recovery had a positive impact on the QA approach and IMCI. Indeed, low-cost essential generic drug availability stimulated continuity of care and activity integration. After a slight decrease when cost recovery began, utilization rates increased significantly in most cases.

C. Main Factors Limiting QA

The evaluation team identified several factors that will limit the success of QA unless improvements are made, including:

- Personnel mobility and motivation
- Old refrigerators, maintenance problems, gas shortages, unreliable car/motorbike pools
- Inaccurate and/or out-of-date demographic data
- Access to healthcare limited by the dispersed nature of the population
- Confusion of health workers caused by too many sets of clinical standards
- Unmet salary payments for health workers, which were often compensated with QAP per diem payments for supervision, coaching, and training activities
- Time away from health centers to attend training sessions

VI. Recommendations

The following is a summary of recommendations developed by the evaluation team.

A. Establishment of Standards

The MPH should establish an official inventory of existing, consistent standards on child healthcare and integrated health center management and release this inventory as a reference. It should also ensure that the new IMCI standards effectively replace the previous childcare management standards.

The MPH should create standards to improve the referral system and strengthen district hospitals so that they will be effective centers for treating referral patients.

The MPH should also expand the training of managers and healthcare workers in drug stock management. It should also improve procurement (especially for IMCI forms, chronometers, and baby scales) and the functionality of the cold chain by repairing or replacing old or damaged refrigerators.

The archival system for completed IMCI forms should be improved at the district level to facilitate data analysis and service evaluation.

Personnel transfers of QA-trained staff should be encouraged only within areas where QA is in place.

B. Supervision and Monitoring of Standards

The MPH should incorporate the quality indicators used in the RAHWP into the national data system.

The departmental level of the healthcare system should regularly update the supervisory system to adapt to changes in IMCI and other healthcare programs. The departments should promote the use of the central supervisory checklist (especially the patient interview section) to reinforce their supervision of the districts. Semiannual supervisory visits should include the RAHWP. All supervisors should be trained in coaching techniques.

Supervisors should combine supervisory and coaching visits in order to save time and money and promote optimal supervision. Healthcare workers' performance should be monitored closely to ensure that they complete forms and provide therapeutic and nutritional advice. Supervisors should provide workers with continuous feedback on their performance assessment results as quickly as possible to enable improved performance.

The supervisory system should create and support a follow-up system for requests and suggested solutions. A focal point for such requests and suggestions from each health center should be created at the departmental and district levels.

C. Coaching and Quarterly Meetings

Coaches should receive regular, ongoing QA training. They should be trained in data collection, processing, and interpretation techniques (given the importance of these skills in monitoring activities). Monthly coaching activities should be conducted at the department and district levels when new problem-solving cycles occur. Guidance should be provided to enable department-level coaches to continually update their knowledge.

Periodic meetings should be scheduled at all levels on the functioning of management teams. In addition, quarterly meetings should continue so that healthcare workers will have ongoing training, motivation, and opportunities to evaluate themselves, share experiences, and set benchmarks.

D. Problem Solving

Teams at the national, departmental, and district levels should conduct problem-solving cycles regularly to improve support systems, retain personnel, and prepare to learn other, higher-level QA techniques, such as quality design. Districts should systematically encourage community participation within the problem-solving teams.

E. Sustainability

The MPH should support the rapid implementation of a QA curriculum in training schools and support and distribute QA documents, including a QA skills and methodologies guide.

The MPH should investigate methods to use cost recovery to finance essential QA activities. It should also explain and show the QA cost/activity system to various sponsors. Other healthcare partners in each district should be made aware of QAP/IMCI activities.

On a departmental level, the MPH should establish a transportation system—including cars in working condition, available spare parts, and trained mechanics—to ensure the viability of key QA activities (e.g.,

coaching, supervision, or transfers required by IMCI).

Districts should encourage local participation in covering costs for fundamental QA activities (e.g., fuel and food expenses, supplies for quarterly meetings, coaching and supervisory activities, and transportation). A plan should be developed to transfer responsibility for the project to other healthcare partners.

F. Dissemination and Documentation

Each level of the healthcare system should regularly coordinate operational research activities to disseminate results achieved. Regular forums to share QA experiences should be established. A sample group should be created to do operations research using the QAP/IMCI experiences and progress in Tahoua and Boboye. Supervisors should train departmental and district supervision teams in operational research. Additionally, service-provider satisfaction has not been documented and should be pursued in further QAP/IMCI studies.