

RESEARCH AND EVALUATION REPORT

# Improving the Quality of Guatemala's Public Health System: A View to Institutionalization

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Rodrigo Bustamante, University Research Co., LLC  
Elena Hurtado, University Research Co., LLC  
Karen Askov Zeribi, University Research Co., LLC

**DISCLAIMER**

The views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

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## Abbreviations

CQI	Continuous Quality Improvement
DAF	<i>Departamento Administrativo Financiero</i> (Administrative and Finance Department)
DAS	<i>Dirección de Área de Salud</i> (Health Area Directorate)
ENSMI	National Maternal and Child Health Survey
FGD	Focus Group Discussion
GAFM	General Administrative and Financial Management Directorate
HCI	USAID Health Care Improvement Project
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
HR	Human Resources
IHI	Institute for Healthcare Improvement
ISO	International Organization for Standardization
MNH	Maternal and Neonatal Health
MSPAS	Ministry of Public Health and Social Assistance, Guatemala
PAHO	Pan American Health Organization
PDSA	Plan-Do-Study-Act Cycle
ProCONE	Promotion of Essential Obstetric and Neonatal Care
QA	Quality Assurance
QC	Quality Control
QD	Quality Design
QI	Quality Improvement
QMS	Quality Management System
STI	Sexually Transmitted Infections
UNICEF	United Nations Children’s Fund
URC	University Research Co., LLC
USAID	United States Agency for International Development
WHO	World Health Organization

## EXECUTIVE SUMMARY

University Research Co., LLC (URC), funded by the United States Agency for International Development (USAID), has provided support to the Guatemalan Ministry of Public Health and Social Assistance (MSPAS) for 13 years, the last four years of which have included intensive support in improving the quality of health services through improvement collaboratives and the certification of selected health facilities and management processes based on International Organization for Standardization (ISO) quality standards. This study aimed to learn how much of this support and quality improvement capacity have been appropriated, or institutionalized, by the Guatemalan MSPAS and could be sustained without URC's support, despite important changes in the Guatemalan political context (i.e., the new President taking office on January 2012 with subsequent changes in central level MSPAS authorities and Health Area Directors).

URC's Institutionalization Model served as the construct to carry out this study. The model is described in further detail in the monograph "Sustaining Quality Healthcare: The Institutionalization of Quality Assurance" (Franco et al. 2002) and in Annex 3. This model highlights:

- An internal enabling environment that is conducive to the continuous improvement of quality, including: written policies, leaders, core values and sufficient resources to support quality.
- A structure for quality within the organization, including a clear delineation of roles, responsibilities, and accountability.
- Support functions with formal, ongoing processes for capacity building, communication, and rewarding quality work.
- The necessary skills and methods to improve outcomes (such as quality design, measurement, and specific quality improvement methods/ tools).

The institutionalization or integration of each of these facets of quality occurs in phases. For the purposes of this study, these phases were summarized as: the experimental stage or preparation, expansion phase or action, and the consolidation phase or maintenance.

Both quantitative and qualitative data were collected from stakeholders across the central level, San Marcos Health Area, and six districts that have participated in quality improvement programs: San Pedro, Tejutla, Concepción Tutuapa, San Lorenzo, Tacaná, and Tajumulco. These data were analyzed to fulfill the study objectives, and the findings are presented in detail in this document.

This study captured the following key learning for its four primary objectives:

- **Describe and analyze the overall degree of institutionalization of quality improvement.** While all MSPAS levels showed commitment and ownership of quality, the districts and health facilities involved in collaboratives and certification according to International Organization for Standardization (ISO) criteria showed the most advanced stages of the institutionalization of quality. The Health Area level expressed commitment to quality, but expressed doubt about the central level's long-term commitment to quality. The central level MSPAS demonstrated a high level of ownership for quality, but also the least amount of certainty about the continuation of quality improvement (QI) without URC's support.
- **Analyze the elements of the Institutionalization Model that still need further support to sustain and deepen improvements.** Particular elements of the institutionalization model were highlighted at all levels as areas in need of further development, especially: financial resources for quality, recognition of QI work, capacity-building, and information and communication.
- **Identify barriers and facilitating factors to further institutionalize quality within the MSPAS.** There was evidence of common facilitating factors across all levels of the MSPAS,

including: leadership, support functions, team work and staff commitment, and technical capacity for implementation. Common barriers were also reported, including a lack of financial resources, weak information systems, and limited personnel and dedicated time.

- **Provide recommendations to further institutionalize quality within the MSPAS.** Many recommendations result from this study, including:
  - 1) Increase dissemination and communication for QI,
  - 2) Strengthen the ability of the MSPAS levels (especially the central level) to manage and oversee QI,
  - 3) Expand participation of personnel in QI activities,
  - 4) Strengthen elements of the institutionalization model that were highlighted as weaknesses,
  - 5) Deploy a variety of approaches to improve quality, and
  - 6) Strengthen the QI skills and core values that will facilitate quality improvement.

The authors and URC believe these findings and recommendations can guide future efforts to sustain and institutionalize quality improvement in Guatemala's health system—building on the momentum from the identified strengths and specifically targeting the areas that need further development.

# I. INTRODUCTION

## A. Context for Improving the Quality of Guatemala's Public Health System

Despite improvements over the last 20 years Guatemala's 14 million people continue to face significant political, economic, and social problems. Statistics published by the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) illustrate these continued struggles: Guatemala holds one of the highest maternal mortality rates in Central America, reported as 110 deaths per 100,000 live births in 2008 (WHO/UNICEF 2012). The lifetime risk of maternal death in Guatemala is 1 in 210, while in nearby Costa Rica, the risk is much less at 1 in 1,100. The neonatal mortality rate in 2010 was 15 per 1,000 live births (compared to 6 per 1,000 live births in Costa Rica). Nearly half of the children under the age of 5 live with chronic malnutrition (ENSMI 2008-2009). Thus, Guatemala's Ministry of Health and Social Welfare (MSPAS) is faced with a significant challenge to address these immediate and pressing needs within its 29 Health Areas, corresponding to 22 health departments and 333 districts, using the limited existing resources available.

Within this context, the MSPAS began a partnership with University Research Co, LLC (URC) in 1999 with support from the United States Agency for International Development (USAID), to strengthen capacity, deliver quality services, and improve the quality of Guatemala's health system. The evolution of URC's support to the MSPAS is summarized in Figure 1. With USAID funding, URC initiated support in 1999 with the Quality Assurance Project and then *Calidad en Salud*; starting in 2008, URC provided assistance to the MSPAS in both health care quality improvement collaboratives and International Organization for Standardization (ISO) certification.

Over this period, URC has provided both depth and variety in terms of the types of support to improve the quality of care. After 13 years of working in partnership, this study aspired to learn which aspects of quality improvement—especially with regards to those resulting from the collaboratives and ISO certification—have been appropriated by the MSPAS and could be sustained without URC's continued involvement, particularly in view of important changes in the Guatemalan political context. In November 2011, presidential, congressional, and mayoral elections took place, resulting in changes in central level MSPAS authorities and Health Area Directors.

The partnership between MSPAS, URC, and USAID over the last 13 years covered a wide variety of service areas, including family planning, management of childhood illnesses, and primary care to high-risk Mayan populations. Examples of results in maternal and neonatal care, the particular focus of this study, include:

- Increased use of newborn care and contraception
- Improved reliability in the application of the active management of the third stage of labor criteria in eight health areas
- Improved reliability in the application of routine newborn care criteria in 72 birthing centers
- Certification in 2010 of MSPAS budgeting and health services processes at the central level and San Pedro Health Center, respectively, as meeting ISO 9001:2008 norms.

Examples of the results achieved through improvement methods are highlighted in Annex 1. A brief description of the ISO approach is shown in Box 1. The improvement collaborative approach is briefly described in Box 2 and discussed in more detail in Annex 2.

Figure 1. Summary of URC Support to MSPAS 1999-2012



### Box 1. A Brief Summary of ISO Methodology

The International Organization for Standardization is the world's largest developer and publisher of international standards. ISO constitutes a network of the national standards institutes of 163 countries, one member per country, with a central Secretariat in Geneva, Switzerland, that coordinates the system.

The ISO family of quality standards is among the most popular quality improvement approaches in the world. The ISO methodology is based on the premise that product quality can be assured through standardization, verification, improvement, and control of processes in production and in the services that support production.

The ISO methodology is based on the continuous quality improvement cycle of implementation, documentation, analysis, and improvement. ISO provides generic standards for processes, but does not dictate how these should be implemented. A technical committee defines the procedures needed to complete a process. The scope of documentation required by ISO changes based on the size and complexity of an organization and the scope of processes being certified.

ISO has published more than 17,500 international standards across a variety of activities and types of organizations, including agriculture, construction, engineering, medical devices, and many others. Given this diversity, the ISO documentation process is unique for each certification process. ISO standards and the results are not in the public domain; as a result, the complexity and scope of the documentation process is also restricted.

The ISO system has established seven general steps for certification:

- 1) **Definition of Reach**, in which the scope of the effort and processes to certify are defined, as well as the team and staff affected by these processes;
- 2) **Orientation and Training**, in which ISO norms are studied, and staff involved in the reach are sensitized and trained;
- 3) **Quality Improvement Structures**, in which commitment of senior managers to the process is ensured, and Quality Committees are formed at each level of the organization;
- 4) **Documentation**, in which diagnostic studies to identify gaps against standards are conducted, procedures are standardized and documented, processes are redesigned, and records of all interventions are developed and maintained;
- 5) **Implementation**, in which standardized processes are applied, reviewed for their functionality, ease of use, and impact and corrective actions are made when gaps and weaknesses are identified;
- 6) **Audits**, in which internal and external audits are conducted and certification is obtained; and
- 7) **Follow-up and Maintenance**, in which work to addresses gaps is carried out, and Quality Committees regularly monitor performance against quality objectives and solve problems.

## B. The Institutionalization Model as a Study Framework

Health systems and organizations working to improve the quality of care aim not only to achieve significant results today, but to embed quality improvement into the organization so that the efforts are long-lasting and self-sustaining. Quality improvement identifies where gaps exist between services actually provided and expectations for services. It then reduces these gaps not only to meet customer needs and expectations, but exceed them with unprecedented levels of performance.

## Box 2. The Improvement Collaborative Approach

An improvement collaborative is a shared learning system that brings together a large number of teams to work together to rapidly achieve significant improvements in processes, quality, and efficiency of a specific area of care, with intention of spreading these achievements to other sites.

Improvement collaboratives seek to adapt and spread existing knowledge to multiple sites. This existing knowledge may consist of clinical practices based on scientific evidence, proven practices that are widely considered as “good” or even “best”, or any other changes to the existing way of doing things that have been shown to result in better health care. Such knowledge is the collaborative’s “change package”: the changes in processes and organization of care that the collaborative seeks to introduce, refine, and spread.

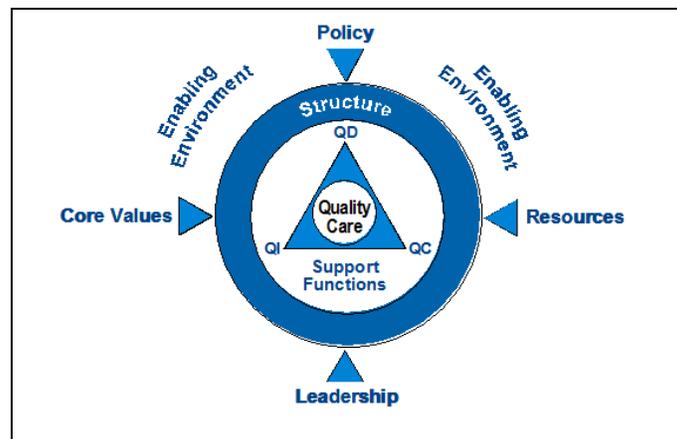
URC began to work with the improvement collaborative approach in two regions in the Russian Federation in 1998 to develop and then scale up improved models of care for the management of hypertension and neonatal respiratory distress syndrome. In 2003, through the Quality Assurance Project, URC began to adapt the approach to resource-constrained settings where government-funded health systems predominate and to apply it to other clinical areas, such as essential obstetric care and HIV/AIDS care.

Furthermore, health care delivery organizations need to be agile enough to constantly grow and transform at a pace to keep up with the rapid growth in new evidence in medicine and the constantly changing needs of communities. To achieve this constant evolution, quality improvement methods need to be integrated into the way things are done and woven into the “fabric” of the organization. This state of sustainability or integration has been described by URC as “institutionalization,” which is:

*“The process through which a set of activities, structures, and values becomes an integral and sustainable part of an organization. Institutionalization means that people know what needs to happen to provide quality care, they have the skills to make it happen, and they are committed to making it happen over time within the available resources. This notion encompasses a broader set of dimensions than financial sustainability alone.” (Franco et al. 2002)*

The concept of an “Institutionalization Model” (see Figure 2) is further described in Annex 3. The model presented in that monograph serves as a useful construct for analyzing and planning the institutionalization of quality, especially since there are few comparable models for improving the quality of health care delivery systems in developing countries. Therefore, the ideas presented in the monograph were selected as the basis for this study, investigating each of the major components of the model.

**Figure 2. Model for the Institutionalization of Quality in Health Organizations and Systems**



The model looks at three elements needed to produce quality health care. The first element is the enabling environment for quality, which includes:

- Written **policies** that provide support, guidance, and reinforcement for quality as an integral part of the organization
- **Leaders** who work directly and openly to set quality priorities, model core values, advocate for supportive policy, and allocate resources for quality.
- **Core values** that emphasize quality care and the client as central.
- Sufficient **resources** (human and material) allocated for improvement work.

The second element in the model is the **structure** for quality within the organization, including a clear delineation of roles, responsibilities, and accountability. While there is no singular “right” structure, it should include clear coordination, oversight, support, and expertise.

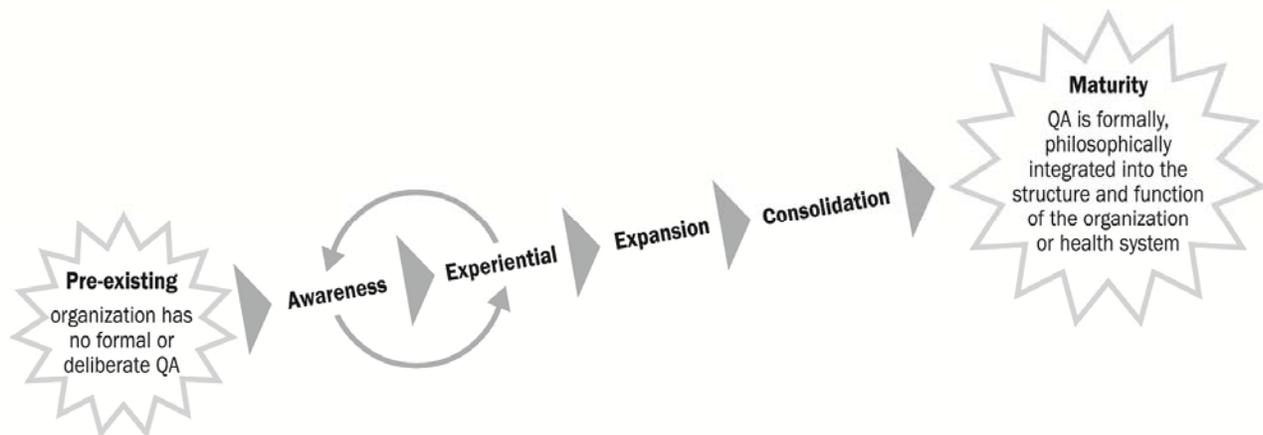
Finally, **support functions** with formal, ongoing processes to develop and maintain staff capacity to improve quality are needed, including:

- **Capacity building:** All staff possesses the knowledge and skills necessary to improve quality. The organizational capacity-building plan provides continuous support to build and reinforce new QI skills.
- **Communication:** Processes exist to disseminate information about QI work to stakeholders to determine policy, advocate for resources, promote healthcare services, and spread learning.
- **Rewarding quality work:** Individuals and teams are recognized and/ or incentivized for their quality efforts and outcomes.

At the core of the model is a triangle for quality care, surrounded by the variety of skills and methods that will need to be deployed to improve outcomes: quality design, measurement, and specific quality improvement methods/tools.

Institutionalizing quality occurs over time and most importantly, through experience. The monograph “*Sustaining Quality Healthcare: The Institutionalization of Quality Assurance*” also describes the typical phases which an organization or health system may undergo during the process of institutionalization, shown in Figure 3. These phases provide a useful way for an organization to assess itself on the evolution of quality and determine strategies to further institutionalize quality. It is important to mention that the eight elements of the institutionalization model described above may not progress along the phases listed in Figure 3 at the same rate; for example, leadership may be very strong in the “experiential”

**Figure 3. Phases of the Institutionalization of Quality**



phase, while formal support functions (capacity building, information and communication, and rewarding and recognizing quality) may be in the pre-existing or awareness phases. At times, the evolution may not be linear; for example, a new leader that is not as supportive of or knowledgeable about quality could lead to regression in many elements, such as the resources allocated or core values expressed by employees.

As shown in Figure 3, the institutionalization of quality occurs over time in phases. To simplify the analysis, these phases were condensed into three phases and used to estimate the current phase of institutionalization of quality within the MSPAS.

**Experimental stage or preparation:** This phase represents the beginning stages with learning about quality and running pilot projects. As this a starting place, many elements of the institutionalization model would not be in place (e.g., explicit policies about quality, core values, specific resources for quality, clear units or structures to oversee/ coordinate quality, plans for capacity-building, or mechanisms to share results or recognize QI results). This is a period when experimentation occurs and will for improvement is built.

**Expansion phase or action:** This is an intermediate phase in which ample experimentation and piloting has occurred; quality “champions” have been developed, and they advocate for the expansion of quality efforts. During this phase, quality begins to become more formalized with the development of explicit policies, stated core values, allocated resources, defined formal units, plans for capacity-building, and mechanisms to share and recognize results. During this period, the commitment to and leadership of quality efforts grows substantially; specific elements or components may grow at different paces (e.g., capacity-building in improvement might be very strong, while defined quality units and structures may be in development).

**Consolidation phase or maintenance:** This phase represents an appropriation and ownership of improvement, such that the systems to support, oversee, and coordinate quality are clear and sustained. Examples of how this final phase might be characterized include: QI policies are expressed as specific goals and plans for improvement; QI activities are included in written staff job descriptions and daily staff routines; QI resources are routinely incorporated into budgets; there is a team of QI experts and a continuous educational program; data are used to make decisions for continuous improvement; and improvement work is recognized and taken into account to promote and develop human resources.

Although the institutionalization model was not applied systematically to plan and execute the work that URC carried out in partnership with the MSPAS, it provides a useful construct to retrospectively assess the degree of the institutionalization of quality within the MSPAS’ administrative and service levels after the last 13 years of working together to improve Guatemala’s health care delivery system.

## C. Background Research

Little research has been done to characterize or describe institutionalization of quality in health systems in resource-constrained settings. Since much of the research to date has been conducted by URC, the authors reviewed other institutionalization studies by URC to draw upon the design, tools, and learning to ensure that the key lessons from these studies as well as one study in the United States would be incorporated into the study in Guatemala. Annex 4 provides a summary of findings from these studies.

## II. Methodology for Studying the Institutionalization of Quality in Guatemala’s Health System

### A. Study Objectives

This study aimed to assess the overall depth of the institutionalization of QI at all levels of the Guatemalan MSPAS, including the central, area, and district levels (which encompass health facilities).

The study focused on MSPAS services in general, but particularly emphasized maternal and neonatal care services, as these have been the special emphasis of the health quality improvement work in Guatemala.

The specific objectives for this study include:

- 1) Describe and analyze the degree of institutionalization of quality improvement overall for the MSPAS at all levels, for the Promotion of Essential Obstetric and Neonatal Care (ProCONE) Improvement Collaborative, and for ISO certification of financial processes.
- 2) Identify which of the eight essential elements in the institutionalization model—policy, leadership, core values, resources, structure, capacity building, information and communication, and rewarding quality—need further support to sustain and deepen improvements.
- 3) Identify barriers to and facilitating factors for further institutionalizing quality within the various levels of the MSPAS.
- 4) Develop recommendations to advance institutionalization of QI in the MSPAS in Guatemala.

## **B. Study Design, Data Collection Methods, and Sampling**

This study was cross-sectional, providing a "snapshot" of the institutionalization of quality improvement in Guatemala in 2011. The study utilized a combination of quantitative and qualitative data. A purposeful non-random sample was used for this study; the units selected to participate in the study were those that had experience in ISO and/or collaboratives. Within these units, the members of the QI team who were more likely to have knowledge and opinions regarding institutionalization were interviewed for the study's qualitative components. However, the self-administered questionnaires were applied to all staff present in the selected facilities when the study was conducted. Data collection at the various levels of the MSPAS included a variety of methods, including in-depth interviews, focus group discussions with key stakeholders and informants, and self-administered close-ended questionnaires. Key documents (e.g., policies, manuals, norms, resources) were also reviewed to provide additional information and verification about the stage of institutionalization. Specific data collection instruments included:

- Guide for open-ended interviews with a combination of structured and open-ended questions.
- Three self-administered questionnaires with close-ended questions and Likert-type scales (1 to 5 points) on the key elements of the institutionalization model and stages of institutionalization. This questionnaire was customized for personnel at the various levels of the MSPAS.
- A self-administered, close-ended questionnaire on institutionalization stages for workers directly involved in QI work (collaborative and/or ISO certification).
- Register to record observations from supporting documents (e.g., QI policies, training manuals, reports, etc.)

The study sample and data collection methods are summarized in Table 1. The San Marcos Health Area was selected as it is the only Health Area that has participated in both the ProCONE strategy and ISO certification from the start. Within the San Marcos Health Area, six districts were selected: San Pedro Sacatepéquez, Tejutla, Concepción Tutuapa, San Lorenzo, Tacaná, and Tajumulco. All of them have implemented the ProCONE strategy with the collaborative methodology, and the first three (San Pedro Sacatepéquez, Tejutla, Concepción Tutuapa) also applied the ISO norms certification. The San Pedro Sacatepéquez Health Center was certified in 2010, and the Tejutla and Concepción Tutuapa Health Centers were recommended for certification in 2011.

The MSPAS approved this study as part of the routine QI activities conducted. Verbal informed consent was obtained from all health personnel that participated in interviews, discussion groups, and questionnaires.

**Table1. Sampling and Data Collection Method by Levels within the MSPAS**

<b>MSPAS Level</b>	<b>Sample</b>	<b>Data Collection Method</b>
Central	- 12 individuals <sup>1</sup> from units in the Quality Management System (QMS)	8 interviews with open and structured questions 1 focus group discussion (FGD), including 4 people from senior level of the QMS
	- 42 people working in the QMS	Structured questionnaires
Health Area (San Marcos)	- 3 members of the QI area team	Interviews with open and structured questions
	- 31 Health Area workers	Structured questionnaires
Districts in San Marcos Health Area: San Pedro, Tejutla, Concepción Tutuapa, San Lorenzo, Tacaná and Tajumulco	- 16 district members of the QI district/health center teams	6 semi-structured interviews 1 focus group discussion in the Tejutla Health Center (10 people) (FGDs were not performed in the rest of the health centers because the study was carried out as part of the regular monitoring process, and several members of the staff were on vacation)
	- 117 personnel from health facilities	Structured questionnaires

### III. RESULTS

This section presents the results according to the study's first three objectives. The findings draw on three primary data sources: 1) self-administered questionnaires about the eight elements of institutionalization for the three levels within the MSPAS, 2) open-ended interviews with key stakeholders, and 3) qualitative data from discussion groups at the central and district levels (no discussion groups were done at the area level).

#### A. Describe and Analyze the Degree of Institutionalization of Quality Improvement

The stage of institutionalization of quality in the MSPAS was analyzed from two angles: knowledge and practice. The first angle involved understanding if respondents had heard about quality and had a basic knowledge of how it fits into one's role. The second angle looked at participation in quality improvement activities, especially with regards to how URC supported the MSPAS with collaboratives and ISO. Developing this hands-on experience with quality is a pre-cursor to institutionalization.

Figure 4 shows the responses of respondents at the three levels of the MSPAS to the initial question about their participation in QI activities. It is interesting that while 100% of the respondents across the three levels had heard about the quality activities in their organization, the percent that had participated widely varied by level and by type of QI effort (collaborative vs. ISO). Participation of personnel (across

<sup>1</sup> Included representatives from the National Reproductive Health Program and the Immunization Program.

all levels) was higher for ISO with 93% at the central level, 77% in health areas, and 90% in participating districts; 34% of health personnel participating in the collaborative model also reported participating in ISO. The collaborative approach showed a strong “bottom-up” approach to quality with only 3% of the central level personnel actively participating, but 62% in health areas and 66% in districts. The strongest participation across all levels was the deployment of both the ISO and collaborative strategies together.

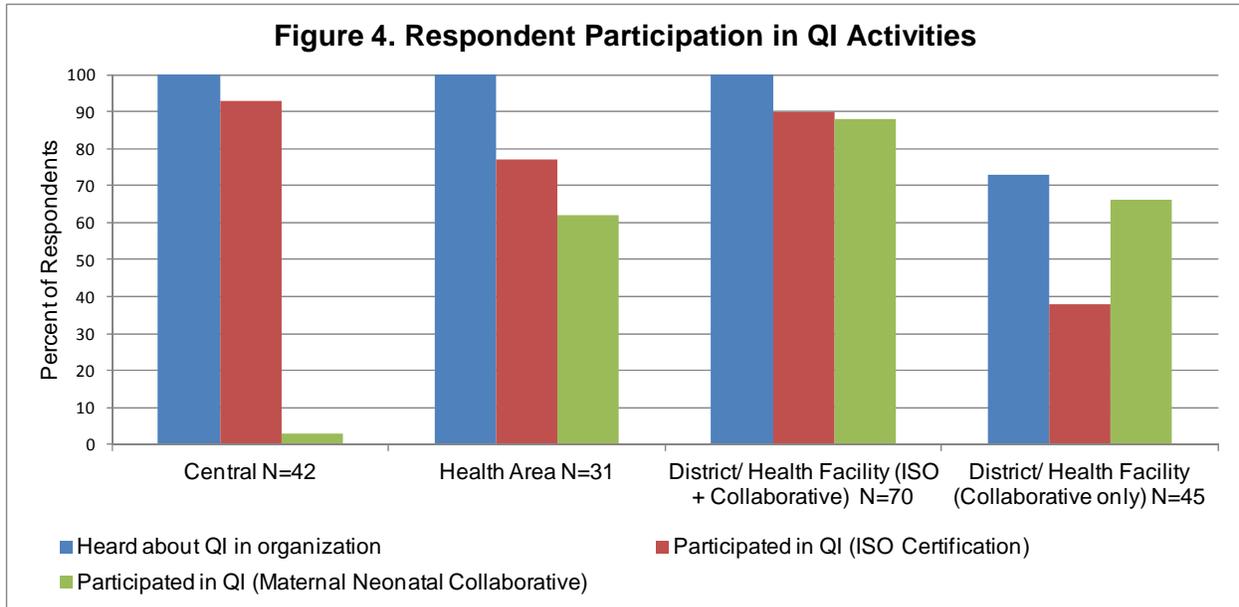


Table 2 summarizes the degree of agreement among respondents to some basic statements about the institutionalization of quality. These statements did not ask about specific aspects of the institutionalization model but rather tried to assess the general level of belief about the level of sustainability of QI. Responses to statements about QI—where the highest degree of agreement was 5 and the lowest degree of agreement 1—were averaged for each level of the MSPAS. In general, there were high scores of agreement across the major elements studied for the three levels—central, area, and district/health facility. Statements with highest scores and highest level of agreement across MSPAS levels are listed first in Table 2. There are several areas showing disagreement, which will be discussed below by the different MSPAS levels.

### 1. Central Level

Central level personnel responded with high agreement to the phrases in Table 2. The phrases that were the lowest were, “QI efforts are valued by the central level” and “QI efforts will be maintained after the project ends”. Although these phrases were the lowest rated at the central level compared to the others, there is a sharp contrast with the responses from health areas and district/health center levels which are much lower; this illustrates doubt by lower levels that the central level values quality improvement efforts and that those efforts will be sustained. Also, these results are a reflection of the current political reality which will certainly involve change in key processes and structures as a result of changes in government and central level MSPAS authorities.

Nevertheless, the qualitative data from the focus group with the senior management team<sup>2</sup> from the central level Quality Management System (QMS) indicated a high sense of value for QI efforts. One

<sup>2</sup> This focus group included the Administrative and Technical Vice Ministers, the Administrative and Financial General Manager, and the Administrative Vice Ministry’s Advisor. The members of the senior management team of the QMS are the individuals who are most familiar with quality improvement in the MSPAS, including both financial and administrative processes as well as maternal, newborn, and sexually transmitted infections/HIV processes.

participant in the focus group noted, "We didn't limit the work to the administrative and financial management, but also covered the provision of maternal and neonatal services as well as STI/HIV services."

**Table 2. Average Rating of Other Elements of Quality by Staff at MSPAS Central Level, San Marcos Health Area, and Selected Health Centers in San Marcos (5=completely agree and 1=completely disagree)**

<b>Statements about QI</b>	<b>Central Level, n=42 Average rating</b>	<b>Health Area, n=31 Average rating</b>	<b>District/Health Facility (ISO and ProCONE), n=70 Average rating</b>	<b>District/Health Facility (ProCONE only), n=26 Average rating</b>
The client is a central element	4.9	4.6	4.9	4.8
Quality improvement activities are part of everyone's job	4.8	4.7	4.9	4.6
There is interest in quality improvement activities	4.6	4.7	4.9	4.6
Quality improvement is an important issue/theme	4.7	4.6	4.9	4.4
There is commitment to quality improvement activities	4.7	4.5	4.9	4.2
There is a vision of systems and processes	4.6	4.3	4.8	3.8
Quality improvement efforts are valued by Central level	4.4	3.0	3.7	3.0
Quality improvement efforts will be maintained even if the project ends	4.2	3.8	4.7	4.2

Source: Self-administered questionnaire

This central level discussion group also highlighted a high degree of ownership and empowerment within their team. They referred to quality management as "our innovation" and "the unit that we created." When asked for specific examples of results and achievements as a result of using improvement methods, the QMS stakeholders highlighted the following examples (please see also Annex 4 for more details):

- Reduced response times for financial processes
- Improved user satisfaction with services, both from the units of the Administrative and Finance Department or DAF, as well as health care services
- Documented quality care with two ISO-certified STI/HIV services in the capital city and six maternal and neonatal care services in different health areas throughout the country
- The re-certification of San Pedro Sacatepequez Health Care Center in San Marcos and the role of civil society participation in achieving this improvement
- Trained personnel, estimated to have reached 70 individuals in financial administrative services and about 200 personnel in maternal and neonatal and STI/HIV care.

The discussion group participants indicated that improvement methods have been introduced and used over time to improve a variety of health services in Guatemala. One of the members of the discussion group shared that while the methodology was first initiated to improve the integrated management of childhood illness, the lessons over the years are applicable to any public health issue. Regarding the QMS, he shared: "It has given me a different view of what can be done in public health."

In terms of further development of improvement in the Guatemalan health system, the QMS senior management stressed the following: "Not just do it and know it [senior management team] but also to publicize it and let people know of the Ministry of Health's commitment to the Quality Management System." One of the members also advocated for the expansion of the scope of the system, from the Financial Unit to the central level Department of Human Resources Development and Training.

## 2. Health Area Level

The data collected among personnel at the Health Area (*Dirección de Área de Salud* or DAS) level showed a high degree of interest in quality. Health Area personnel mentioned that quality improvement activities are part of everyone's job and emphasized the importance of the client as a central element in quality activities. Health Area personnel also rated higher the importance of quality improvement for technical teams.

Two elements received intermediate ratings: a commitment to quality improvement activities and a vision of systems as processes in the development of QI activities. This interest and commitment, however, was accompanied by an uncertainty about the value that the central level MSPAS placed on QI activities and the level of sustainability of QI after URC's support ended. Unfortunately, the qualitative data collected at this level did not provide much insight into this finding.

## 3. District Level

District personnel responded with the most certainty that improvement efforts would be sustained/continued after URC support ended (see Table 2). Strong statements in agreement were especially pronounced from the districts and facilities that participated in both ISO and collaboratives. Again, the lowest rated statement related to the value that the central level places on quality activities.

The 23 leaders of quality improvement teams rated team practices using a 1 (completely disagree) to 5 (completely agree) scale. Table 3 presents the average rating for each statement. The team members consistently agreed or strongly agreed with most of the statements, especially those directed at team functioning. All but one of the variables received a high level of agreement; the exception was "I have the necessary resources and equipment to carry out my QI duties."

**Table 3. Average Rating Given by Quality Improvement Team Leaders on Statements Regarding Their Team's Practices**

(Scale: 1=completely disagree; 5= completely agree; n=23)

Highest Scoring Variables	Lowest Scoring Variables
<ul style="list-style-type: none"> <li>I believe what I do as part of a member of a QI team is very important (4.9)</li> <li>Our QI team is well respected by all management staff in this level including administrative staff (4.7)</li> <li>Within the QI team, I have opportunities to advance in my learning or in my profession (4.7)</li> <li>Our QI team will continue functioning after the project is over (4.7)</li> </ul>	<ul style="list-style-type: none"> <li>I have the necessary resources and equipment to carry out my QI duties (2.4)</li> <li>When a problem is not under control of the quality improvement team, external individuals are brought in to help resolve the issue (4.2)</li> <li>QI team members are recognized when they carry out good work (4.1)</li> </ul>

These high scores of team functioning were also reflected in the qualitative data from interviews with team members that indicate that quality improvement is not a separate activity, but internalized into the way things are done:

- “We have to maintain the standard of the client. Now everything is much more organized, clearer and everything is a part of us.” (Team member from San Pedro)
- “It isn’t more work—now we just do it better and give better care.” (Team members from Concepcion Tutuapa)

Qualitative data from district level and health facility QI teams identified a breadth of areas that have been addressed with improvement methods, such as: client satisfaction, internal communication, and maternal care processes (pre-natal, delivery, post-natal, and removing hazardous waste).

Some concrete examples provided by team members stated that they:

- “Changed the order of services such that pregnant women receive lab results before consultation with the clinician. This allows the clinician to address specific health issues during the consultation, such as blood type or screening for urinary infection and syphilis.” (Team member from San Lorenzo)
- “[Started a new practice to] allow a mother, sister, husband, or traditional birth attendant to attend a delivery.” (Team members from Concepcion Tutuapa)

Although maternal and neonatal care processes surfaced as the most common examples cited for improvement work, teams also noted that improvement work had expanded beyond this initial focus: “Our scope is actually for maternal and neonatal care, but now we are applying [quality improvement] at every level; we are not only attending mothers and newborns with quality and warmth, but also all clients, stakeholders, and communities.” (Team member from Tejutla)

Comments from interviews at the district level largely focused on embedding quality as a core value. The following statements illustrate how quality was internalized by the QI team members working in direct care:

- “People are conscious that they are being evaluated partially for their role in the production [of services]; if you treat people badly, they won’t come back or won’t come back at this hour or this day. Awareness has been important for this. Not seeing the patient like an enemy but rather the reason that we are here.” (Team member from San Lorenzo)
- “Continuous improvement is a value in and of itself: quality and warmth, ethics, honor, honesty, security and perseverance [are values] to maintain services.” (Team member from San Pedro)

## **B. Identify the Essential Elements of the Model Needing Further Support to Sustain and Deepen Improvements**

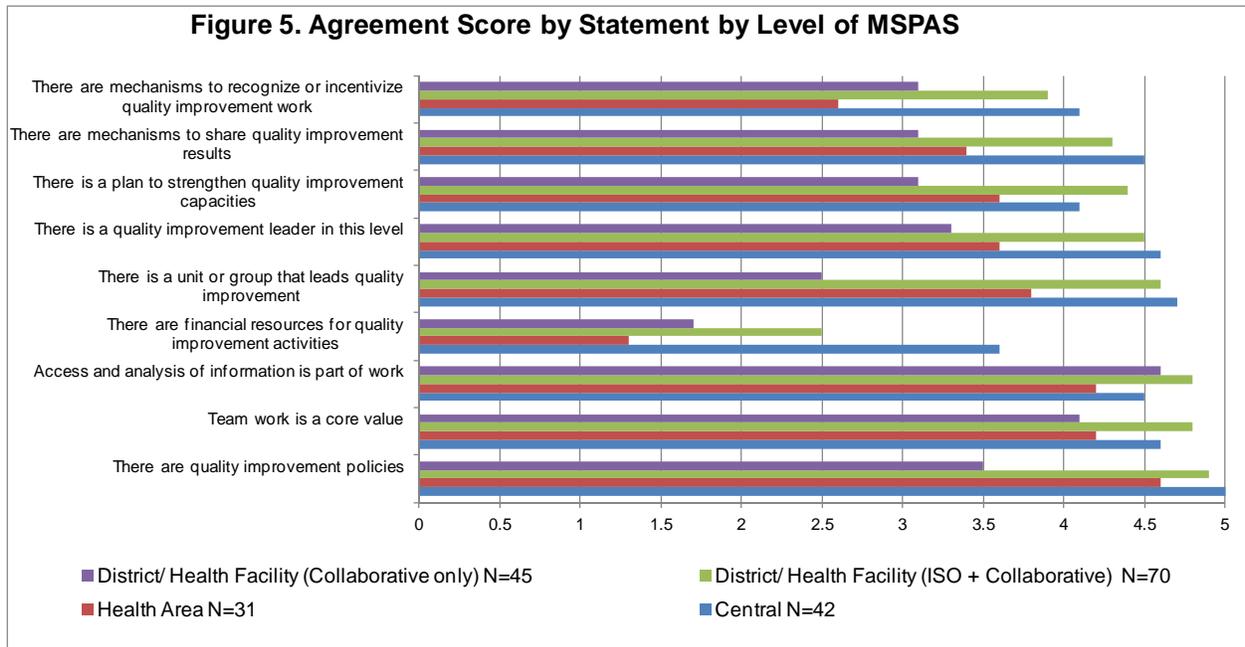
Among the key elements for institutionalizing quality improvement are policy, leadership, core values, resources, structure, capacity building, information and communication, and recognition of quality efforts. Objective two of the study focused on staff opinions about each of these key elements for the three MSPAS levels. Additionally, questions about QI competencies were also asked in order to determine if staff had acquired the necessary knowledge and skills.

### **1. Elements of the Institutionalization Model**

Four structured questionnaires used scales whereby [1] meant “completely disagree”, [5] meant “completely agree”, and [3] was the neutral point at which the person was indifferent about the statement. The survey questions were customized for the different MSPAS levels. The average ratings of staff members at different levels assigned to each item on the scale are presented in Figure 5.

Respondents were also asked about their perceptions about the existence of the elements of the institutionalization model in Guatemala. In general, the MSPAS central level responded to all but two statements (team work is a core value and access to/analysis of information is part of work) more positively than the other MSPAS levels. In some cases, the gap in perception was quite large. For example, central level participants responded with an average score of 3.6 to the statement “there are

financial resources for QI activities”, compared to 1.3 by respondents at the Health Area level, 2.5 for districts participating in ISO and the ProCONE collaborative, and 1.7 for districts only participating in the collaborative. This discrepancy was also noted as to the existence of a unit/group that leads QI (rated 4.7 by respondents at the central level versus 2.5 by district/health facility level respondents participating only in a collaborative).



Interestingly, the central and district levels participating in both the improvement collaborative and ISO responded more positively to certain statements compared to the Health Area and the districts participating only in the collaborative: recognition/incentives for quality efforts, mechanisms to share results, plan to strengthen QI capacity, and QI leadership at their level. This may be due to the close partnership forged between the central and health service delivery levels in order to improve processes to achieve certification. Although the central level MSPAS responded that there are mechanisms to recognize improvement, respondents clarified that this is not a strong point of MSPAS’ quality system.

The agreement scores around the existence of QI policies are also interesting. The scores were high for the central level (5), Health Area level (4.6), and district/health facility participating in ISO and collaborative (4.9); the district/health facility respondents that participated only in a collaborative responded with a much lower score of 3.5. These quantitative data were also validated with the results of the in-depth interviews during which staff at the central, area, and district (ISO and collaborative) levels reported that administrative policies existed and provided supporting written documentation. The senior management team at the central level MSPAS clarified that quality policies could be found in the vision and mission statements, manuals, and on the MSPAS website. This contrasted with the district/health facility that had participated only in the collaborative, where none of the interviewed staff could provide written documentation of policy.

There was general agreement across all levels of the importance of team work as a core value. The central level senior management team specified that a value for quality existed and that specific core values included not just team work, but also solidarity and information-sharing.

In general, the ratings in districts with ISO certification and collaborative participation are high, between 4.3 and 4.9, with the two exceptions mentioned earlier (recognition of QI efforts and financial resources to conduct QI activities). All the elements had a lower rating in districts with only ProCONE: financial resources scored the lowest at 1.7, and the existence of a unit or group that leads QI scored 2.5. Three

elements had values of 3.1, including mechanisms to recognize or incentivize QI work, mechanisms for sharing results, and the existence of a plan to strengthen QI capacities. The remaining elements scored between 3.3 and 4.6.

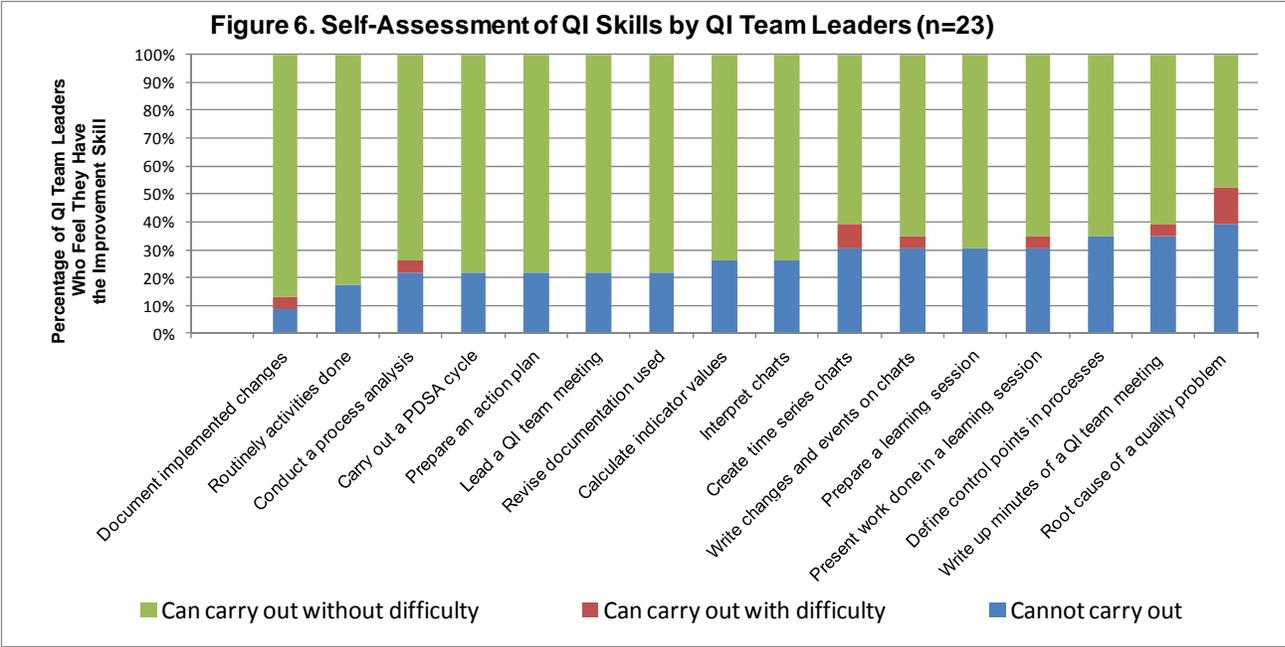
The in-depth interviews highlighted some additional insights into the institutionalization of quality, including:

- Some elements of the institutionalization model were rated low, specifically: leadership and QI structure at all levels; core values consistent with QI; mechanisms to share results; capacity-building for improvement; and recognition/incentives for QI efforts. The lack of financial resources for QI was a consistent theme from in-depth interviews and corresponds to the findings discussed under Objective I that found that there was no specific budget for improvement infrastructure or activities. None of the respondents were able to provide any specific documentation of budgeted QI activities, which further demonstrates the weakness of this element.
- Two districts that participated in both the collaborative and ISO certification were able to produce evidence demonstrating the existence of elements of the institutionalization model. Tejutla District showed evidence of existing documentation for all elements of the institutionalization model, with the exception of financial resources. Staff from Concepcion Tutuapa provided evidence of existing QI policies, leadership, a QI structure, and mechanisms for accessing and analyzing information and to share QI results. This district was not able to show documentation for explicit core values supporting quality, plans to strengthen staff capacity, mechanisms to recognize QI efforts, or specific funding for QI activities.
- Central level respondents also commented about specific elements in the institutionalization framework, reiterating that: policies for quality are embedded in the mission and vision statements, MSPAS manuals (posted on the MOH website), and standards of care; indicators are regularly tracked to measure quality; there is a strong interest in and commitment to continued quality improvement; leaders (specifically the Minister of Health and Administrative Vice Minister) are committed to quality; the core values for quality include teamwork, solidarity, and information-sharing; and last, but not least, that quality improvement is part of “everyone’s everyday activities”. Two areas in development or not existing included mechanisms to recognize and encourage improvement and a specific budget allocation for improvement activities.

## 2. Quality Improvement Skills

Some quality improvement team leaders at each level also completed a self-administered questionnaire on quality improvement skills. The skills self-assessment was completed by 21 health workers who were part of QI teams: three from the central level, four from the Health Area level, and 14 from the district level. Respondents were asked to assess themselves on a list of key quality improvement competencies as to whether or not they could carry out the task, and if so, if they could complete the task without difficulty. The findings are summarized in Figure 6 for all respondents regardless of MSPAS level (central, district and area) as there were no major differences.

Almost all respondents reported that they were able to carry out the major QI competencies and generally without difficulty. The competencies that were deemed to be the most difficult included conducting root cause analyses of problems, process analyses, time series charts, and documentation (minutes from QI team meetings, annotating charts, implemented changes). The majority of respondents (70-80%) reported an ability to perform key quality improvement skills with ease, including: running Plan-Do-Study-Act (PDSA) cycles, preparing team action plans, leading a QI team meeting, calculating indicator values, interpreting charts and graphs, and updating QI documentation. It is interesting to note that another study that reviewed the accurate completion of documentation concluded that only 52% of teams in out-patient services and 48% of teams in childbirth centers documented the changes implemented through QI methods (see Hurtado et al. 2011).



**3. Stage of Institutionalization by MSPAS Level**

Table 4 shows a summary profile of the different elements in the institutionalization model for each of the three stages of institutionalization by MSPAS level. This profile was derived from the analysis and interpretation of the data, including qualitative interviews and survey scores. Using the criteria for the three phases of institutionalization presented on p. 6 above, qualitative data were examined by two of the authors and used to assess the current phase of institutionalization of the basic elements of quality for each MSPAS level. Shaded cells in Table 4 indicate at which stage—experimental, expansion or consolidation—each QI element was estimated to be in.

As mentioned earlier, the districts with both the collaborative and ISO strategies were rated to have the highest level of institutionalization of quality and were found to be mostly in the expansion phase. This observation contrasts with the situation in the districts that participated only in the collaborative, where all elements were rated in the stage of experimentation.

The health area level is expanding policy, leadership, and core values, while still experimenting with other aspects of improvement. With the exception of policy, the central level of the MSPAS appears to be in the experimental phase. The central level MSPAS was actively involved in the ISO certification but less involved in the collaboratives. This shows the strength of deploying multiple approaches. The ISO certification process involved building will and motivating staff, developing vision and mission statements, building improvement capability, clearly defining processes and measures, and thoroughly documenting staff activities. Since the ISO certification occurred after the collaborative, the explanatory hypothesis is that these efforts built upon and strengthened the institutionalization of quality improvement that started with the collaborative.

**Table 4. Stage of Institutionalization by MSPAS Level**

Basic Elements	Central Level			Area of Health			District with Collaborative and SO			Distinct with Collaborative		
	Stage of institutionalization											
	Experimental	Expansion	Consolidation	Experimental	Expansion	Consolidation	Experimental	Expansion	Consolidation	Experimental	Expansion	Consolidation
Policy												
Leadership												
Values												
Resources												
Structure												
Institutional Strengthening												
Information and Communication												
Recognition for Quality Improvement												

**C. Barriers and Facilitating Factors to Further Institutionalize Quality within the Various Levels of MSPAS**

A summary of factors that facilitate or impede the institutionalization of quality improvement at the central, Health Area, and district levels are presented in Table 5. These factors were summarized from qualitative data extracted from in-depth interviews. The facilitating factors listed demonstrate commitment of the levels of the MSPAS and corresponding staff in improving the quality of care. Even with constraints in resources, personnel, and time, those interviewed still noted the strong will for improving care (leadership as well as teamwork and commitment). Other facilitating factors named indicate that in addition to will, skills to achieve improvement also exist (support functions, monitoring, and technical capacity for implementation); the strength of communications through the QMS website was specifically mentioned. The factors identified as limiting institutionalization (information systems, resources, designated personnel, time) show that the infrastructure necessary to sustain and continue the efforts remains somewhat unclear. As mentioned in the study findings presented above, each element of the institutionalization model is in a different stage of development. This tension between will/commitment and infrastructure would indicate a shift between the “experiential” and “expansion” phases to “consolidation” where the infrastructure is clearly defined.

The facilitating factors demonstrate will and commitment for quality even without formalized systems. Respondents replied that leadership, team work, and commitment were strong even without dedicated financial resources, time or personnel for improvement work. In addition to these factors common across the MSPAS levels, the central level respondents added a few others: strategic decision making, policies, human resources, credibility, training, and support from external cooperation. It is interesting that human resources was named at the central level as a facilitating factor, when insufficient personnel was mentioned as a common limiting factor across MSPAS levels. The MSPAS respondents also added

that the Minister of Health and the Administrative Vice Minister have been strong leaders and advocates for improving quality, which has been a strong facilitating factor.

**Table 5. Summary of Factors that Facilitate and Limit the Institutionalization of Quality**

Factors that Facilitate Institutionalization	Factors that Limit Institutionalization
Leadership (especially senior leadership) Support functions (information and communication, capacity building, rewarding quality) Team work and staff commitment Continuous measurement of key indicators Technical capacity for implementation	Financial resources (national crisis) Weak information systems Limited personnel Lack of time Training was designed vertically (not horizontally across the MSPAS) Insufficient preparation of facilitating group at central level

The lack of financial resources and weak information systems have already been noted as limiting factors throughout this report. The other limiting factors named refer to the personnel and design/preparation for the expansion of the improvement efforts: limited personnel and time, the vertical design of the training program, and the lack of preparation of the central level. The limited personnel and time speak to an inherent tension that occurs while experimenting with and expanding quality efforts without formalized roles and structures. As improvement efforts grow in depth and scope, personnel and time will need to be dedicated to the efforts. The vertical design refers to the cascade training model that went from the MSPAS central level to the Health Area level, then from the Health Area level to the districts. In the ISO experience, the central level went directly to district level (accompanied by Health Area staff). Some respondents expressed that they thought it would have been more effective to design the training horizontally (e.g., central Level would expand and train within the central level). Insufficient preparation referred to the central level facilitation group that participated, especially in the ISO implementation process. The first phase was mainly conducted by external consultants and not by MSPAS staff. Upon reflection, one problem with the ISO certification model was the extensive use of external consultants in the initial preparation and build-up of the program; more MSPAS participation early on would have helped to build ownership and skills from the beginning.

This discordance between the central level MSPAS and the district/health facility level was particularly evident in some additional questions asked in the in-depth interviews. The small sample size for these interviews limits the ability to draw any steadfast conclusions. With this in mind, it is interesting to look at some of the findings in the context of other results discussed in this study. Results from the self-administered questionnaires show that the majority of respondents across levels agreed that the MSPAS is very interested in quality (88% central level, 100% area level, 100% districts/health facilities participating in ISO and improvement collaboratives, and 66% districts/health facilities participating in collaboratives only). At the central, area, and health facility levels, personnel reported that they would recommend improvement methods to another health facility and also expressed confidence that efforts to improve quality would continue after the project ended.

Other questions asked showed more discordance between levels. While the central, area, and the three districts/health facilities participating in ISO and improvement collaboratives tended to answer the questions more positively, two of three districts/health facilities participating only in collaboratives were generally less optimistic about the level of commitment to or the longevity of quality improvement efforts in the future. In the latter, of all the questions asked, only one health district coordinator of three answered them positively (e.g., sufficient training in QI, established quality standards, sustainability of quality improvement after the project ends, etc). These results may be in part due to the small sample size; however, they may point to the possible benefit of using a variety of strategies to improve quality, particularly on the front line where clients receive care.

In these interviews, respondents from the Tejutla and Concepcion Tutuapa health districts with both ISO and collaborative approaches mentioned a high interest and commitment to QI. Respondents especially emphasized the following as critical to their improvement work: team work, a focus on systems and processes, and the view of the client as central. Respondents from these health districts also reported a high level of integration of standards in the provision of health services. Respondents from these districts described QI activities as part of daily work and reported confidence that QI activities will continue after the project support ends. Personnel from the Tejutla district also mentioned the strength of using indicators to measure the quality of health service provision.

## IV. CONCLUSION

This study illuminated key learning for each of the study objectives:

### **Study Objective 1. Describe and analyze the overall degree of institutionalization of quality improvement**

- Data from the central level MSPAS demonstrated a high level of ownership for quality, but also the least amount of certainty about the continuation of QI without URC's support.
- The Health Area level considers quality to be part of everyone's job, but expressed doubts about the central level's long-term commitment to quality.
- The districts and health facilities involved in both ISO certification and collaboratives showed the deepest commitment to quality and most advanced stages of institutionalization.
- Districts and health facilities that participated only in collaboratives did not show as much advancement in the institutionalization of quality. Despite these differences, the districts and health facilities overall demonstrated that participation in improving quality leads to respect among peers as well as opportunities for advancement; somewhat contradictory to these findings, however, was the finding that recognition for quality improvement work was weak at the district level.

### **Study Objective 2. Analyze the elements of the institutionalization model that still need further support to sustain and deepen improvements**

Districts participating in both ISO certification and collaboratives demonstrated the highest degree of institutionalization and primarily are in a phase of expansion. The central and Health Area levels and districts participating only in collaboratives are generally in the experimental phase, but expanding in certain elements.

- **Policies:** Respondents generally agreed that quality improvement and quality management policies exist at all levels. The districts only supported by the ProCONE collaborative have the lowest rating for the existence of QI policies.
- **Leadership:** In written questionnaires, leadership received a high rating by participants from the central level and districts implementing ISO and ProCONE together. Leadership for QI efforts received lower ratings from participants from the Health Area level and districts implementing only ProCONE.
- **Core values:** Qualitative data showed evidence of QI values, including teamwork, solidarity, and information sharing/exchange. At all levels, teamwork was well rated by all participants in the interviews, questionnaires, and focus groups.
- **Structure:** This element received average ratings, especially from those who completed the questionnaire in collaborative-only districts. Focus group participants and in-depth interviews scored this element with a higher rating.

- Capacity building: The study measured capacity building as the existence of plans to improve personnel QI skills, and the ratings were average. Respondents who stated they had plans to improve QI skills could not sufficiently demonstrate the existence of these plans. The self-assessment scores of respondents showed that improvement skills have been developed to date, though there is still a need to continuously strengthen QI skills.
- Information and communication: This element was measured by the existence of established mechanisms for sharing the results of QI activities. Similar to capacity building, ratings are average without sufficient documented evidence.
- Recognition of QI efforts: This variable was rated quite low. In some in-depth interviews, however, participants were able to show evidence of processes to recognize quality.
- Resources: All data across all levels show a low rating for financial resources available for QI.

### **Study Objective 3. Identify barriers to and facilitating factors for further institutionalizing quality within the MSPAS**

- Common facilitating factors mentioned at all levels of the MSPAS included: leadership (especially senior leadership), support functions (information and communication, capacity building, rewarding quality), team work and staff commitment, continuous measurement of key indicators, and technical capacity for implementation.
- Barriers reported common across MSPAS levels included: a lack of financial resources, weak information systems, and limited personnel and dedicated time. The vertical design of the training program and insufficient preparation of central level MSPAS officials were also mentioned.
- The reported commitment to growing and sustaining quality efforts, despite reported barriers, was strongest among the districts and health facilities that participated in both the improvement collaboratives and the ISO certification.

### **Study Objective 4. Provide recommendations to further institutionalize quality within the MSPAS**

The analysis of the findings from the study resulted in several areas of concrete recommendations for future work in improving and institutionalizing quality within the Guatemalan health system. These are described in more detail in the next section and include:

- Increase the dissemination and communication of quality improvement topics
- Strengthen the ability of the MSPAS levels (especially the central level) to manage and oversee QI and coordinate with each other
- Broaden the participation of personnel and strengthen QI activities
- Strengthen particular elements of the institutionalization model, especially financial resources, recognition of QI work, capacity building, and information and communication
- Where possible, explore the use of a variety of approaches to improve quality (such as improvement collaboratives and ISO certification)
- Continue to strengthen the QI skills and core values that will facilitate quality improvement
- Apply QI methods to improve the context and functioning of health facilities, such as the availability of supplies and improved infrastructure

These findings will guide future efforts to sustain and institutionalize quality improvement in Guatemala's health system—building on the momentum from the identified strengths and specifically targeting the areas that need further development.

## V. RECOMMENDATIONS

The main recommendations derived from the study follow.

### 1) Increase dissemination of quality improvement topics

The study has shown that the more contact with quality improvement topics, the more likely that activities will be institutionalized and, consequently, an enduring culture of quality improvement established. Therefore, it is important to continue the work—the dissemination of QI key concepts, methodologies, and practical tools, achieving results and outcomes, and planning future actions that can be implemented in the area of quality, with an emphasis on continuous improvement.

### 2) Strengthen various levels with an emphasis on the central level

It is clear that progress in the process of institutionalization for quality improvement is not consistent across the various levels of the MSPAS, due to the way in which the collaborative and ISO approaches were implemented. There is more progress in the districts in which both approaches were implemented than at the MSPAS central level. Therefore, it is important to empower the MSPAS central level as the leader of future QI initiatives using either the ISO or improvement collaborative approaches, although the latter is more clinical, and the central level is not a direct provider of health services to the community. It is also necessary, as suggested by Health Area and district representatives, that the central level show the other levels that it values the work in quality improvement, in order to sustain commitment to the institutionalization of quality improvement activities at those levels.

Similarly, it is recommended to strengthen the district level with the ISO approach, in addition to the collaborative, as it was shown that the joint implementation of the two approaches produces greater institutionalization than only the collaborative approach.

### 3) Strengthen coordination between the central, area, district, and health facility levels

Quantitative and qualitative data from the study showed that each of these levels of the MSPAS valued quality and improving care for the client. There was misalignment, however, between the central level MSPAS and other MSPAS levels as to whether or not the central level valued quality improvement and would continue to support it after URC's assistance ended. This demonstrates that while great strides have been made to strengthen quality at all levels, the central level still needs to set vision, policy, resources, and priorities for quality. Further research should explore how to strengthen the connection between the central level and the health area level in improving quality.

### 4) Broaden participation of personnel and strengthen QI activities

To have greater effect with QI approaches, implementation should be aimed at all personnel in all levels, not just to those directly responsible for the improvement of the quality process, as done in each of the approaches. The financial manager, for instance, participated only in the ISO approach, while health providers participated only in the collaborative approach. This may explain why the combined ISO and collaborative approaches produced a higher level of institutionalization than each approach on its own.

Another way to institutionalize the process is to expand the implementation of the approaches to other technical areas, both administrative and clinical; in this case, the emphasis in the clinical area has been on maternal and child care and in the treatment of sexually transmitted infections and HIV, while administratively, the focus has been on the budget and financial processes.

Another aspect to highlight is the importance of strengthening personnel's QI technical skills, especially in the areas where weakness were found, such as the ability to find the root cause of the problem, to define control points in the process, to write minutes from a quality improvement team meeting, to present to a quality improvement team the work developed in a learning session, and to prepare time series charts.

#### 5) Strengthen elements of the institutionalization model

It is recommended that the MSPAS establish mechanisms for the permanent allocation of resources for quality improvement; perhaps the best strategy to do so is to define a budget line item for quality improvement at all levels. The second area for development is a formal mechanism for the recognition of quality improvement efforts; so far, the MSPAS has done something in an unstructured way, such as the celebration of a quality improvement day, where diplomas were signed and presented by the Minister of Health to workers involved in quality improvement activities at the central level. The third area would be the continued capacity building of MSPAS personnel, defined as a permanent system of technical and operational development in quality improvement for staff at all levels, including concepts, methodologies, techniques, and tools. The last but not least element to strengthen is information and communication, which plays a key role in establishing an institutional culture of quality.

Greater institutionalization can be achieved by giving more importance to those elements of the model that are presently more developed, such as written policies spread to all levels, the establishment of clear QI structures with trained staff to lead quality improvement activities, and the definition of core values, among which are trust and respect, organizational and personal learning, management for innovation, public responsibility, and focus on results.

#### 6) Strengthen key skills and values for improving quality

It is recommended that the MSPAS continue to build key QI skills, including teamwork, focus on systems and processes, and considering customers as a central element of the work. These elements can be considered core values of quality and have been promoted by URC as key principles in QI. The same applies to the establishment of standards for the provision of health services, inclusion of QI activities as part of the daily routine for staff, and including QI functions for all health workers as part of their job descriptions. Most of these elements are considered in the ISO approach.

#### 7) Jointly implement the collaborative and QMS approaches

A recommendation clearly derived from the study is that the best strategy for the institutionalization of quality improvement is through the joint implementation of both the ISO and collaborative approaches. At this point it is worth clarifying that the approach based on ISO standards was defined in the MSPAS as a Quality Management System. The recommendation is to maintain and extend the QMS, although perhaps not exactly the ISO approach. The USAID Health Care Improvement Project has supported the MSPAS in analyzing alternatives to the ISO approach, including a system outlined by the Secretary of Health of Mexico, with over 11 years of experience, direct support from the President of the country, and a law to assign significant financial resources to quality improvement. The Mexican Government has implemented a financial incentive scheme for accreditation of services and has strengthened the quality improvement capacity of human resources, not only in the health sector, but also in educational institutions, for the development of standards and procedures to assure quality.

#### 8) Other elements of importance in the institutionalization process

As has been demonstrated in other studies conducted in Guatemala, to achieve greater institutionalization of QI activities, it is necessary to improve the availability of supplies required by communities as well as improve local infrastructure.

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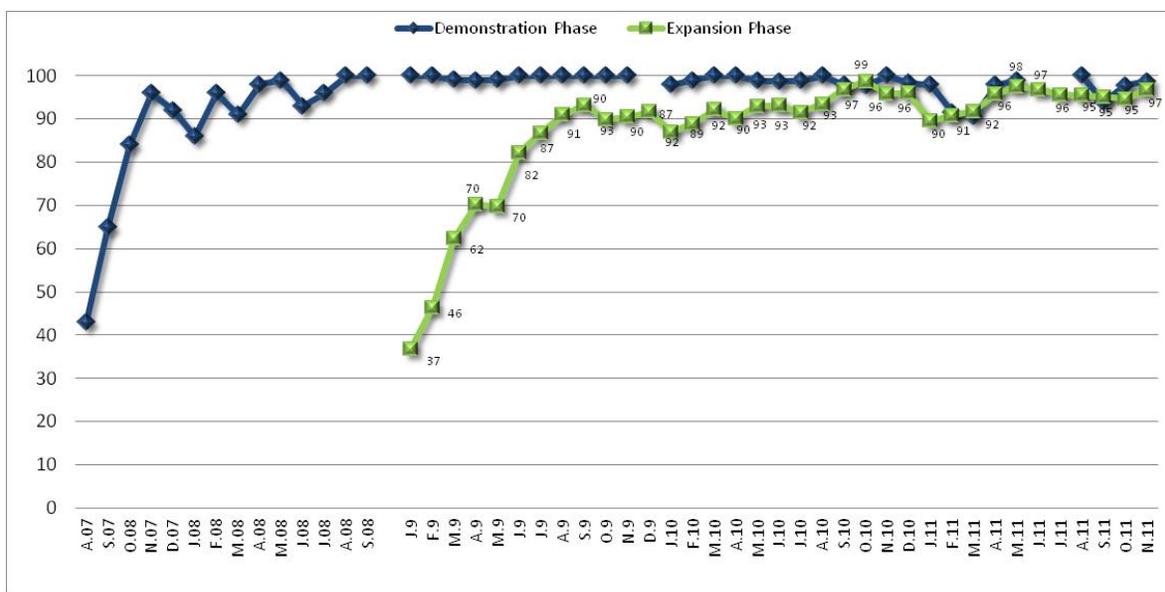
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# ANNEXES

## Annex 1. Examples of Results Achieved by the MSPAS of Guatemala in Maternal and Neonatal Care

The San Marcos Health Area, which started the demonstration phase of maternal and neonatal health services improvement in 2007, and seven additional health areas participating in the expansion phase since 2009 have continued to improve their level of quality of maternal and neonatal health services and maintained levels above 85% of compliance with criteria requirements in the management of the third stage of labor, as can be seen in Figure A-1. To achieve this, local staff implemented several interventions, including training in national norms, proper use and completion of clinical file records, and ensuring the availability of oxytocin.

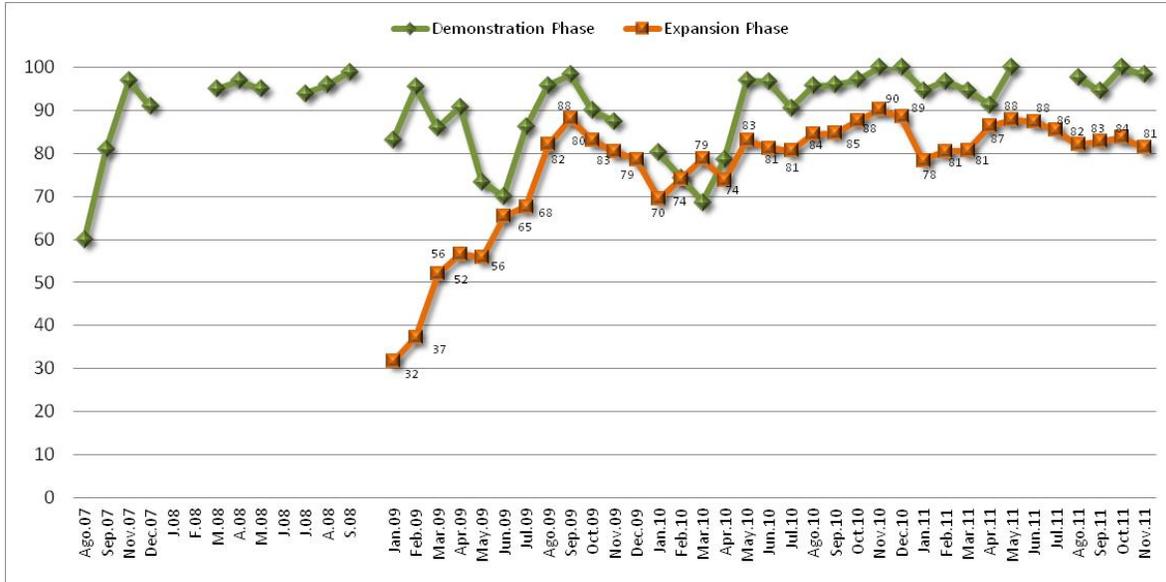
**Figure A-1. Compliance with All Three Elements of Active Management of the Third Stage of Labor from San Marcos Health Area and Seven Additional Health Areas during the Expansion Phase (67 facilities reported on delivery care in 2009; 75 facilities reported in 2010)**



	J.9	F.9	M.9	A.9	M.9	J.9	J.9	A.9	S.9	O.9	N.9	D.9	J.10	F.10	M.10	A.10	M.10	J.10	J.10	A.10	S.10	O.10	N.10	D.10	J.11	F.11	M.11	A.11	M.11	J.11	J.11	A.11	S.11	O.11	N.11		
Num	21	26	42	54	81	32	78	134	342	852	802	522	271	995	500	489	544	502	596	518	508	332	340	333	142	262	603	601	668	732	649	617	473	303	286	232	227
Den	66	74	40	88	55	49	74	86	413	347	318	303	282	253	719	660	691	679	717	637	630	393	401	380	348	296	769	746	828	846	739	705	553	369	345	277	279

A similar trend can be observed in Figure A-2 for routine neonatal care, where training in national norms with emphasis on breast feeding has been the main intervention.

**Figure A-2. Compliance with All Criteria in Routine Neonatal Care at Five Birthing Centers from San Marcos Health Area and 67 Birthing Centers from Seven Additional Health Areas during the Expansion Phase**



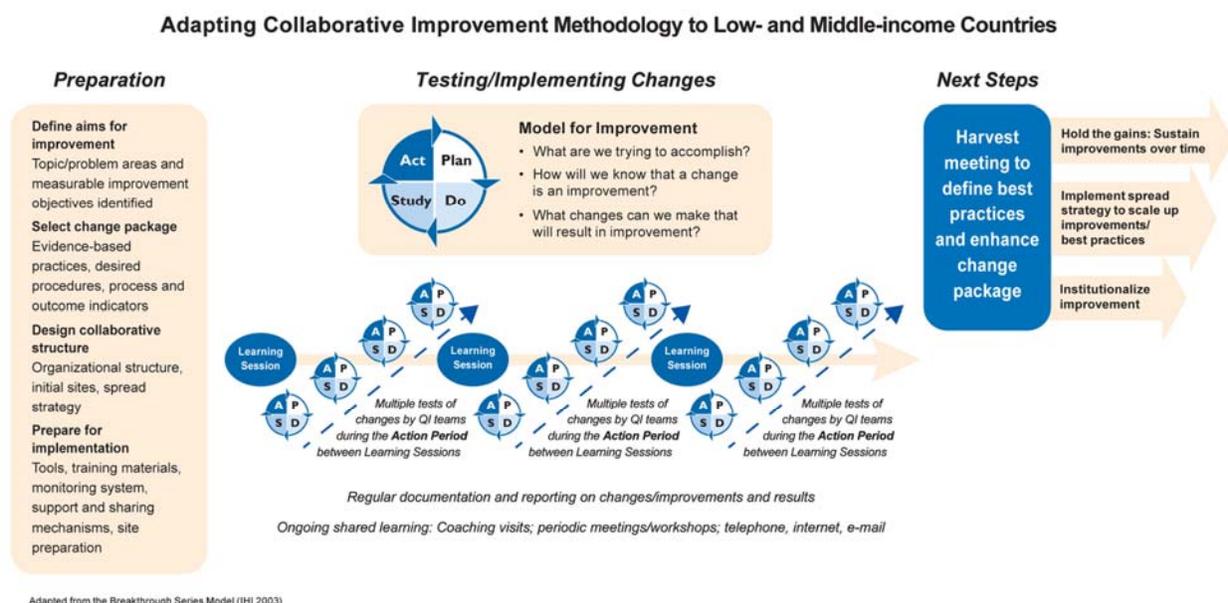
	J.9	F.9	M.9	A.9	M.9	J.9	J.9	A.9	S.9	O.9	N.9	D.9	J.10	F.10	M.10	A.10	M.10	J.10	J.10	A.10	S.10	O.10	N.10	D.10	J.11	F.11	M.11	A.11	M.11	J.11	J.11	A.11	S.11	O.11	N.11
Num	212	164	254	313	278	313	434	285	280	252	227	199	500	489	544	502	596	518	508	332	340	333	314	262	603	601	668	732	649	617	473	303	286	232	227
Den	667	440	488	554	497	478	641	347	318	303	282	253	719	660	691	679	717	637	630	393	401	380	348	296	769	746	828	846	739	705	553	369	345	277	279

## Annex 2. Improvement Collaboratives

An **improvement collaborative** is an organized network of a large number of sites (e.g., districts, facilities, or communities) that work together for a limited period of time, usually 9 to 24 months, to rapidly achieve significant (often dramatic) improvements in a focused topic area through shared learning and intentional spread methods. A collaborative is designed to improve the system, processes, quality, and efficiency of a particular area of health care delivery.

Improvement collaboratives involve several distinct phases which are illustrated in Figure A-3. First, improvement collaboratives begin with a preparation phase in which experts meet to determine the collaborative’s focus and aims and how progress will be measured. The collaborative’s technical interventions are refined, including ideas for changes that teams can test, and a structure developed to support the collaborative’s implementation. Sites are identified, and quality improvement teams recruited to participate in the collaborative. The “implementation period”—when site teams develop and test changes to put in practice the change package promoted by the collaborative, is generally divided by three to five learning sessions that are separated by periods of one to four months when teams test changes. These intervening periods are known as “action periods”, because they are the key actions during the life of the collaborative. Once teams know how to operationalize the interventions and have achieved the collaborative’s objectives, a workshop or conference may be held to review the teams’ collective experience to decide which changes were the most effective and to share results with stakeholders outside the collaborative.

**Figure A-3. Improvement Collaborative Model as Adapted by URC from the IHI Breakthrough Series Collaborative**



Once a collaborative has been completed and an enhanced implementation package developed, several different strategies may be used to spread that operational knowledge to new sites. The initial collaborative—sometimes called a “demonstration” collaborative—may then be followed by a second, or “spread” collaborative whose purpose is to spread the enhanced implementation package from the demonstration sites to the rest of the parent health system. Members of the original collaborative often serve as change agents and advisors during a spread phase. Other strategies for the spread of improvements (such as campaigns, change agents, and natural diffusion over time) may also be leveraged, depending on the scope of spread objectives and the resources available.

### Annex 3. Overview of the Institutionalization Model

The Institutionalization model provides a useful construct by illustrating the necessary pieces or “essential elements” necessary for institutionalizing quality. While many factors affect a health system or organizations’ ability to institutionalize QI and a culture of quality, eight elements were consistently identified in literature and QAP experience. The first four elements constitute the internal environment of an organization or health system, including:

- Policies that support, guide, and reinforce QI;
- Leadership that sets priorities, promotes learning, and models quality;
- Core organizational values that emphasize respect, quality, and continued improvement; and
- Adequate resources allocated for the implementation of QI activities.

Three critical support functions sustain implementation of QI and improved quality of care:

- Capacity building in QI, such as training, supervision, and coaching for healthcare providers and managers;
- Information and communication for the purposes of sharing, learning, and advocating for quality; and
- Rewarding and recognizing individual and team efforts to improve quality.

At the core “quality care” triangle are:

- Quality design (QD),
- Quality improvement (QI) and
- Quality control (QC).

Although the distinction between QD, QI, and QC is not always clear, these were discussed in the original monograph to emphasize the point that organizations should strive for a balance in the variety of approaches. While quality improvement works well with existing and well-functioning systems, at times organizations will need to design or re-design services entirely in order to make breakthrough advances. While the term “quality control” has grown to have a negative connotation, at the point that this monograph was written, it described the importance of using measurement systems to identify and track improvement endeavors.

The final element of the institutionalization model is a structure for quality; while there are many different models for structuring quality in a health system, one of the most important features is determining clear responsibility and accountability for quality in the organization, including oversight, coordination, and implementation of quality activities.

#### Annex 4. Summary of Previous Studies on the Institutionalization of Quality

Relevant Studies	Objectives Directly Relating to Institutionalization of Quality	Study Methods	Key Learning to Consider for Guatemala Study
Niger	<p>The evaluation focuses on institutionalization of quality after the end of technical assistance in the context of Essential Obstetric and Newborn Care (EONC) Improvement Collaborative by:</p> <ul style="list-style-type: none"> <li>• Determining the extent of institutionalization of quality care and of QI implementation, at site, district, regional and central levels and its evolution over time.</li> <li>• Identifying factors that facilitated or hindered institutionalization of quality care in QI at all levels of the system, over time.</li> <li>• Describing the extent of implementation of the Ministry of Health (MoH) institutionalization change package including its integration into annual action plans and requisite resource mobilization at the different levels of the system.</li> </ul>	<p><u>Description:</u> Longitudinal study with a modified pre/post design to measure sustained gains and continued implementation of QI activities through collaboratives. The findings from this assessment were used to develop 'institutionalization change package' which was introduced to sites in October 2009. Second assessment (August 2010) done to assess the impact of the institutionalization change package.</p> <p><u>Sample:</u> 20 out of 52 sites participating in EONC collaborative.</p> <p><u>Tools used:</u> site level interviews with key informants and QI team members, observations of care, simulations and clinical chart reviews. Interviews and discussions with officials at district, regional and central levels in the MOH.</p>	<p>Factors that facilitate the institutionalization process:</p> <ul style="list-style-type: none"> <li>- Quality of care and QI tasks: continued orientation of new staff; continued implementation of organizational changes that focused on availability of key inputs; -staff capacity building and calculation of indicators</li> <li>- Staff mobility and competency: despite high turnover, competency remained high</li> <li>- Institutionalization activities: critical for institutionalization activities to be included in action plans and to obtain organized financing</li> </ul> <p>Recommendations to improve the institutionalization process and address barriers:</p> <ul style="list-style-type: none"> <li>- Quality of care and QI tasks: meetings and discussing results, graphing data, annotating time series charts</li> <li>- Staff mobility and competency: address/ reduce high turnover</li> <li>- Institutionalization activities: dissemination of change package did not reach district and facility level; no accountability to implementation of change package</li> </ul>
Honduras	<p>Show the institutionalization level achieved by Continuous Quality Improvement (CQI) teams working with the collaborative approach, as well as know the contributing and impeding factors to the institutionalization process</p>	<p><u>Description:</u> Cross-sectional study</p> <p><u>Sample:</u> 17 units from demonstration phase and 14 from replication phase Include hospitals, maternal and child clinics and health centers with a physician.</p> <p><u>Tools Used:</u> A questionnaire was administered to members of the local teams, as well as regional and national levels personnel.</p> <p>Work meetings were carried out with quality teams network facilitators</p>	<p>Factors that facilitate the institutionalization process:</p> <ul style="list-style-type: none"> <li>- existence of teams that can develop activities without direct supervision, that have extended training to new personnel and that continue doing measurements, carrying out quick improvement cycles and documenting implemented changes</li> <li>- establishment and functioning of Quality Committees</li> </ul> <p>Recommendations to improve the institutionalization process:</p> <ul style="list-style-type: none"> <li>- Improve team capacity</li> <li>- Incentive plan for CQI teams</li> <li>- budget assignment</li> </ul>

			<ul style="list-style-type: none"> <li>- availability of job aids</li> <li>- new and innovative training methodologies</li> <li>- supervision plan</li> </ul>
Ecuador	Explore associations between the degree of institutionalization achieved and the presence of reforms introduced by the Law for the Provision of Free Maternity and Child Care	<ul style="list-style-type: none"> <li>• <u>Description:</u> The Institutionalization Model was used as the conceptual framework for the study</li> <li>• Tools used: <ul style="list-style-type: none"> <li>- Document review</li> <li>- Regular and electronic surveys to provincial and local facilitators, as well as improvement teams</li> </ul> </li> </ul>	<p>Factors that facilitate the institutionalization process:</p> <ul style="list-style-type: none"> <li>- establish strategic alliances with other social actors to implement quality policies</li> <li>- a well-structured training program on CQI as well as a training manual</li> </ul> <p>Challenges to the process implementation:</p> <ul style="list-style-type: none"> <li>- high turnover of officers at all levels</li> <li>- political instability due to government change</li> </ul>
Nicaragua	Identify how QI has been incorporated into routine work in health care processes implemented. Confirm the institutional support to maintain improvements in the functioning and organization of involved units.	<p>The Institutionalization Model was used and adapted for Nicaragua</p> <p>Tools used:</p> <ul style="list-style-type: none"> <li>- Document review</li> <li>- In-depth interviews to key informants</li> <li>- Self-administered surveys to clinical and administrative personnel</li> <li>- Focus groups</li> <li>- Special tool called DASI (documentation, analysis, share of learning and institutionalization)</li> </ul>	<p>Factors that facilitate the institutionalization process:</p> <ul style="list-style-type: none"> <li>- existence of a legal and normative framework at national and institutional level</li> <li>- measurement of health care processes</li> <li>- implementation of improvements to health care processes</li> <li>- direct connection between personnel training and QI</li> <li>- experienced QI leaders and other potential leaders in the health unit</li> <li>- Leaders authorize or allow improvement activities and get involved in QI</li> <li>- Technical teams are able to promote QI</li> </ul> <p>Strategies to reduce challenges to QI:</p> <ul style="list-style-type: none"> <li>- improve knowledge/ skill in improvement methodology</li> <li>- Strengthen leadership involvement in QI</li> <li>- Design and implement a quality certification system</li> <li>- Design an action plan at central level to strengthen sustainability of improvements</li> </ul>
Tanzania	Assess the effectiveness of the Partnership for Quality Improvement (PQI), specifically by exploring: a) Results achieved (health facilities) in terms of improving the quality of care and patient outcomes.	<u>Description:</u> Analysis of levels of institutionalization studied at Central MoH, Regional and District Health Management Teams, and Health Facilities. Implementing Partners were also studied.	<p>The study found early markers of institutionalization in health facilities and ownership of quality at the central level MoH. Institutionalization at the regional and district level, however, was not as clear.</p> <p>The study instruments and design could be useful to the study in Guatemala which also aims to learn about the</p>

	<p>b) Implementing partner (NGO and Regional/ District Health Management Teams) capacity and intent to organize, implement, and support QI</p> <p>c) <u>Early markers of institutionalization</u> of QI among demonstration regions and the capacity of the MoH to sustain QI activities.</p>	<p>Sampling: All key informants interviewed at central, regional, and district levels. Sampling of QI team members in health facilities,</p> <p><u>Tools Used:</u> Methods included quantitative questionnaires, individual in depth interviews, and focus groups.</p>	<p>depth of institutionalization at various levels of the health system.</p>
<p>The Institute for Healthcare Improvement (IHI)</p>	<p>Monograph “Health Care Transformation” published by The Institute for Healthcare Improvement</p>	<p><u>Description:</u> A qualitative study to develop a framework for and common definition of organizational transformation</p> <p><u>Sample:</u> Leaders in improvement in health systems.</p>	<p>The following aspects were cited as important to organizational transformation. Although they are implied in the Institutionalization Model, they are not as explicitly stated. These will be incorporated into the operational definitions of the elements for the study.</p> <ul style="list-style-type: none"> <li>- explicit core values of transparency, multi-disciplinary team work, and patient centeredness</li> <li>- focus on measurement and improvement of patient outcomes</li> <li>- optimization of patient experience in the health system</li> <li>- alignment of leadership at all levels of the health system for the priority of quality initiatives</li> </ul>

## Annex 5. Example of Achievements of the Ministry of Health of Guatemala as a Result of Using Improvement Methods

### Key Results: Certification of **San Pedro Health Center** in ISO 9001:2008 clinical care standards, August 2010



Dr. Guillermo Echeverria, Administrative Vice Minister presenting the accreditation certificate to Dr. Anibal Orozco, San Pedro Sacatepequez Health Center Director



The Quality Management System component of the USAID Health Care Improvement Project supported the MSPAS and the San Pedro Health Center beginning in 2009 to obtain high levels of quality services in areas such as financial, administrative, and maternal and neonatal health processes. After internal and external audits were conducted, in August 2010 the San Pedro Health Center was awarded ISO 9001:2008 certification of quality, an event that was hosted by the MSPAS with the participation of USAID.