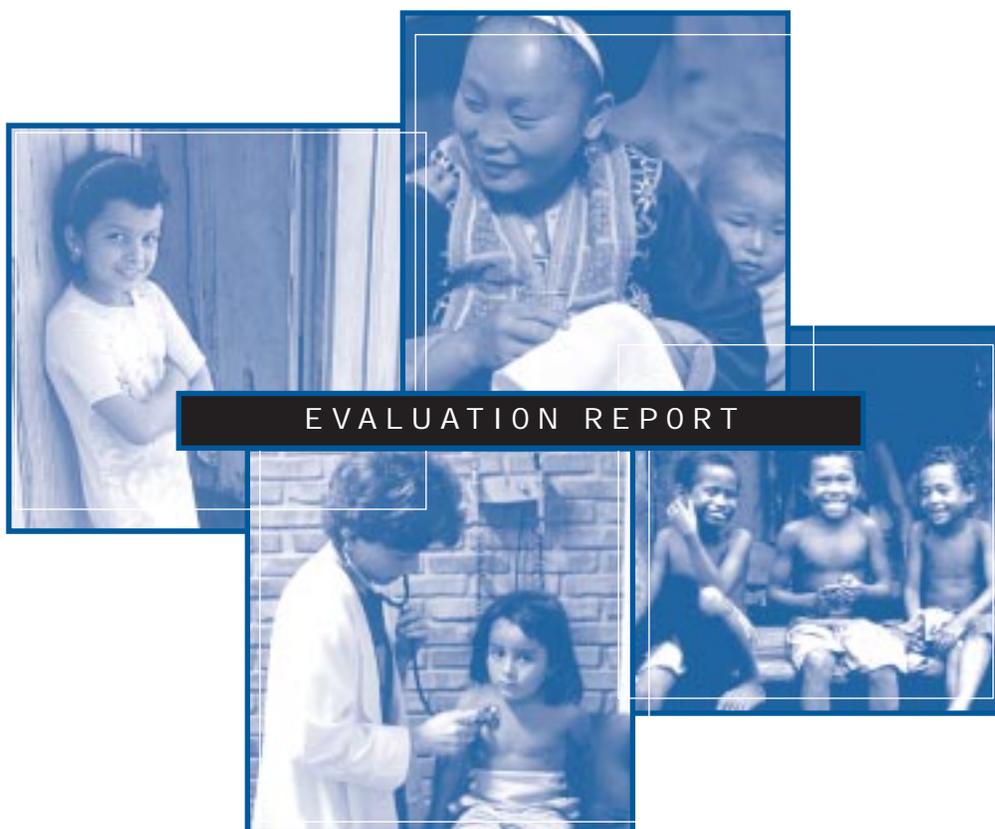


QUALITY

ASSURANCE

PROJECT



EVALUATION REPORT

The Zambia Quality Assurance Program Final Evaluation



The Zambia Quality Assurance Program Final Evaluation

Bruno Bouchet, MD, MPH

Chimshimba Lumbwe, MD

John Øvretveit, PhD

Eleanor Msidi

Maria Francisco

Maryann Lyby

Elizabeth Goodrich

Quality Assurance Project
7200 Wisconsin Avenue, Suite 600
Bethesda, MD 20814-4811
301-654-8338, FAX 301-941-8427
www.qaproject.org

Acknowledgments

The authors are indebted to the Central Board of Health (CBoH) staff for their assistance throughout the mission, both at a technical level and for secretarial assistance, physical facilities, transportation, and equipment made available throughout the mission. Without the efforts of the CBoH, the logistics would have undoubtedly been more challenging, and the output less likely in the time available. Senior officials' willingness to make themselves available at all times is recognized with considerable gratitude. The atmosphere of collaboration that prevailed throughout the mission illustrates well the partnership spirit in which it was designed.

The evaluation team acknowledges the support provided by the USAID mission in Lusaka in funding this evaluation and thanks the Agency for providing the Quality Assurance Project with the opportunity to contribute to the success of the Health Sector Reform in Zambia. The evaluation team's work was supported by USAID under Contract No. HRN-C-00-96-90013 to the Center for Human Services.

The team felt privileged to be associated with such an important undertaking and would like to give its special thanks to Dr. Eddie Limbambala, Dr. Mwendaweli Maboshe, Ms. Joyce Tembo, and Mr. Albert Mulungu for facilitating the mission. We are also grateful for Mr. Augrey Mwenda, CBoH, and Ms. Pay Sayer, URC-CHS, for their essential contributions.

Foreword

An evaluation of this nature could be threatening to all stakeholders of the Quality Assurance Program in Zambia, although the findings should relieve part of the stress. The intentions of the evaluation team were to draw lessons that could benefit both Zambia and other countries, as objectively as possible. In doing so, achievements are recognized, and remaining challenges are identified. Successes are praised, whereas failures and shortcomings are addressed through constructive recommendations. This evaluation report is intended to motivate all those who continue to work for a higher level of quality of care and health services in Zambia.

Despite its efforts to validate findings and their interpretation, the evaluation team is aware of the risk of reporting inaccurate data and missing other parts of relevant information. The evaluation team takes full responsibility for such omissions and inaccuracies; the views expressed in this report reflect the opinion of the evaluation team only and no other institution.

Recommended citation

Bouchet, B., C. Lumbwe, J. Øvretveit, E. Msidi, M. Francisco, M. Lyby, and E. Goodrich. 2000. The Zambia Quality Assurance Project: Final evaluation. *Evaluation Report 1(2)*. Published for the United States Agency for International Development (USAID) by the Quality Assurance Project (QAP): Bethesda, Maryland.

About this series

The *Evaluation Report* series presents the findings, recommendations, and lessons learned of completed quality assurance (QA) evaluations in countries with long-term QA programs. An electronic copy of this publication may be found at qapdissem@urc-chs.com.

Table of Contents

List of Tables and Figures	iv
List of Appendices	v
Abbreviations and Acronyms	vi
Abstract	vii
Executive Summary	ix
A. Introduction	ix
B. Findings and Recommendations: General	ix
C. Findings and Recommendations: Development of Standards	ix
D. Findings and Recommendations: Communication of Standards	x
E. Findings and Recommendations: Assessment of Quality Performance	x
F. Findings and Recommendations: Problem-Solving Teams	xi
G. Findings and Recommendations: QAP Support Systems	xii
I. Introduction	1
A. Purpose of the Evaluation	1
B. Methodology	1
C. Structure of the Report	2
II. Background: Quality Assurance in Zambia	2
A. The Relevance of QA for Zambia	2
B. Zambia's QA Activities	3
III. Achievements and Challenges	4
A. Standards of Quality for Zambia's Healthcare System	4
B. Evaluation of Problem-Solving Teams	17
C. Evaluation of the QA Support Systems	25
D. The Role of Other Structures and Sectors in QA Activities	32
IV. Detailed Recommendations for Strengthening QAP	34
A. General Recommendations	34
B. Recommendations on Standards of Care	35
C. Recommendations on Performance Monitoring	36
D. Recommendations on QA Activities	36
E. Recommendations Regarding the QA Support Systems	37
F. Prioritizing the Recommendations	38
V. Conclusion	39
Work Cited	40

List of Tables and Figures

Table 1–1: Summary of the Main Recommendations of the Evaluation Team xv

Figure 1–1: CBoH Organization Chart 3

Table 4–1: Changes in Provider Performance with Training and with Time 10

Table 4–2: Changes in Provider Performance with Clinical Supervision 10

Table 4–3: Features of Supervision Checklists 12

Table 4–4: Types of Data Collected on Health Center Performance 13

Table 4–5: Changes in Health Services Performance (Percentage) 15

Table 4–6: Costs of Performance Monitoring for Regions and Districts 16

Table 4–7: Number of Teams Formed in Districts Visited and Number of Problem-Solving Cycles Completed 17

Table 4–8: Examples of DHMT Training in Quality Assurance 26

Table 4–9: Sample Link Facilitator Results 27

Table 4–10: Types and Frequency of Technical Supervisory Visits 31

List of Appendices

Appendix A: Selected Sections of the Scope of Work and Terms of Reference	A-1
Appendix B: Protocols Developed by the Kabwe District Health Office	A-4
Appendix C: Examples of Supervision Checklists Used by Districts	A-5
Appendix D: Guides for Interviews Conducted by the Evaluation Team	A-9
Appendix E: Achievements of the Problem-Solving Teams	A-35
Appendix F: People Met during the Mission	A-47
Appendix G: Systems View of a Quality Assurance Program	A-53

Abbreviations and Acronyms

Acronym	Abbreviation
BASICS	Basic Support for Institutionalizing Child Survival
CBoH	Central Board of Health
CHESSORE	Centre for Health, Science & Social Research
CHS	Center for Human Services
CMAZ	Churches Medical Association of Zambia
DHB	District Health Board
DHMT	District Health Management Team
DHO	District Health Office
DySSSy	Dynamic Standards Setting System
EPI	Extended Program on Immunization
FAMS	Financial Accountability Management System
FPP	Faculty of Private Practitioners
GNC	General Nursing Council
HC	Health Center
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
HRIT	Health Reform Implementation Team
IMCI	Integrated Management of Childhood Illnesses
ITG	Integrated Technical Guidelines for Frontline Health Workers
MCH	Maternal and Child Health
MOH	Ministry of Health

Acronym	Abbreviation
NGO	Nongovernmental Organization
NHC	Neighborhood Health Committee
OPD	Out-Patient Department
PDCA	Plan, Do, Check, Act
PHN	Population Health and Nutrition
PHP	Public Health Practitioners
QA	Quality Assurance
QAP	Quality Assurance Program
QI	Quality Improvement
RHC	Rural Health Center
RN	Registered Nurse
RO	Regional Office
STD	Sexually Transmitted Disease
TBA	Traditional Birth Attendant
TDRC	Tropical Diseases Research Centre
URC	University Research Co., LLC
USAID	United States Agency for International Development
UTH	University Teaching Hospital
WHO	World Health Organization
ZHAC	Zambia Health Accreditation Council
ZMA	Zambia Medical Association

Abstract

This document reports on an evaluation of the Quality Assurance Program (QAP) in Zambia. The evaluation took place in the fall of 1998, during the QAP's fifth year.

The QAP's strategy was to build quality assurance (QA) capacity at the district and health center levels by training health providers and their managers in setting standards for health services, monitoring indicators of achievement, and team-based problem solving. Problem-solving teams are expected to identify quality of care problems from both users' and providers' perspectives, document the root causes, design and implement solutions, and use indicators to monitor progress in solving problems. In addition, a network of coaches and link facilitators was created to support and guide the teamwork and monitor performance and achievements.

This report presents the findings, lessons learned, and recommendations developed by the evaluation team. Key recommendations relate to the importance of communicating standards in a way that will be accepted by users, ensuring that standards are consistent in all communications (training, job aids, etc.), improving performance by having supervisors observe staff while they are providing healthcare, and addressing the failure

of teams to form or remain active in small health centers. Important successes detailed in the report relate to significant improvements to healthcare quality where teams formed successfully and the development of teamwork. Several recommendations are made for further research that would help improve the quality of healthcare in Zambia and beyond.

Among the evaluation team's most important findings are:

- Support systems, such as coaching and QA training capacity, must be well established at the district level to ensure the continuity of the teams
- In a decentralized system, the QA program should first target the districts so that team ownership for QA activities will develop
- Numerous factors influence the productivity of the problem-solving teams. The tools developed for this evaluation (difficulty index and team failure index) proved useful and could be used by coaches to assist teams
- A detailed documentation system of the QA program would help in monitoring the QAP's impact and making adaptations

Executive Summary

A. Introduction

Zambia began an important reform of its healthcare sector in 1993, including a Quality Assurance Program (QAP) to improve the quality of healthcare. The QAP strategy was to build quality assurance (QA) capacity at the district and health center levels by training staff in: (a) setting standards for health services, (b) monitoring indicators of achievement, and (c) team-based problem solving. A network of coaches (to assist QA teams at health centers) and link facilitators (QA trainers who provide support to coaches and are in charge of several districts) now covers almost the entire country. QA teams are expected to identify quality of care problems from both users' and providers' perspectives, document the root causes, design and implement solutions, and use indicators to monitor progress in solving problems.

Prior to 1996, the Zambian QAP was the responsibility of the QA Unit of the Health Reform Implementation Team (HRIT) of the Ministry of Health (MOH). Since the creation of the Central Board of Health (CBoH) in late 1996, QA activities are coordinated by the Directorate of Monitoring and Evaluation, through the Service Quality and Performance Audit unit, and this constitutes the QAP.

Zambia's QAP was evaluated to identify lessons and challenges and to make recommendations that would shape the vision and strategy of its next phase. A team of three international and three local experts was assembled and worked in three subteams of two to evaluate the QAP in the following areas: (a) development and communication of standards, and quality performance monitoring, (b) the work of the QA teams, and (c) QAP support systems.

This chapter summarizes the main findings and related recommendations.

B. Findings and Recommendations: General

1. General Findings

The amount and quality of the work of the QAP is impressive. In only five years, a small team of senior staff built a QA structure and capacity throughout the country, generated enthusiasm for QA, and initiated teamwork on quality of care issues by healthcare providers.

The evaluation team found no official document describing the vision, strategy, and objectives of Zambia's QAP, so it was unable to evaluate the QAP against government policy and objectives.

Although some attempts have been made to link with other health institutions, units, and stakeholders, the QAP remains isolated in its efforts to improve quality of care through a QA methodology.

2. General Recommendations

Regarding policy issues, a national QA policy that includes the private sector should be developed, providing the vision, strategy, and objectives of the QAP.

Regarding strategic issues, the evaluation team believes: (a) The vertical integration of QA into all levels of the health system must be strengthened by creating or reinforcing the links between the QAP and the regions, districts, and healthcare facilities, (b) The horizontal integration of QA at the CBoH level must be strengthened by creating or reinforcing the links between the QAP and the various directorates and units of the CBoH, and (c) The integration of QA within the private sector and parastatal institutions must be strengthened by creating or reinforcing the links between the QAP and the regulatory bodies, the training institutions, and the private associations.

C. Findings and Recommendations: Development of Standards

1. Findings on the Development of Standards

Developing the "Integrated Technical Guidelines for Frontline Health Workers" (ITG) was an excellent initiative but did not result in anticipated gains. Neither the QAP nor healthcare providers were formally involved in its development, which partly explains why providers who had a copy said it had a limited impact on their practice.

The QAP approach to setting standards consisted of training about 300 staff to use the Dynamic Standard Setting System (DySSSy), a step-by-step method to develop standards that are situation based, realistic, and owned by the users themselves. Those trained indicated that it helped them in developing their district or health center (HC) action plans, but the impact of this training on quality remains undocumented.

2. Recommendations for the Development of Standards

The development, adaptation, and revision of clinical care standards should be defined in an official policy. Health providers' involvement at all levels of the health system would ensure that standards are realistic and accepted by those who should use them, while experts' involvement would guarantee their scientific validity.

The development/adaptation of standards should be consistent with the development of other materials, such as pre- and in-service training curriculum material, job aids, and any instrument used to measure compliance.

The development of job aids should be based on an assessment of the needs of health providers. More research is needed into the kind of job aids that providers would use and how the aids should be developed and communicated.

D. Findings and Recommendations: Communication of Standards

1. Findings on the Communication of Standards

The communication strategy of the ITG suffered major delays, and very few health workers know of its existence. The district staff usually consider its format to be non-user-friendly and its content too complicated for some health workers who need a more practical instrument to guide them in delivering care.

In general, health workers are unlikely to use existing guidelines during a consultation. The extent to which they would use any kind of job aids remains unclear.

2. Recommendations for the Communication of Standards

A national strategy for communicating standards that would not rely on only classroom training should be developed. Its development should draw on principles for behavior change that would improve clinical practice.

Regulatory bodies and stakeholders should include the new standards in the curriculums of Zambian nursing and medical training institutions. This would reduce the need for in-service training and might save some costs.

The continuous reinforcement of standards is key to an effective communication strategy. Mechanisms should be developed to help districts and officers in charge to use all opportunities to do so (e.g., supervisory visits and technical meetings).

E. Findings and Recommendations: Assessment of Quality Performance

1. Findings on the Assessment of Quality Performance

The focus of the many mechanisms to monitor performance is on inputs and outcome data and neglects the process of care. No formal instrument is used to directly observe healthcare worker performance.

There is no formal strategy to differentiate causes of poor performance, so supervisors cannot distinguish whether problems are caused by competency or something else. In-service training may be seen as a solution when a lack of knowledge and skills is not the actual cause of poor performance.

Good quality is not formally recognized and rewarded, but healthcare staff would be receptive to a formal system for doing so.

2. Recommendations for Assessing Quality Performance

The assessment of quality performance should include the measurement of health workers' compliance with process standards through direct observation of the delivery of care, and not be focused only on inputs and outcome standards.

A specific strategy should be defined to explore the causes of poor performance in order to distinguish a competency problem from other causes. Clinical competency should be tested regularly to identify training needs.

A formal quality performance-based recognition and reward system should be established to create incentives to improve quality. Those planning and implementing this system should identify the kinds of rewards that would be both effective and acceptable to district health boards.

F. Findings and Recommendations: Problem-Solving Teams

1. Findings on the Number and Success of Teams

The evaluation confirmed that 26 out of 127 health centers (20 percent) had active QA (or “problem-solving”) teams.

The main reasons why teams do not form seem to be the small number of staff at a health center, the lack of regular visits by the coach, and the absence of a QA-trained officer in charge. If this is true throughout Zambia and while resources are scarce, then it is questionable whether teams should be formed absent these conditions. The risk of failure appears high.

The evaluation team identified reasons why some teams do not successfully complete a first problem-solving cycle. The main ones are the complexity of the problem and not following the steps of the cycle.

2. Recommendations for Quality Improvement and the Problem-Solving Teams

Investigate methods for improving quality in HCs with five or fewer staff. The findings suggest that the smaller the staff in a center, the more difficult it is to form and sustain a team that uses the methods effectively, possibly because the staff time and skills are not available at such centers. If the CBoH wants teams to form in small HCs, further investigation should be done of the conditions required for team success and the feasibility of these conditions. Absent these conditions, the CBoH should assess whether the teams can receive adequate additional support from the district, and if not, which quality assurance and improvement methods would work at these centers.

Zambia should continue using the problem-solving model, but with simplifications and modifications to training. The problem-solving method can be effective in HCs with over 10 staff under certain conditions. It should continue at these HCs but be simplified for people with minimal training.

3. Findings on the Problems Chosen, Methods Used, and Difficulties Experienced

The relevance and importance of the chosen problems for patients, community, and staff at the centers varied. Waiting times was often chosen (n=7), in part because it

was an example in training. About half the teams chose physical and facilities problems, and about 40 percent chose clinical problems. The clinical problems were relevant and important for the health of patients or community (e.g., malaria, late antenatal booking). About 5 percent of problems were identified by soliciting user views or by neighborhood health committee (NHC) input.

In general, specific features of the problem-solving process, such as problem prioritizing and cause-and-effect diagrams, were used correctly. The use of methods for listing data sources (data matrix) and for gathering and interpreting data could have been better, and about 70 percent of teams could not show or describe any data collected.

Teams experienced various difficulties, many relating to deciding which data to gather and then gathering reliable and valid data. Many teams encountered problems in implementing solutions, usually because of resource restraints (e.g., drugs, physical improvements, transportation).

4. Recommendations for Training to Improve the Work of the Teams

Zambia’s healthcare system should develop a simpler five-day training package in team problem solving for district training. It should draw on the experience of links and coaches who have designed five-day or 20-hour courses.

For the first cycle, use “learning by doing” for teams with little training. In these cases a coach should attend each meeting to train the team through learning by doing and to show good practices in documentation, how to use the methods, and how to link the steps.

5. Findings on the Results and Benefits of the Teams’ Work

The results of the teams’ work were assessed through measurable changes documented or reported. Five of the 26 active teams achieved measurable changes in quality, and eight others reported that they had achieved significant quality improvements but did not have data to show it. (The evaluation confirmed that some teams achieved measurable improvements to community health [e.g., lower malaria incidence], clinical care process [e.g., increased rate of immunization], and patient quality [e.g., shorter waiting times].)

6. Other Recommendations to Improve the Work of the Teams

The “team evaluation” system used in this study should be piloted as a method that coaches could use to assess teams and to give feedback on how teams can be more effective.

Zambia’s healthcare managers and providers should develop skills in deciding when to use the full problem-solving cycle and when not to. Links and coaches should have more training in how to judge and advise on which problems require the full problem-solving cycle. They should train and advise teams on how to decide and when to use an alternative, more cost-effective method for solving problems.

Teams should experiment with user and neighborhood involvement in QA problem solving. Users should be added to selected teams, and neighborhood involvement in problem identification and solution should be developed. Pilot efforts to make recommendations for increasing community involvement should then be evaluated.

G. Findings and Recommendations: QAP Support Systems

In the context of the Zambian health sector reform, QA activities are being implemented within an integrated framework for service delivery. As a result, training, supervision, monitoring, and other systems that support the delivery of essential health services have included a QA component. Consequently, the main support systems for QA evaluated in this report include QA training, the QA coaches/link facilitators network, documentation and reporting of QA activities, and supervision of QA activities.

1. Training in Quality Assurance

Findings on Training in QA

At the central level, the Service Quality and Performance Audit unit of the Directorate of Monitoring and Evaluation is responsible for ensuring that all levels of healthcare are sensitized to the concept of quality assurance. This unit provides training and technical oversight in QA to District Health Management Teams (DHMTs) and health centers. Staff reported that the main constraints to delivering QA training are the funding limitations, lack of transport, and coaches’ locations.

At the regional level, no special training has been given to staff since the formation of the regional directorates. The intent of the CBoH had been to provide training to the regional office to sensitize these staff to QA. However, the ban on workshops, delays in appointing regional office staff, and the simultaneous introduction of hospital accreditation activities may all have contributed to the lack of QA training at this level.

At the district level, staff have received varying degrees of training. Though few directors, if any, were known to have received any formal QA training, several DHMT staff had been trained specifically as QA coaches or link facilitators or had otherwise participated in some level of QA training.

At the HC level, the extent of QA training varied by district. It seems that no uniform approach to training was adopted at this level, but rather facilitators and coaches devised training plans to suit local circumstances. Training needs, including the selection of staff for QA training, are reportedly determined through supervision and on-the-job performance.

Recommendations on Training in QA

To ensure that priority is given to QA training, a training needs assessment should be done as part of the development of the yearly action plan. In reviewing these plans, the CBoH should ensure that QA training is adequately planned and budgeted.

An adequate pool of QA trainers/experts at the national level should be developed. While QA training is currently a function of the CBoH, its capacity to provide responsive, consistent training support relies on having a sufficient number of staff to perform this function at various levels of the system. At present, the expertise to provide adequate QA training is too limited.

QA training should be given to the relevant regulatory boards to incorporate QA concepts into preservice as well as post-basic training curriculums.

All professional staff at regional and district offices should be given some training in QA, within resource constraints. As suggested by some districts, QA could be incorporated into other management training or capacity-building sessions.

2. Coaches and Link Facilitators

Findings on Coaches and Link Facilitators

Health center staff reported that most coaching visits to the HCs were not regularly planned and performed unless they occurred as part of the DHMT supervisory visit. How often coaching visits coincided with the team meetings and how timely the visits were in addressing difficulties encountered by the teams remained uncertain.

Some link facilitators reported that the motivation and ability of the QA teams to work through the problem-solving process usually appeared to be externally driven, i.e., a visit by the coach or facilitator would prompt a team to complete one or more steps in the process.

Several coaches and facilitators recognized some limitations in their ability to provide adequate support to the teams. For example, some felt that they could not devote enough time to QA activities, particularly if they were managers or held other positions on the DHMT (as many did).

Local factors, such as staff de-linkage, drug shortages, and funding problems, were commonly seen as obstacles to effective implementation of QA activities. However, the evaluation team believes that the degree of skills transfer and coaching support usually depends on the ability and willingness of district staff to effectively plan for QA, the amount of resources committed to train HC staff and support coaching, and the motivation of individual coaches and facilitators.

Recommendations on Coaches and Link Facilitators

At least one staff on the DHMT, i.e., a district-level coach or link facilitator, should have responsibility for QA activities in the district. Ideally, this person should participate in the supervision visits to the HCs and include QA in the integrated supervisory approach.

QA training should further strengthen capacity in QA planning, effective communication and teaching, and supportive supervision. Furthermore, support visits to coaches and link facilitators should be intensified (at least early on) to further ensure that training efforts do, in fact, generate QA activities.

District offices and coaches should take advantage of existing opportunities (e.g., district-level meetings and other training workshops) to update their QA training and share information on QA activities and quality of care issues.

3. Documentation and Feedback Mechanisms for QA Activities

Findings on Documentation and Feedback Mechanisms for QA Activities

At the regional level, specific knowledge regarding HC quality assurance activities and the work of the coaches and link facilitators is limited. Reports of QA activities are not submitted to the regional office, and existing reporting forms do not capture information about QA.

At the district level, a summary report of HC activities is completed by the link facilitator and forwarded to QA staff at the CBoH. Quarterly meetings of all link facilitators are held to disseminate results and share experiences regarding the work of their teams. The CBoH uses the results of these meetings to identify opportunities for improvement and track the number and locations of active QA teams.

At the HC level, the recommended storybook format is intended to facilitate efficient and complete documentation of the team problem-solving activities. Many were incomplete or had not been regularly updated by the teams, and the supply of storybooks was often inadequate.

Recommendations on Reporting and Feedback Mechanisms for QA Activities

Reporting of QA activities should be included in existing reporting systems at regional, district, and facility levels; timely feedback should be given to the appropriate levels; and information should be shared between as well as within levels.

QA staff at the CBoH should help determine what information on QA activities would be useful at each level of the health system and how it should be reported.

QA staff should ensure complete documentation (i.e., in storybooks) of QA activities and effective use of these documents to monitor the work of teams. Storybooks should be available in sufficient quantity.

4. Supervision of QA Activities

Findings on Supervision of QA Activities

Discussions with regional staff indicated that the region can influence the quality of care at the HC level by including DHMT clinical staff on the performance audit visit, then delegating responsibility for solving identified problems to those responsible at the district level.

At the district level, supportive supervision, in the form of a formal integrated team visit to the HC, was reportedly often used to monitor QA activities and identify problems to be addressed by the problem-solving teams.

In general, HC staff appreciated the need for frequent and “supportive” visits from their DHMT, but many expressed a desire for more frequent formal visits from district staff, especially to address technical issues. Though technical supervision was reported to be routinely planned and performed, HCs often cited less frequent visiting than their district had reported.

Other planned and unplanned visits to the HCs were also reportedly done, quite often to address problems identified during the formal visit. In general, unannounced visits by the director or other district staff were thought to encourage continued attention to quality.

Recommendations for Strengthening Supervision of QA Activities

Regional offices should ensure that adequate and frequent supervision is provided to the HCs by the DHMT. Since supervision is planned and budgeted as part of the yearly action plan, some interim review of achievements could reveal where supervision problems exist.

The district should plan and budget for an adequate number of technical supervisory visits and ensure that they are done as planned. These visits should be used to initiate and support problem-solving activities at the HCs and, in the spirit of supportive supervision, allow for adequate feedback and local resolution of problems.

The person(s) responsible for QA activities at the DHMT should ideally be involved in quarterly integrated supervisory visits to health centers. Many QA coaches and link facilitators were found to be DHMT staff, which appeared to facilitate the integration of QA into their technical supervisory duties.

Table 1-1
Summary of the Main Recommendations of the Evaluation Team

Category	Topic	Recommendations
General	QA Policy	<ul style="list-style-type: none"> ■ Develop a national QA policy that includes the private sector
	Strategic Planning	<ul style="list-style-type: none"> ■ Strengthen the vertical integration of QA into all levels of the health system ■ Strengthen the horizontal integration of QA into other directorates of the CBoH ■ Strengthen the integration of QA within the private health sector and parastatal institutions
Standards of Care	Development of Standards	<ul style="list-style-type: none"> ■ Design a policy for the development, adaptation, and revision of clinical care standards ■ Develop and adapt training and other reference materials that are consistent with the standards of care ■ Develop job aids based on assessment of the needs of health providers
	Communication of Standards	<ul style="list-style-type: none"> ■ Develop a national strategy for communication of standards that relies on behavior change principles ■ Include new standards in the curriculums of Zambian nursing and medical training institutions ■ Continuously reinforce the standards of care
Performance Monitoring System	Measuring Compliance with Standards	<ul style="list-style-type: none"> ■ Measure health workers' compliance with process standards ■ Explore the causes of poor performance ■ Establish a formal quality performance-based recognition and reward system
Quality Improvement Activities	Productivity of the Problem-Solving Teams	<ul style="list-style-type: none"> ■ Investigate methods for improving quality in HCs with five or fewer staff ■ Continue using the problem-solving model, but with simplifications and with modifications to training ■ Develop a simpler, modular 5-day QA training package for district training ■ For the first cycle, use learning by doing for teams with little training ■ Pilot-test the team evaluation system as a method for helping teams to learn how to be more effective ■ Develop skills to decide when to use the full cycle and when not to ■ Involve users and NHCs in problem solving
QA Support Systems	QA Training	<ul style="list-style-type: none"> ■ Assess QA training needs for the yearly action plan ■ Develop a pool of QA trainers/experts at the national level ■ Deliver QA training to the regulatory boards ■ Deliver QA training to all professional staff at regional and district offices ■ The DHMT should identify staff within the HCs for QA training ■ Train at least 2 people per HC in QA
	QA Coaches and Links	<ul style="list-style-type: none"> ■ At least one DHMT staff should have responsibility for QA activities in the district ■ QA training should further strengthen capacity in QA planning, effective communication and teaching, and supportive supervision ■ District offices and coaches should update QA training and share information on QA activities
	Documentation and Feedback on QA Activities	<ul style="list-style-type: none"> ■ Include QA activities in existing reporting systems at regional, district, and facility levels ■ QAP staff should identify what information on QA activities is useful at each level of the health system ■ Ensure complete documentation of QA activities and their effective use to monitor the work of teams
	Supervision of QA Activities	<ul style="list-style-type: none"> ■ Regional offices should ensure that DHMTs carry out supervision according to standards ■ Each district should plan and budget for appropriate supervision visits and ensure that they are carried out as planned ■ The person(s) responsible for QA activities at the DHMT should be involved in quarterly integrated supervisory visits to HCs

The Zambia Quality Assurance Program Final Evaluation

I. Introduction

A. Purpose of the Evaluation

Since the 1993 start of the Zambian QAP, there has been no evaluation of its impact or documentation of its successes and challenges. After completion of the initial plan, which consisted of building a QA capacity in-country, the CBoH requested an evaluation to help design the next steps to further improve quality of healthcare. With USAID financial support, CHS was selected to lead an international evaluation team.

This report reflects three weeks of fieldwork, from September 14 to October 2, 1998.

The main objective was to identify the main lessons learned from five years of QAP in Zambia in order to design the next steps for improving the quality of its healthcare. This information would guide discussions on this topic during a joint CBoH-donors meeting in November 1998.

Related objectives were to: (a) review the previous years' performance through achievements, (b) identify problems and challenges, and (c) suggest recommendations to overcome the challenges.

More information on the mission's purpose is presented in Appendix A.

B. Methodology

The QA evaluation took place in nine districts in four regions. Districts were chosen to include HCs with active QA teams and/or staff who had received QA training. Consideration was also given to selecting districts and facilities that were easily accessible to the evaluation team, though some attempt was made to find representative sites, including both rural and urban health centers. Altogether, 24 health facilities were

visited. Because the choice of facilities was not entirely random, the evaluation team cautions that the sample may not represent the entire country.

The evaluation team divided into three subteams: one each on standards, problem solving, and support systems. The topics for review were identified from a systems view of a QA program after discussion with the CBoH. Information was collected primarily through semi-structured interviews with relevant staff at the central, regional, district, and HC levels. Questionnaires were developed by each subteam and refined during use. To validate the results, the evaluation team presented preliminary findings to the CBoH and its partners at the end of the mission and incorporated their thoughts into the report. This meeting allowed the CBoH and its partners to comment on the feasibility of the recommendations. A draft of the report was given to the CBoH and USAID before the team departed from Zambia, and all parties had an opportunity to make comments on the findings and recommendations.

A summary of data collection methods by subteam follows:

The Standards Subteam interviewed regional office staff, DHMT staff, facility staff, and regulatory boards and private and training institutions in the health sector; it also reviewed supervisory reports, checklists, and other reports used to monitor performance.

The Problem-Solving Subteam conducted focus group discussions with the problem-solving teams or, when not enough team members were present, interviews with the in-charge or other relevant facility staff; reviewed storybooks and other reports of QA activities at health centers (e.g., link facilitator reports); and interviewed QA coaches/link facilitators.

The Support Systems Subteam interviewed regional office staff, DHMT staff, the in-charge or other relevant facility staff, and coaches/link facilitators; it also reviewed supervisory reports, checklists, and other

reports used to monitor QA activities (e.g., link facilitator reports, storybooks).

Though the original scope of work had included the costing of various QA support systems such as training and supervision, not having a local cost analyst precluded any meaningful analysis of costs and measures of cost-effectiveness. (The local expert initially identified for the costing work could not join the team at the last minute.)

C. Structure of the Report

The Executive Summary presents the salient findings and recommendations of the full evaluation report, while Chapters I and II provide an introduction to the evaluation and background on the QAP, respectively. Thereafter, information is organized according to the framework used for developing the scope of work and the design of the Zambian QAP. The QAP carried out activities to build capacity in: (a) setting standards, (b) developing monitoring indicators, and (c) problem solving. It followed a logical QA rationale:

- First, standards of care must be developed and communicated to the personnel in charge of meeting them (Chapter III, Section A)
- Then, compliance of the health workers with standards of care must be measured (Chapter III, Section A)
- Finally, if quality performance is not satisfactory, a team problem-solving approach can be used to make improvements (Chapter III, Section B)

There is no sustainable program without support systems; Chapter III, Section C, covers: (a) the training of health staff in QA, (b) the coaching of the problem-solving teams and the role of the link facilitators, (c) the supervision of QA activities, and (d) the documentation of and feedback on QA activities. Chapter III, Section D describes the role of other organizations that influence healthcare quality, such as neighborhood committees and regulatory bodies.

Chapter IV presents recommendations from the identification of achievements and challenges. The evaluation team decided not only to state recommendations, but also to present a range of available, feasible options, as appropriate, to provide decision makers with choices. This decision was made on the basis of team members' concern that recommendations are sometimes too general and might not be effective because implementation issues have not been addressed. Nevertheless, this

report is not intended to be a detailed implementation plan, but rather a guide to stakeholders in making strategic choices for the next steps of the QAP in Zambia.

The methodology chosen for this evaluation allows documenting both success stories and remaining challenges. This report includes five case studies developed to illustrate both best practices and shortcomings.

II. Background: Quality Assurance in Zambia

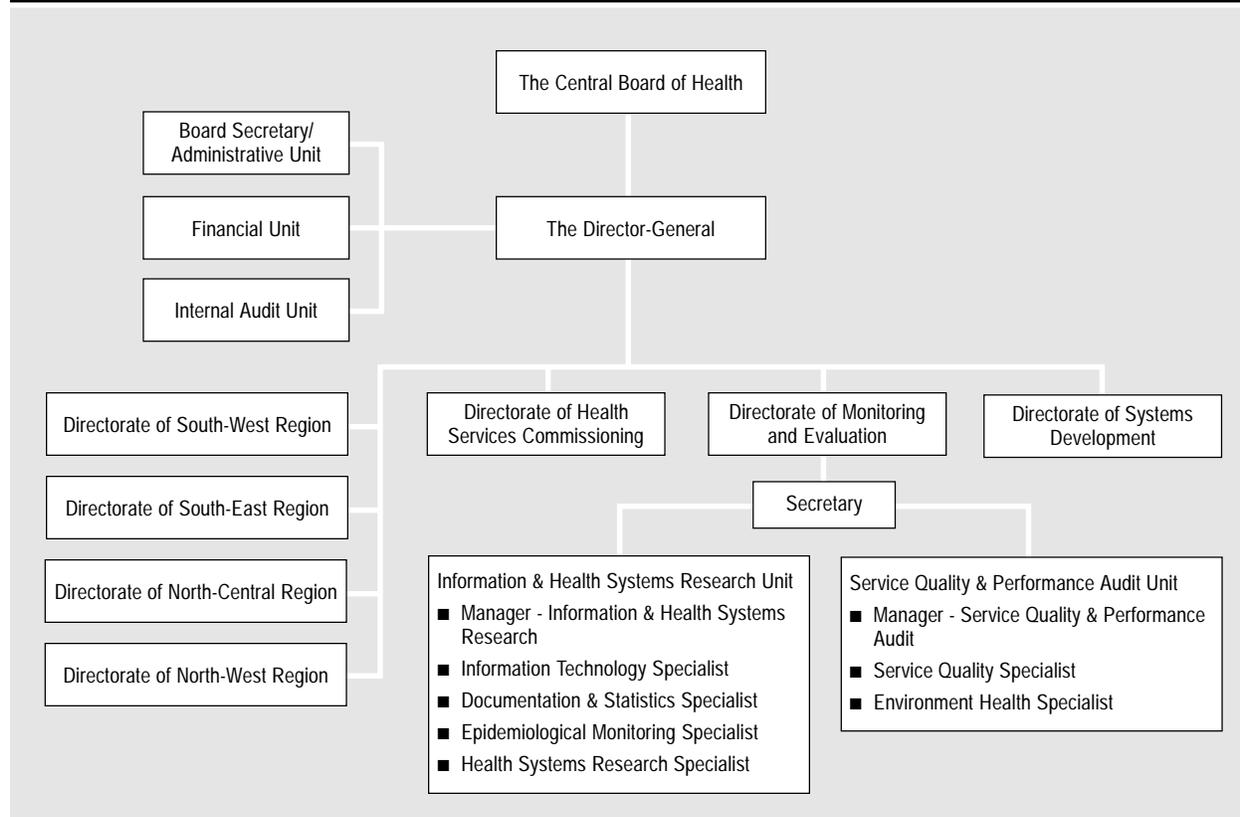
The CBoH QA Unit chose from the outset to concentrate on standard setting, indicator development, and problem-solving teams. In 1993, the QA Unit defined quality as "performance of intervention according to agreed standards" and quality assurance as "the measurement of the actual level of the service provided plus the efforts to modify, when necessary, the provision of these services in the light of the measurement." (Ministry of Health 1993)

A. The Relevance of QA for Zambia

Apart from the moral arguments for healthcare quality in any country, there are good clinical and financial reasons for QA, especially when resources are scarce. An immunization program may achieve a high coverage rate, but vaccines may be ineffective because of poor cold storage or because staff do not know how to ensure that the cold chain is maintained. Drugs may run out because the process for ordering or supplying the right drugs to the right place at the right time is inadequate. Patient attendance or drug compliance may be low due to poor quality interactions between patient and health provider or poor quality patient education by providers.

In addition, patients are customers now that they are making co-payments. Services must be attractive and valued, or patients will forgo them or complain. Health providers should pay more attention to what patients want, including cultural and gender issues, in order to attract and be available to all sectors of the population. Training in quality methods makes it easier for health providers to work with the community to assess needs. This helps providers change their attitudes toward community involvement and gives them ways to discern individual and community needs. Using quality methods, providers' skills improve and their status in the community increases.

**Figure 1-1
CBoH Organization Chart**



B. Zambia's QA Activities

There is no national, integrated QA program in Zambia and therefore no specific policy or strategy to evaluate in terms of objectives and outcomes. The evaluation team found no document with details of a vision, policy, and plan for quality assurance or of the role of the initial QA Unit (and later the CBoH). Within the new structure, it is not entirely clear whether there is one unit specifically in charge of QA activities or if all CBoH units are involved to various degrees.

Quality activities in Zambia occur in two broad categories: (a) the work of the national QA Unit, with its national network structure of local links and coaches and (b) a variety of quality activities and initiatives that have occurred since 1993. Some were instigated by the QA Unit (e.g., quality problem-solving teams in HCs) or involved the QA Unit (e.g., the design and implementation of the Health Management Information System [HMIS]), and some are independent of the QA Unit (e.g., quality components of the Integrated Management of Childhood Illness [IMCI] program).

The following describes activities within these two categories.

The national QA Unit (1993–97) initiated quality efforts in Zambia in 1994: It established quality committees at the provincial, district, and hospital levels. In 1995 it collaborated with laboratory services to help create a quality laboratory policy. The following year it issued the “Patient’s (Client’s) Entitlements and Responsibilities” leaflet to all districts with the intent that they would copy and distribute it to the HCs. It also worked to integrate QA into other activities and sensitize different personnel to quality concepts and issues (HMIS, IMCI, and mental health standards using DySSSy).

The QA Unit’s national training program first piloted QA training and implementation in 1994–95 in three districts (Mansa, Lusaka, and Monze). Sensitization workshops were presented to each district office and its HCs, as was training in DySSSy and indicator development (training was based on the model described in the 1993 MOH *Health Center Quality Assurance Manual*). Next, in 1996, district training and pilot testing of a

problem-solving and peer review system—where one officer-in-charge would visit another HC and assess it using a UNICEF-based checklist—occurred in six Livingstone HCs. Third, training was given to three provincial office personnel of all nine provinces. This included sensitization and standard setting. Fourth, training for certain personnel from all districts was provided in standard setting and developing and monitoring locally specific indicators (DySSSy). About 300 people were trained, including 60 physicians and all district directors, their deputies, and two other DHMT members from each district. (Because of staff transfer, QA capacity is not in all DHMTs.) The training was 10 days. In phase 1 some staff from all provinces were trained in sensitization (one day) and DySSSy (four days). Phase 2 provided indicator development training (five days).

Finally, team problem-solving (five steps) training was given from 1996–98. This covered all districts except those in North-Western Province. About 230 people were trained, including 10 physicians. Each was expected to act as a district coach and to train HC staff as part of the “extension” of the program. Provincial link facilitators were identified to help with the training (they became “regional links” when provinces were disbanded in 1996). The training was 14 days: three days of QA team building and nine on coaching and problem solving followed by practice to validate coaches. Then, three to six months later, the regional link was to visit the coach who would give a one-day training to staff at another HC in order to be validated.

National QA structure of coaches and links: The structure and process of quality supervision and coaching includes supervisory staff of two to three at the QA Unit, 30 or more regional links, and about 200 district coaches (two to four per district). The QA Unit established and trained quality committees in provinces, districts, and hospitals, but did not create formal reporting links between them, although there were national meetings. It changed its approach in 1996 to focus on districts and HCs. The QA Unit was dissolved in 1997 after the creation of the CBoH.

Regular meetings and networks, including national quarterly meetings for all regional links to report activities in districts, began in 1996. These meetings ceased in 1998 when workshops were banned. Regional links visit and support coaches and run local training with coaches for some staff from all facilities in a district, or they expect coaches to run the training themselves. These district training events are usually three to five days and often involve the officer in charge of the HC. The coaches expect people coming to these events to

become trainers and to train their colleagues in the facility and start problem-solving teams. Coaches are expected to do follow-up visits to trainers to provide support to them and the problem-solving teams. Some coaches just train staff at their own or another HC, rather than covering the whole district.

Problem-solving teams: A team of two to 15 people was expected to form in each facility and identify and work on a problem using the five-step cycle. Approximately three to six such teams have been formed in most districts, holding from 150–300 team meetings between 1996 and 1998. Some hospitals have formed a “quality committee,” which may function as a problem-solving team. Standard setting and indicator development have occurred in some HCs, and some districts have developed and disseminated protocols.

Local activities with a quality component: Quarterly supervision visits of HCs by district personnel can involve assessment and feedback about the facility, clinical practice, and patient relations, but often the last two are not covered. Neighborhood, HC, and area committees present consumer views to HCs and districts, and can work with staff to resolve quality problems. Routine systems for the collection and use of information include some quality indicators, including HMIS self-assessment forms, quarterly progress reports, IMCI monitoring surveys, and Safe Motherhood. Lastly, the performance audit by regions was intended to include a quality component.

Another significant QA activity: In 1998 the Zambia Health Accreditation Council (ZHAC) pilot tested the accreditation of hospitals with the Joint Commission International.

III. Achievements and Challenges

This chapter describes the achievements and challenges in: (a) the development of standards of care, (b) their communication to health providers, (c) the mechanisms to monitor compliance with standards, (d) the productivity of the problem-solving teams, and (e) the establishment of support systems for the QAP in Zambia.

A. Standards of Quality for Zambia’s Healthcare System

Standards are a key element of a QAP. Without explicitly stated standards, it is difficult to objectively assess

performance and measure the quality gap. Simply stated, a standard is a statement of expected quality. Standards make explicit an organization's expectation for quality and provide guidance for actions and decisions in relation to the provision of healthcare. If quality is "doing the right thing right, right away," then the standard makes explicit who should be doing what, in which way, and when.

The evaluation team asked health staff at various levels of the health system what their understanding of a standard was. Their answers included: "A statement of performance that is measurable," "A statement of an achievable and acceptable target," "The level at which something can be attained," "A set of procedures and rules to follow," "The way you care for a patient," "Agreed and acceptable ways of doing things, which are measurable and feasible," and "Unit of measure against which you measure performance." These answers show a generally good understanding of standards, but most respondents had some difficulty in identifying available standards.

Case Study Number 1: Kabwe District Health Office Develops Its Own Protocols

During supervisory visits, the link facilitator of the Kabwe DHMT noticed that the referral of women in labor to the hospital was inappropriate, resulting in maternal deaths before or just after arrival. Once women arrived, admissions procedures were incomplete and the gravity of their condition was not correctly assessed. The supervisors also noticed that the management of a patient at the outpatient department of the hospital consisted mainly of a drug prescription for the relief of the main symptom without any physical examination. In fact, the procedures for clinical management of both situations varied considerably among health providers.

The DHMT concluded that health providers needed a clear protocol for the referral and admission of women in labor and for the screening of patients consulting at the outpatient department. The link facilitator had been trained by the Zambian QAP in a participatory method to set standards (DySSSy) and used his skills to improve the work of the health providers. Two separate groups, one of midwives and the other of clinical officers, met three times in one month for two to three hours each time. The only costs were minimal transportation expenditures. The midwives used some

1. The Development and Adaptation of Standards

Standards are rarely developed from scratch, but usually adapted, by local experts, from already existing material, to a specific situation or environment. In practice, locally recognized experts are usually asked to work as a group to reach a consensus on the standards of care. It is of utmost importance that standards be scientifically sound and that their validity be checked by a review of evidence-based medical literature.

Expert consensus is not necessarily appropriate for the development of action-oriented standards, such as target standards developed through DySSSy. This method guides a health facility team in developing its own standards to improve its specific situation. Such standards look more like targets (see Case Study #1).

The Main Documents on Standards in Zambia

Numerous clinical care standards have been developed in Zambia, covering all activities of the essential package of services that first level health facilities provide. The main ones fall into four categories:

medical textbooks to adapt standards for referral and admission of women in labor; the clinical officers brainstormed the screening procedures at the outpatient department. Both groups quickly reached a consensus, but encountered some difficulties at the beginning of implementation. Health providers said that they do not like lengthy checklists because they are too time-consuming and because they felt detailed procedures were a way to control their practice. As a result, they take shortcuts. Their involvement in the development of the protocols helped lift the resistance. (The main constraint was to be able to get the people together because of time limitations.)

The Kabwe DHMT learned some lessons from this experience. First, the providers that most resisted the application of the new protocols were the ones not involved in their development. Second, the staff gained confidence by setting realistic standards for their working environment. Third, the staff perceived that its work was made easier because the protocols were posted on the walls as a reminder. The district is following up on the compliance of health workers with the new protocols through supervision visits. Motivated by its success, the Kabwe team is setting standards for the packaging and prescription of antibiotics. The protocols developed by the Kabwe District Health Officer are presented in Appendix B.

Special programs have developed clinical guidelines:

These guidelines focus either on one health condition or on a set of special issues. Among them are: (a) guidelines for malaria case management from the Tropical Disease Research Centre (TDRC), (b) maternal health guidelines from the Safe Motherhood program, (c) tuberculosis guidelines from the tuberculosis control program, and (d) HIV/AIDS guidelines from the HIV/AIDS unit.

Some guidelines developed by international health agencies have been adapted to Zambia: These guidelines promote an integrated approach targeting a special population. These are: (a) the syndromic case management of sexually transmitted diseases (STDs) and (b) IMCI.

The CBoH developed of the “Integrated Technical Guidelines for Frontline Health Workers” (ITG): The ITG identifies the six health thrusts that are Zambia’s priority public health problems and prescribes their management: (a) malaria, (b) reproductive health and family planning, (c) HIV/AIDS and STDs, (d) child health and nutrition, (e) tuberculosis, and (f) water and sanitation.

Standards for accreditation of hospitals: These were developed jointly by the CBoH and the Joint Commission International and were being tested during the evaluation in 20 hospitals. They will eventually cover all hospitals in Zambia. A document from the MOH on certification of hospitals describes minimum standards for hospital levels 1, 2, 3, and 4 (MOH Undated), but it has not been officially adopted.

The QAP took a more action-oriented, problem-solving approach to the development of standards. In 1995, the QA Unit of the Health Reform Implementation Team (HRIT) used the DySSSy method to develop a manual of standards for clinical and nursing care (MOH 1993b). It was used as a training manual for setting local target standards aimed at initiating the development of action plans for the improvement of health services by trainees. After returning to work, trainees were supposed to involve their peers in developing standards adapted to their specific situation. The advantage of this method is that the health providers are involved in the development of the standards they will use, and it provides a simple approach for problems that are not too complex. It also exposes health staff to the concept of a systems view and its input, process, and outcome components. Follow-up on this training occurred during the second round of training in monitoring indicators. Although the results were uneven with

some teams more advanced than others, the capacity it built helped the staff develop their action plans and monitor their progress. However, there is little documentation on the full impact of the training.

The Development and Adaptation of Clinical Standards: The Roles of Stakeholders

The development of clinical guidelines remains centralized, with little involvement of the QAP.

The Systems Development Directorate noted a lack of ownership and coordination by the CBoH in the development of clinical guidelines by different programs. But because the various guidelines could cause confusion among health staff, the CBoH decided to develop a manual of standards (a reference book) for the six health thrusts. A task force on integration of vertical programs assembled all existing guidelines, and groups of experts from the MOH, CBoH, University Teaching Hospital (UTH), and other institutions together developed the ITG. The guidelines were not tested but were well received by the health workers who received copies.

The regional directorates visited by the evaluation team had not been involved in the development of any standards of care, including the ITG.

Most of the DHMTs the team met had received the ITG draft and were asked to make comments and suggest changes. Some took this more seriously than others and organized technical meetings to address it, but in general this activity was not undertaken enthusiastically. Staff largely reported that they felt that the work was too advanced, with little room for change. Their involvement might have been greater at an earlier stage. This is important for future revisions since the sense of ownership of standards of care influences the effectiveness of the communication and monitoring strategies, which the districts manage.

The evaluation team met no health center staff who had been involved in the development of the ITG.

The private sector is not sufficiently organized to produce its own guidelines. Its role, through the Faculty of Private Practitioners, in the development of clinical standards is limited to the irregular participation of local experts in the writing of medical textbooks or guidelines for health providers, initiated by special programs or the CBoH.

Official Policy for the Development and Revision of Clinical Standards

There is no official policy for the development and revision of national standards of healthcare. The QAP indicated that the Systems Development Directorate is in charge of this kind of work.

Problems in and Factors Affecting the Success of the Development of Standards

The evaluation team was unable to document some aspects of the development of the ITG, which involved the collaboration of many public health and medical experts with support for coordination from an international agency. It would have been useful to learn the extent to which evidence-based medical literature was used and the cost. The ITG was produced in a remarkably short time: five months.

The staff trained in DySSSy met peer inertia in their facilities. The evaluation team found that not much happened after the training because of numerous difficulties, especially the setting of unrealistic standards (requiring unavailable resources) and the inertia of their working environment. Staff mentioned how difficult it was to create a team spirit and initiate quality standards. Although no one reason appears to predominate, the evaluation team developed several hypotheses:

- When only one person per health facility is trained, the absence of a sense of ownership of the process in the majority of staff might limit their commitment to implement standards
- If trainees are not the health facility in-charges, their authority to take a lead role might encounter some resistance
- There might also be an age factor; young trainees may not have enough authority to lead a team
- There might be some gender issues; women's teams seemed more dynamic
- When health facility staff is too small (fewer than 10), it might be more difficult to initiate and sustain the team dynamic
- The trainees' capacity to transfer their knowledge to their peers might be limited after being exposed to a new concept not entirely mastered. This may prevent the health facility staff from grasping the concept of standards and thus be unable to operationalize it (much less train others)

- New trainees need close follow-up and access to technical support, which they might not request, such as a coaching mechanism
- When a standard involves a change in individual clinical practice, the influence of the team might be less than for structural standards (cleanliness of the facility) or organizational issues (personnel shifts). This relates to the fact that a patient consultation is usually not a team activity
- The transfer of QA-trained staff between health facilities hampered the continuation of the QA activities. After the departure of the trainee, the team would cease to function
- A minimum level of resources is necessary for developing and meeting ambitious standards, and rural health centers, usually being the poorest, suffer from great inertia

Costs of Developing Clinical Care Standards

The cost of developing standards could not be determined without a cost analyst on the evaluation team. The global cost of the development of the ITG could not be documented because it was funded by a donor agency and the person in charge had since left the country. The retrieval of this information would have required considerable time.

2. The Communication of Standards

After clinical standards have been set, the health providers who are expected to comply with them must know them, understand them, have the skills to apply them, and accept them. This "communication" strategy goes beyond the simple use of classic information and dissemination channels and encompasses activities to induce and sustain a behavioral change in clinical practice. This is complex since practitioners accustomed to managing a specific health condition in a certain way are unlikely to change their practice after training only. Substantial research in this area has been done in industrialized countries, and general principles to change behavior are well known, such as the involvement of the users in developing the standards and the leadership of recognized experts in their dissemination. However, there is little research on this issue in developing countries.

One way to communicate the standards to users is through in-service training. Although this might be an essential step, it is not the only one. In fact, decision makers should be creative in seeking the most

cost-effective combination of ways to communicate standards, such as:

- The involvement of regulatory bodies and professional associations
- Distance-learning programs (computer, radio)
- Distribution of user-friendly leaflets
- Inclusion of the new standards in the preservice curriculums of training institutions

Communicating Standards to Healthcare Providers

The plan to communicate standards in Zambia relies entirely on classroom training, which the CBoH is using for combined ITG and HMIS training. This training was expected to be complete in all districts by 1999. This strategy should be monitored to study the real impact of only in-service training on provider behavior. If only one staff per clinic is trained, in-facility dissemination will be unreliable and perhaps ineffective. (Training in ITG is also part of the curriculum for Public Health Practitioners, a new cadre of professional HC staff to be developed.)

Most of the regional directorates and DHMTs that the evaluation team met did not have a specific strategy for communicating the ITG to staff. The distribution itself was a problem; photocopying resources are limited, so few HCs had received it. Because the communication method has not been fully successful, District Health Officers (DHOs) were familiar with the ITG, but few health practitioners were. (Several districts mentioned presenting and discussing the guidelines during their technical meetings with health center staff.) The ITG booklet has not been given to private practitioners and other institutions. The guideline most frequently cited by public facilities was the TDRC malaria booklet (TRDC 1997).

Healthcare Providers' Use of the Clinical Guidelines

District health staff perceive the format of the ITG as not user-friendly. They welcome it as a reference book, but it resembles a medical textbook, raising the question of its expected use to improve performance. As part of the communication strategy, health providers should be trained to make the best use of the ITG, both during and outside patient consultations. Health providers had

Case Study Number 2: Communicating Integrated Technical Guidelines

The CBoH published the ITG in May 1997. This 216-page document was intended to help providers manage the six most important health thrusts by reminding them of the protocols. It explicitly delineates standards for quality care and services and was the first attempt to compile quality standards for the delivery of the essential package of health services.

Eighteen months after its release, the use of the ITG by the target population remained limited for two reasons: a delay in its dissemination and its format. None of the regional directorates that the evaluation team met participated in the distribution of the ITG to its target audience. In fact, one regional directorate was not even aware that they had a copy in their library. All the DHMTs visited had received it, but only one or a few copies and not enough for all health centers. Most DHMTs did not know how to distribute it and were reluctant to make copies because of the amount of paper it would consume. Only one DHMT reported writing a summary and photocopying it for the health centers. All regional directorates and DHMTs reported that they found the ITG "bulky, not user-friendly, and too complicated for some staff." Consequently, the

vast majority of the frontline health workers that the evaluation team met did not have it. Some had heard about it, and the few who had it did not know how to make the best use of it. Some district offices, however, discussed the ITG content with health center staff during technical meetings. Although the evaluation team did not further explore the issue by testing users' knowledge of the standards, the main lesson drawn is that any attempt to develop standards must be accompanied by a clear and thoroughly thought-out communication strategy. Just sending guidelines without explaining how to use or communicate them is not enough to induce change.

The CBoH is currently providing ITG training combined with the training of the districts in the HMIS. Classroom type in-service training seems to be a mandatory step but might not be enough to ensure compliance with standards if user-friendly job aids are not developed in a way that involves the health workers. More operations research on this specific issue is required. The influence of guidelines on clinical practice must draw on behavioral change theories. This also requires a needs assessment for practical job aids that health workers will be willing to use.

difficulty articulating what kind of job aids they need and would use during a consultation to remind them of the steps in the management of a specific health condition.

The limited number of HC staff who have the ITG view it as a reference document and use it during spare time to update their knowledge on treatments, which is a positive finding. However, the ultimate impact on performance and prescription habits must be documented.

District staff also do not use the other guidelines. In the districts trained only in IMCI, a minority of health workers mentioned using the IMCI guidelines. The main reasons given for not using them were that they take too long and that it is not practical to do so with a patient. One nurse said, “We know these diseases. . . . They are easy to treat.” She said that she had memorized the IMCI guidelines. Others mentioned the fear of looking ignorant by reading a document in front of a patient. Various surveys also indicate that health workers are reluctant to use guidelines during their clinic (Centre for Health, Science and Social Research [CHESSORE] 1997).

Lusaka District has developed some protocols for common causes of consultation and trained staff in their use. The documents look user-friendly, providing both an algorithm and a narrative explanation of the case management steps. However, the evaluation team found no information on their use; personnel seemed not to be using them and even had difficulty finding them.

In general, the design of clinical guidelines should be driven by the type of job aids health providers need to guide them in their work. The ITG’s different chapters have different structures. Some are organized as flow-charts, others have lists of instructions, and others are narrative only.

The Role of QAP in Communicating Standards

The QAP is not involved in communicating the ITG, which is being done with the training of district staff in the HMIS. The impact of this strategy on health workers’ performance should be monitored.

The communication of the ITG would benefit from the QAP expertise. Medical reference books are needed, and the initiative to develop one consistent with the essential package of health services is relevant and would be appreciated by staff. However, such a document is only a starting point for various activities that would strengthen the standards communication strategy, such as:

The development of job aids: Developers of clinical guidelines should think of the material and format that health workers need to help them deliver quality care. Medical textbooks represent the reference material for the development of job aids.

The statement of standards: Medical textbooks can be used to make standards of care explicit and develop instructions and protocols.

The development of tools to measure compliance with standards: The standards that have been communicated, provided they meet the criteria of good standards, should be the ones used to measure performance of health workers.

The development of preservice training materials: Medical textbooks are good references for the content of preservice curriculums. If this were the practice, then the cost of in-service training would be reduced.

The QAP could be involved in the first three activities, which require specific QA expertise.

The Main Constraints in Communicating Standards

The main constraints to an effective communication strategy are: (a) the absence of an integrated policy for the communication of standards that relies on principles for behavior change and (b) the complexity of the factors that influence a clinical practice change in a specific society or context. The most cost-effective strategy to communicate standards should be determined.

The Cost of the Communication Strategy

The evaluation team was unable to derive any meaningful cost without a cost expert.

3. The Quality Performance of Health Facilities

Performance can mean different things, ranging from the physical improvement of the facility to the achievement of specific service coverage. The dimension of performance investigated by the evaluation can be called quality performance and can be defined as compliance with structural standards for health facilities, with standard operating procedures by managers, and with clinical care standards by health providers. In this evaluation, the team looked mainly at the technical quality of the healthcare delivery process, trying to answer the questions, Are health providers doing what they are supposed to do? How can we know? and How can service be improved?

Case Study Number 3: Monitoring in Lusaka Improves Outcomes

After the introduction of IMCI, four health facility-based surveys documented change in health worker performance over a two-year period in Lusaka District. The compliance of health workers with IMCI was measured through direct observation of provider/patient encounters three months before the IMCI training, and then repeated at several month intervals. The results in Table 4–1 show that performance was very poor before training, improved dramatically after, and then started declining.

The DHMT was concerned about this trend and decided to include observation of the sick child in the supervision visits. Supervisors were trained in IMCI and a one-page checklist was designed to serve as a job aid and was added to the supervision checklist. During their visits, supervisors identified tasks not performed correctly by the health workers and provided on-the-job feedback and training. This strategy produced improvements, as shown by the results in Table 4–2.

This case illustrates the influence of regularly reminding health providers about the standards of care after identifying shortcomings through direct observation of their performance. When supervisors pay attention to the important aspects of care, the impact of making a correct diagnosis, prescribing a correct treatment, and the health outcome are better. While not unique, the Lusaka case represents a best practice for Zambia that should be disseminated to other districts. Its lessons should not be limited to the IMCI standards but expanded to encompass the standards for the other health thrusts.

Table 4–1
Changes in Provider Performance with Training and with Time

The Health Worker: (Percentage of Times)	Before Training	Two Months after Training	Eight Months after Training
Counted respiratory rate for cough	2	70	67
Checked dehydration by pinching skin	34	55	60
Prescribed antibiotics for a common cold	47	15	28
Explained the treatment	25	69	40

Table 4–2
Changes in Provider Performance with Clinical Supervision

The Health Worker: (Percentage of Times)	Before Clinical Supervision	After Four Rounds of Clinical Supervision
Counted respiratory rate for cough	67	84
Checked dehydration by pinching skin	60	61
Prescribed antibiotics for a common cold	28	17
Explained the treatment	4	79

Assessing Quality Performance of the Health System and Services

Many health system stakeholders are involved in monitoring performance. The various levels of the health system monitor the performance of the level directly below. Regional directorates audit the district teams who, in turn, supervise the HCs.

All cost centers (every unit that manages a budget) are involved in some sort of self-assessment, since they report on their performance toward achieving their action plans (quarterly progress report) and soon will report on national health outcome targets (HMIS).

The regulatory bodies—Medical Council of Zambia (MCZ) and the schools of nursing (General Nursing Council [GNC])—are involved in monitoring the private clinics and hospitals.

The Zambian Health Accreditation Council (ZHAC) is starting an ambitious, nationwide accreditation program for all hospitals.

The involvement of the users in monitoring the performance of health services and providers is informal. Individual patients express their dissatisfaction with quality of care irregularly, most often when they have to pay and do not get medicines. (The notion of paying for

services only, and not goods, has not yet reached the poor.) Some health facilities have suggestion boxes, but only literate patients can use them and usually do not. The NHCs represent an opportunity for involving the community in a more structured way to monitor quality while educating users on what they should expect.

District supervision of health centers is one among many mechanisms to assess performance. There are four main mechanisms to monitor performance of health services: performance audits, supervision visits, the HMIS, and quarterly progress reports.

Performance audits: Each of the four regional directorates is expected to perform a quarterly performance audit, consisting of an inspection of DHMTs, hospitals, and health centers. In practice, the regional team inspects the district team and they together inspect one or two facilities per district. Four different forms are used: (a) the regional directorate quarterly performance audit form, (b) the integrated performance audit checklist for financial assessment, (c) the aged imprest analysis, and (d) the health services standards. Performance audits mainly collect information on financial management, accounting procedures, facility structural standards, and managerial and planning processes. Progress according to action plan is monitored through output and outcome measures for all cost centers, using record reviews, observation, and interviews with staff. Few indicators collect information on process standards, such as the pattern of antibiotic prescription, the investigation of maternal deaths, and the proportion of patients diagnosed and treated according to standards.¹

Supervision visits: DHMTs irregularly perform supervision visits of HCs. All DHMTs indicated that they supervise all HCs monthly or quarterly, but this was not always confirmed by the HCs themselves or by the supervision reports. A 1997 situation analysis of reproductive and child health services found that in six months, 32 percent of HCs were visited three times, 23 percent twice, 23 percent once, and 22 percent had not been visited (Central Statistical Office 1998). Formal supervision visits usually occur in teams of three or four, which see two to three HCs per day. The average visit lasts one to two hours.

Checklists are used during supervision. The evaluation team identified four different ones (see Table 4-3 for their main features; see Appendix C for examples). All checklists have serious shortcomings to assess the

quality of clinical care. An attempt by the CBoH to develop an integrated checklist involving direct observation of care has been started but not completed. Only IMCI tasks are being recorded and other activities of the six health thrusts are just mentioned without any details. Although most districts that the team visited had received the integrated checklist developed by the central level, only one is currently using it. The main reasons for not using it are that it is too time-consuming to observe the health worker deliver care and that supervisors prefer checklists that focus on inspection of facilities and record reviews.

The evaluation team found a consistent pattern among DHMT staff in avoiding the assessment of clinical performance of the health workers through direct observation of a consultation. One district even re-designed the checklist they had been using and deleted this previously carried-out task. Another one uses the “health center supervision checklist” and fills in every section except the one on observation of care for children. As a result, recommendations found in supervision reports emphasize the importance of managerial functions (record keeping) and structural criteria (painted wall, well-kept garden), signaling that compliance with clinical standards is unimportant. There are some exceptions to this trend. For instance, the Monze DHMT reported that a clinician directly observes health workers (this was confirmed by HC staff), but they don’t use any checklist, and the supervision reports do not mention anything specific in this regard.

The Health Management Information System (HMIS): This is a redesign of the former Health Information System wherein health facilities reported service statistics to the central level with no local follow-up. The system has been pilot tested in 15 districts and is being rolled out nationwide, combining training on the Financial Accountability Management System and the ITG over a two-week period.

The parts of the HMIS most relevant to this mission are the quarterly self-assessment forms that are completed by HCs and then by districts to monitor their own performance against predetermined national and local targets. The forms are designed to help teams identify the areas of low performance and take action. Health center forms (HIQ.1 and HIQ.2) collect information on 15 input and output indicators related to utilization of services and coverage statistics. The only indicator that

¹ The latter is measured through review of a sample of 10 records for out-patients and in-patients. Since medical records usually indicate only the symptoms and the treatment, these reviews check the appropriateness of the treatment but not the accuracy of the diagnosis. There is no direct observation of the *delivery* of care, so the clinical performance of health workers remains unknown. Review of performance audit reports by the evaluation team confirmed this.

**Table 4–3
Features of Supervision Checklists**

Name (Description) of the Checklist	Health Center Supervision Checklist	Checklist for Assessing Basic Quality of Care at the Health Center Level	A Supervisory Checklist for the Six Health Thrusts	Other Locally Adapted Instruments
Used by	Lusaka, Lufwanyama	Kalulushi, Kitwe	Kalulushi, quarterly	Kabwe
Methods used				
Direct observation of the provider	Yes, for case management of sick child (according to IMCI standards), family planning services, and postnatal visits	No	Yes, only for case management of sick child (according to IMCI standards)	No
Interview with patients	No	No	Yes, health center exit interviews	No
Record review	Yes	Yes	Yes	Yes
Inspection of the facility	Yes	Yes	Yes	Yes
Information collected				
Physical aspect of the facility	Yes	Yes	Yes	Yes
State and amount of equipment and supplies	Yes	Yes	Yes	Yes
Drug stock	Yes	Yes	Yes	No
Coverage and utilization rates	Yes		Yes	Yes
Compliance of health workers with process standards	Yes, for IMCI, family planning, and postnatal visits	No	Yes, IMCI only	No
Appropriate use of drugs	Yes, for diarrhea and ARI only	No	Yes, for diarrhea and ARI only	No
Finances	Yes	No	Yes	Yes
Service statistics	Yes	No	Yes	Yes
Health services checked				
Sick child care	Yes	Yes	Yes	No
Antenatal care	Yes	Yes	Yes	No
Postnatal care	Yes	Yes	No	Yes
Outpatient care	Yes	Yes	No	No
Maternity care	Yes	Yes	No	No
Family planning	Yes	Yes	Yes	Yes
Tuberculosis	Yes	Yes	Yes	Yes
QAP activities				
Setting standards	No	No	No	No
Developing indicators	No	No	No	No
Problem-solving activities	No	No	No	Yes

measures performance is the “daily staff load for curative and preventive care.” Once HCs identify indicators that do not meet the threshold, they are supposed to implement the “triple A approach” (assessment, analysis, and action: an adaptation of the problem-solving methodology taught by the QAP). The links between: (a) performance and (b) output targets and quality improvement activities are explicit. The self-assessment of service performance might help QA teams focus on problems directly related to the delivery of health services. However, the HMIS does not collect information on clinical performance and thus does not identify process and competency issues in the delivery of care.

The quarterly progress reports: Each district sends quarterly progress reports to two CBoH directorates: Monitoring and Evaluation, and Health Services Commissioning. The reports consist of a self-reporting of the achievements of each district in meeting its action plan targets. The information is used to disburse grant money to the districts. All areas of administration (number of meetings held), service activities (coverage and utilization rates), and purchase of supplies and equipment are included. This mechanism is supposed to be replaced by the HMIS self-assessment forms once districts are trained in the new system.

The focus of performance monitoring is on input and outcome data. None of the monitoring mechanisms captures the information that would measure health providers’ compliance with clinical care standards. Table 4–4 analyzes the focus of the data collected through performance audits, supervision visits, and the HMIS self-assessment forms, as a percentage of the total number of items checked at the HC level.

Obviously, the focus is not on the process of care. Supervision checklists that had included the monitoring of care delivery have been discarded by the DHMTs. In Lusaka, the IMCI part of the checklist was never filled out, although supervisors say they are directly observing the treatment of sick children. The DHMT in Kabwe redesigned its own supervision checklist and deleted the direct observation of sick children. It is not clear why district teams are uncomfortable observing health workers.

District-specific activities: Apart from the main mechanisms described above, the evaluation team found examples of innovative district-specific activities to both monitor quality of care and improve it:

Table 4–4
Types of Data Collected on Health Center Performance

Form	Input Data	Process Data	Output and Outcome Data
Performance audit	21	7	71
Health center supervision checklist	76	20	4
Checklist for assessing basic quality of care at the health center level	65	5	30
A supervisory checklist for the six health thrusts	66	29	5
Health center self-assessment form (HIQ.1)	33	0	67

Numbers indicate the percentage of items checked; Totals may not equal 100% due to rounding
 Input Data: availability and state of the facility, equipment, and consumables
 Process Data: direct observation of the care delivered or proxy indicator
 Output and outcome data: coverage and utilization rates, health statistics

- Spot-check visits: organized without warning by DHMT to HCs on an as-needed basis, targeting the centers that do not do well (Monze)
- Peer review of IMCI: performance monitoring done by one health center staff who goes to supervise another HC (Kitwe)
- Weekend coverage visits: a team of HC staff taking turns visiting all the other HCs in the district (Kitwe)
- Technical supervision visits: focus on specific issues or programs, such as malaria control (Monze) or screening of pregnant women for syphilis (Kitwe)
- Maternal deaths reviews: discussing the case among technical staff to identify what went wrong (Chimwemwe, Kitwe)
- Patients’ satisfaction surveys: organized biannually through exit interviews of patients by coaches (Kabwe)

While numerous and varied, these activities and their impact cannot be known without documentation.

Documentation of Changes in Quality Performance

While the results of special surveys are limited and do not allow comparison over time, most information available on the technical quality of care comes from them or research. The evaluation team identified the following:

A 1993 survey by the MOH Health Systems Research

Unit: This revealed that “Standard WHO/Control of Diarrheal Diseases guidelines for case management were adhered to by prescribers in 51.7 percent of patients with acute diarrhea and 42.3 percent of patients with dysentery.” (MOH 1993b) As a result, in 77 percent of cases, oral rehydration solution and antibiotics were incorrectly prescribed, and in 58 percent, incorrectly dispensed. Among the factors responsible for inappropriate use of drugs were the providers’ lack of correct knowledge (44 percent) and the limited use of standard treatment guidelines (14 percent).

A 1996 review by the Participatory Assessment

Group: This revealed that “technical competence and qualifications of clinic and hospital staff was not questioned by patients. However, great concern was expressed over the fact that diseases are diagnosed by simply talking with patients and even the use of a thermometer is rare.” (MOH 1996a)

The 1997 Zambia Situation Analysis of Reproductive and Child Health Services: This assessed quality of family planning services using six criteria (interpersonal relations, choice of methods, information given to clients, technical competence, mechanisms to encourage continuity, and constellation of services). (Central Statistical Office 1998)

The findings point out low performance areas: 1 percent of health providers test for pregnancy, 21 percent perform a clinical exam, and 2 percent look for symptoms of STD. It also revealed serious gaps in the case management of sick children under five according to IMCI standards. Among them: 20 percent of the children are weighed; 2 percent of health providers searched for all four danger signs; 10 percent of all children with a cough had their respiratory rate counted; and 21 percent of pneumonia cases received antibiotics. The study shows the gap between satisfactory knowledge of case management and real performance.

A 1997 review of the HMIS cascade training: This noted that “health workers have difficulties in diagnostic skills, which affects not only quality of care, but consistency and quality of data as well.” (Heydelberg, Mubonda, and Tembo 1997) It also states that the HMIS is hampered by a tremendous load of insufficient

diagnostic and curative skills, which influences the reliability of HMIS data.

The 1997 review of the Extended Program on

Immunization in Zambia: This revealed numerous performance gaps that could potentially prevent the high coverage levels to reduce disease-specific morbidity and mortality in children (Republic of Zambia 1997). Among those gaps, 54 percent of refrigerators had their temperature checked daily, 50 percent of sterile techniques met standards, and 44 percent of the mothers knew when to return.

A survey on quality of care: This indicated that physical examination was performed on 96 percent of patients with malaria at general hospitals but only on 39 percent at rural health centers (CHESSORE 1997).

The CHESSORE performance study: This monitored the performance of health services over three years in four provinces, using malaria as a tracer condition. Three main types of indicators were collected: case fatality rates, health worker knowledge, and preventive activities. The main results are presented in Table 4-5. Although the results have not yet been analyzed and the use of a tracer is questionable, the health workers’ lack of knowledge on the treatment of the most common cause of morbidity in Zambia is striking, as is the worsening of this knowledge over three years. Again, these surveys did not observe the case management of malaria by the health workers, so actual performance is unknown. (CHESSORE 1998b and c).

IMCI Documentation

The only results that the team was able to find on the monitoring of compliance with process standards over time come from repeated facility-based surveys by the BASICS (Basic Support for Institutionalizing Child Survival) program for the implementation of IMCI. The main results are presented in Case Study Number 3. Results in other IMCI provinces (Kitwe) are consistent with the Lusaka findings.

A strong QAP creates an opportunity to establish a quality performance monitoring system. Although monitoring compliance using input and outcome standards is important, any change in output or outcome measures (such as coverage rates) is very difficult to interpret without knowing the specific intervention or structural change. In other words, the process must be documented if one wants to understand a change in outcome or interpret its value. This information is not available in the surveys that we found. The paucity of performance data, as well as the absence of repeated

**Table 4-5
Changes in Health Services Performance (Percentage)**

	Copperbelt		Eastern		Northern		Western	
	95/96	97/98	95/96	97/98	95/96	97/98	95/96	97/98
MALARIA CFR								
General Hospitals								
Under 5s	4.5	3.7	5.2	4.7	6.3	5.9	9	3.2
Over 5s	3.5	2.5	1.7	3.5	5.1	4.7	8.6	4
Other Hospitals								
Under 5s	2.6	4.3	3.8	4.5	6.5	11.6	5.5	4
Over 5s	1.4	5.5	1.9	2.5	4.5	43.4	5.8	5.8
HEALTH WORKER (HW) KNOWLEDGE								
No update of HW knowledge through training session	75	63	72	69	64	63	59	57
HW knows the dose of Quinine								
Child	1	0	0	0	1	2	9	3
Adult	1	0	1	0	1	1	1	1
HW knows the dose of Chloroquine								
Child	5	0	4	1	11	10	11	3
Adult	3	0	3	1	4	2	1	4
PREVENTIVE ACTIVITIES								
Use of bednets by the population, as a result of the HW's promotion activities	6	7	9	6	5	5	17	6
(CHESSORE 1998b and c)								

measurements over time accompanied by a thorough documentation of a QA intervention, is a serious constraint in the evaluation of a QA program. In addition, in the context of the health sector in Zambia, it would be difficult to relate a change to a specific QA intervention, given all the other influences, unless a quasi-experimental research design had been created at the start.

How Performance Information Is Used to Improve Quality of Care

Performance information is used in an ad hoc manner. DMHTs have not been able to describe a formal process to review and analyze the information on the performance of health facilities that is collected during supervision. Notwithstanding the fact that information is not focused on the process of care, the compilation of results was not done systematically.

One DHMT computed an overall performance score but, unfortunately, used a poor checklist, thereby

deriving meaningless figures. The trends in the overall score were not analyzed by the district, so it could not objectively interpret any change.

All supervisors said they give some feedback on their findings to the HC staff. Most write recommendations in the HC visitor book and/or a report kept at the district health office. The evaluation team reviewed a number of these documents; they focus mainly on structural improvements and exceptionally report on clinical care delivery.

Health providers' competency is almost never tested. No district said that they test the knowledge and skills of health providers to determine the causes of poor performance. The supervisors mentioned asking providers about reasons for their findings, but they asked no questions on the case management of a specific health condition. The evaluators felt that district teams were not comfortable testing the health providers' knowledge and skills.

Districts want to reward the best performers, so they need to identify them. Districts were very open and receptive to creating a performance-based incentive system. Several districts mentioned that some staff had been given a Labor Day award; some awarded money to the best HC to buy cleaning products, while others are thinking of giving trophies. Limited resources will influence the type and level of award, but the willingness to identify best practices is a major asset.

Some districts see another reason to identify the best performers: to use them to train others. The effectiveness of this peer training approach is largely undocumented, but it might help disseminate best practices.

As part of the de-linkage of the health staff from civil service to district health boards, a formal competency appraisal is planned.

The HMIS represents an attempt to integrate performance measurement with quality improvement methods, but its indicators do not capture information on the process of care. The development of a link between the results from the HMIS and the problem-solving teams through the triple A approach is a positive development initiated by the QAP. The way health output and outcome data will be used to make decisions and solve problems should be monitored.

Main Constraints to Performance Monitoring

Supervisors expressed some constraints to performance monitoring, including:

Lack of time: The observation is seen as too time consuming, because most supervisors do not spend more than two hours at a site. A user-friendly, rapid assessment method may be necessary.

There is no case: When supervisors arrive, there is no case present that corresponds to the checklist. This surprised the evaluation team: The only situation described in the checklists is the care for the sick child, which is about 50 percent of consultations.

They don't need to observe directly: Supervisors believe they can identify poor performance without observation. As one said, "It does not take too much to recognize poor performance."

The evaluation team believes that the real reasons may be different and that supervisors were not willing to observe the delivery of care. The team hypothesizes that supervisors: (a) do not feel competent in the technical service they would observe, because they are not clinicians, (b) are uncomfortable observing a peer, (c) are aware of the performance gap but do not know how to

address it, or (d) think that staff is competent and poor quality is caused only by a lack of resources that they cannot provide. More qualitative research would answer some of these questions and is called for in the recommendations.

The Costs of Performance Monitoring

Regional variations of supervision costs are enormous. All regional directorates and DHOs could provide estimates of the costs of carrying out performance audits as well as supervision tours (see Table 4-6). The managers' ability to answer immediately all questions regarding the costs was impressive, probably a result of the emphasis put on financial accountability and budgeting by the health sector reform.

Variations in the costs of supervision visits relate to the distances to health centers. Unit costs per HC range from 14,210 K to 182,000 K. The main cost elements of both performance audits and supervision visits are the transportation (fuel) and staff allowances, which depend on the number of days and therefore time spent at each HC.

Table 4-6
Costs of Performance Monitoring for Regions and Districts

	Performance Audits: Cost per Audit	Supervision: Cost of One Visit of All Health Centers
North Western Regional Directorate	14,000,000 K (US\$ 7,000)	
Kalulushi DHO (7 health centers)		700,000 K (US\$ 350)
Lufwanyama DHO (13 health centers)		850,000 K (US\$ 425)
Kitwe DHO (19 health centers)		270,000 K (US\$ 135)
North Central Regional Directorate	12,000,000 K (US\$ 6,000)	
Kabwe DHO (13 health centers)		400,000 K (US\$ 200)
Monze DHO (14 health centers)		750,000 K (US\$375)
Lusaka DHO (22 health centers)		4,000,000 K (US\$2,000)

Main Recommendations Regarding the Assessment of Quality Performance

The assessment of quality performance should include the measurement of health workers' compliance with process standards through direct observation of the delivery of care and not be focused only on input and outcome standards. Performance audits and supervision visits represent good opportunities to observe clinical performance and provide on-the-job training.

A specific strategy should be defined to explore whether poor performance is caused by a competency problem or something else. Clinical competency should be tested regularly to identify training needs. Other performance deficiencies might better be addressed through problem solving.

A formal recognition and reward system based on quality performance should be established to create incentives to improve quality. The kind of reward that would be both effective and acceptable to district health boards should be identified.

B. Evaluation of Problem-Solving Teams

A problem-solving team is two or more people meeting to identify and solve a quality problem by working through a series of steps (the problem-solving cycle) and using simple QA methods. The evaluation team investigated 25 such teams in HCs in eight districts (See Table 4-7). The data-gathering methods were:

Table 4-7
Number of Teams Formed in Districts Visited and Number of Problem-Solving Cycles Completed

Site/Region/ District [Number of Health Centers] (Population)	Health Center/ Number of Staff	Team Started	Finished First Cycle	Started Second Cycle	Finished More Than 3 Cycles
Site 1/ Kitwe [19] (Urban: 460,000)	Chimwemwe/50	Yes	Yes	No	
	Ndeke/42	Yes	Yes	No	
	City Square	Yes	Yes	No	
Lufwanyama [13] (Rural: 61,000)	Chatli/5	Team formed for training but stopped			
Kalulushi [14: 7 public; 7 private]	Government clinic/26	Yes	Yes		
	Chambishi	Yes	No		
	Chimbuluma	Yes	No		
Mphongwe (Rural)	St. Theresa hospital/ 46 (not considered in our analysis)	Yes	No		
Site 2/Kabwe [13] (Urban: 214,000)	Nakoli/15	Yes	Yes	Yes	Yes
	Mahatma Gandhi	Yes	Yes	Yes	
	Makululu/11	Yes	No		No
	Bwacha	Yes	Yes	No	
Kapiri [18] (Urban: 228,000)	Center 1	Yes	Yes		
	Center 2	Yes	Yes		
	Center 3	Yes	Yes		
Chibombo [23: 21 public; 2 private] (Rural: 211,000)	Chisamba/9	Yes	Yes	No	
	Chibombo/9	Yes	Yes	No	
	Chipembi/14	Yes	Yes	No	
	Kayosha/5	Yes	Yes	No	
Site 3/Lusaka [22 public] (Urban: 1 million)	Kalingalinga/45	Yes	No	Yes	No
	Chawama/97	Yes	No		Yes
	Kamwala	Yes	Yes	Yes	Yes
	George/77	Yes	Yes	Yes	Yes
	Civic Center/21	Yes	No	Yes	
Site 4/Monze [14 public; 1 mission] (Rural: 206,000)	Rusangu/5	Yes	No		
	Manungu/9	Yes	No		
TOTAL	127 public health centers in the districts visited	N=25 (20% of 127)	N=16 (13% of 127)	N=6 (5% of 127)	N=3 (2% of 127)

- A semistructured questionnaire to guide interviews with team members, coaches, and others (Appendix D), including methods for evaluating how a team used quality methods and for scoring their difficulties and calculating each team’s “difficulty index”
- Predictive testing of conditions for successful teams, summarized in a “risk of team failure index” with a scoring method
- Analyses of team storybooks and other documents, such as the CBoH “link reports”

Number of Quality Problem-Solving Teams

Of the HCs visited, 27 percent have a functional quality improvement team. In addition, there were reports that out of 127 HCs in the eight districts visited, 34 teams (27 percent) were formed between 1996 and 1998. Among the 34 teams, 8 (23 percent) had stopped meeting before the evaluation.

Among the 26 active teams, eight (35 percent) did not finish their first problem-solving cycle; most were coach training sites and stopped after the coach’s training. Three teams had completed more than two cycles.

The team is not sure that its findings can be generalized, but if these figures represent all of Zambia, there may have been 150 problem-solving teams between 1996 and 1998. A February 1998 quarterly link meeting report (Central Board of Health 1998c) shows a total of 225 teams, but comparing the eight districts visited with findings from these districts indicates that about 40 percent of teams in the report were actually using team problem solving. Using both the link reports and the team’s evidence, the total was probably between 70 and 100 in late 1997.

Why Teams Do Not Form

The team identified five predictive factors for team formation. The main reason for not forming a team after training appears to be lack of access to coaching support. The evaluation team believes that, in the districts visited, about 60 people had received training in team problem solving, ranging from one- or two-day training by a coach at a health center to the full 14-day coach training. Many still lack the motivation and confidence to form a team or the skills to carry out the steps properly.

The team found that centers with at least 10 staff were most successful in forming and continuing. They found only one team in a health center with five or fewer staff, and this team was not sustained or sustainable. It had been a coach training site.

Of the 127 health centers visited, those with a team had: (a) 10 or more staff (unless it was a training site), (b) a coach on the team or visiting at least once a month and for every meeting of the first problem cycle, (c) an officer in charge trained and on the team or actively supporting its work, (d) more than three people on the team, (e) at least five days’ training represented on the team (e.g., one person with five days’ training or five with one day’s training), and (f) reasonable morale and a culture of professionalism. The team urges that research determine whether these factors consistently predict team formation.

Successfully Completing a Problem-Solving Cycle

The team identified additional factors necessary for teams to successfully complete a problem cycle, including: (a) retention at the health center of at least 50 percent of team members, (b) meetings at least monthly and no gaps over two months, and the team had: (c) chosen a problem that was not broad or complex, (d) precisely defined a problem statement, and (e) spent over four months on one step and followed the steps of the cycle.

To finish a second cycle, it appears that all the above factors had to exist and the team had to have achieved perceptible or measurable results.

For a team to follow the cycle steps and use the methods correctly, all these conditions would have to exist and the everyday workload of team members could not have increased considerably for over two months.

The predictive value of these factors for success in completing the problem-solving cycle remains to be tested through research. If these findings are valid for other areas and while resources are scarce, it is questionable whether teams should be formed where these conditions are absent, as the risk of failure appears to be high. As part of its process the team constructed a “risk of failure index” (see Appendix D). The team believes these factors interrelate but was unable to investigate

Much of the work of quality problem-solving teams stagnated after people started going for interviews as part of de-linkage. People were not sure where they would be employed and did not see the point of gathering data and working on the problems.

(Coach)

how. (For example, Would more training compensate for less coach support?) The team was also unable to study whether teams are successful where there is already relatively higher quality and staff competence.

Types and Relevance of the Problems Identified by the Teams

Most quality improvement teams worked on meaningful problems. The evaluation team assessed the list of possible problems and how they were prioritized by using teams' documentation or asking coaches and team members how they chose problems. For districts not visited, they assessed 49 reports in the storybooks. There was also some documentation of the teams' work in trip reports by CHS staff. Where teams had documentation (e.g., the standard QA notebook or written notes from a team), it was easier to assess the relevance of the problem. About 10 of the 25 teams did not have documentation, making it difficult to determine how well teams followed the steps.

The relevance and importance of the chosen problems for patients, community, and staff at the centers varied among the teams. About 50 percent chose physical and facility problems, and about 40 percent chose clinical problems.

The QA training heavily influenced the choice of the problems, which included:

- Long waiting times (Chimwemwe, Ndeke, Government Clinic, Chambishi, and Chawama)
- Careless disposal of sharps (City Square)
- Rise in number of malaria cases (problem cycle 1), Scabies (cycle 2), low patient-fee collection (cycle 3), congestion at tea time (cycle 4), staff reporting late (cycle 5), low immunization rates (cycle 6) (Nakoli)
- Long waiting times due to staff arriving late for work (Mahatma Gandhi)
- Long waiting times and congestion at the outpatient and maternal and child health departments (Makululu)
- Low postnatal attendance (Bwacha)
- Rise in number of malaria cases (Centre 1)
- Rise in number of malnutrition cases (Centre 2)
- Reducing pneumonia rates (Centre 3)
- Need for a shelter for mothers (Chisamba)
- Need to extend the rural health center (Chibombo)

- Low attendance of family planning clients (Chipembi)
- No regular fresh water (Kayosha)
- Late antenatal booking (Kalingalinga)
- Nurses not competent in treating TB cases (cycle 1), increase in malaria and diarrhea (cycle 2), shortage of casual workers (cycle 3), lack of discipline and absenteeism (cycle 4) (Kamwala)
- Stolen manhole covers and blocked sewer line and ceased soakerway (George)
- Antenatal booking late by more than 12 weeks (Civic Center)
- No staff housing near the center, low immunization coverage (Rusangu)
- Inadequate maintenance (cycle 1), rise in malnutrition cases (cycle 2), long waits (cycle 3), inadequate maintenance of water supply (cycle 4), patient records missing (cycle 5), (Manungu: Team may have addressed all these at once and become stuck)

Reducing waiting times was chosen often, in part because it was used as an example in training. The clinical problems (e.g., malaria, late antenatal booking) were relevant and important for the health of patients and/or the community and were usually chosen because staff noticed a rise in cases rather than because they studied statistical trends for the center. About 5 percent of the problems were identified by soliciting the views of the users or neighborhood.

Following the Steps of the Problem-Solving Cycle and Choosing and Using Methods

Most teams correctly used the QA tools and methods, such as problem prioritizing and cause and effect diagrams. The use of methods for listing data sources (data matrix) and for gathering and interpreting data could have been better, and about 40 percent of teams did not gather data. The most serious divergences were not following the steps of the cycle when it was necessary to do so and failing to use the conclusions of a previous step as a basis for the next one. Some teams did not use data interpretation to list solutions, but instead moved on to brainstorming a solution.

Data collection and following all steps pose the main challenges to teams. Nine teams did not finish their first cycle. Some did not carry out the steps properly or in sequence; others became stuck and did not have access to a coach. Teams were better at following the steps

**Case Study Number 4:
The Nakoli Health Center (Kabwe District)
Problem Solving**

Nakoli health center is a semi-urban clinic with a staff of 15, all women. It seemed cheerful and well organized to the evaluation team. In June 1996, the sister in charge took part in a local five-day training run by the regional link. The training was on the quality problem-solving cycle and teamwork, with one day on standard setting. The sister used notes from the course to teach all HC staff for two hours for 16 weeks.

From the start she decided that all the staff would take the training, and she decided that the training meetings would become team problem-solving meetings. They started on the first problem in late June 1996, and by September 1998 had worked on five problems and were starting on a sixth. They worked on the first problem—a rise in malaria cases—for 15 months. The QA notebook documentation was not available to the evaluation team for any of the problems because they had only one copy, but the problems and steps were documented in exercise books. When they first met, they identified five problems: a rise in the incidence of malaria (which they scored 25), upper respiratory tract infection (24), diarrhea (23), eye infections (21), and skin diseases (17). They used the criteria for scoring each problem correctly and decided to work on the problem with the highest score: malaria. They stated the problem as, “Nakoli health center recorded increases in the number of malaria cases, with the lowest figure in 1995 being 163, to 242 in 1996. A rise in new cases has been noticed since 1995 and has resulted in increasing morbidity. The improvement should result in morbidity rates reduced to at least 100 new cases.” The statement used measures, had a target, and chose to focus on treatment rather than prevention because the team had more influence over treatment than prevention.

In common with many other teams, Nakoli did not change the membership of the team in step 3, “Identifying who needs to work on the problem.” The complex step 4, “Analyzing and studying the problem to identify major causes,” consumed time and was where the team encountered problems. They used the bubble chart to show possible causes of the problem. They decided to focus on why people appeared to be coming back to the clinic with symptoms after being seen only a few days before. They did a high-level flow chart of the treatment process and then identified data they needed to find the main causes of “malaria

morbidity.” They interviewed 43 patients who came back within five days with the same symptoms, and the data showed that most had not completed their full course of chloroquine. They did not question the data further to understand why, but went straight to step 5, “Developing and choosing solutions.” Like many other teams, they used brainstorming to list solutions and then choose among them, and chose to ask patients to come back every day for a supervised drug treatment. They set up a monitoring system and set standards for return treatments.

The team had established a treatment supervision system that monitored the number of people supervised and the number with symptoms. The data show that 80 percent in June and 90 percent in July completed treatment, indicating that the intervention did have some effect, and that 13 percent in June and 7 percent in July returned within five days with same complaint.

While looking at solutions to the treatment problem, they decided to broaden the work to include prevention and went straight to brainstorming ways to reduce the incidence of malaria cases. They worked with the community to find stagnant pools and increase the use of impregnated bed nets. The statistical data showed that the six-month mean cases for January to June 1996 were 496 and for January to June 1997, after the preventative efforts, the case rate was 370. However, at the time of the evaluation, they had discontinued monitoring the malaria rates, and the evaluation team calculated that the mean case rates for January to June 1998 was 726, a significant rise.

This team was unusual in continuing to work on other problems: scabies (four months), low fee collection (one month to solve), congestion at tea time (two weeks without using the problem-solving cycle), staff reporting late (one week without using the problem-solving cycle), and low immunization rates. They were also unusual in deciding appropriately when to use the problem-solving cycle and when not to. These problems were congestion at clinic at 11 am because all staff were going for tea at the same time (solution: some staff going for a 10:30 break and some for an 11:00 break), and reporting late for work (solution: reporting-in book). The evaluation team asked why they had not stopped the quality work at the time of “de-linkage,” like many other teams. They admitted that some staff was unmotivated, but they had decided to start another problem-cycle to “show what women can do.”

where the officer in charge had had coach training or where the team had been a coach's training site. The following assessment covers both teams that had difficulties and those that completed the cycle.

The evaluation team used the "quality team evaluation method," which is part of the semistructured interview guide (see Appendix D). It scored how well each team both followed each step and used the method within it. The scores, presented below, are an average for all of the 25 centers studied. The team used criteria to give a score of between 0 and 5 for each item (0 = did not do it, 5 = could not imagine how to do it better). Where possible, the team negotiated a score with the problem-solving team members who were interviewed by together studying the documentation and asking questions. Although the teams were trained to follow the five-step cycle, six are described here. To simplify the model, step 5 of the original model is divided into two steps, identified below as steps 5 and 6.

After discussing the criteria for scoring, the evaluation team found that problem-solving team members tended to score their work slightly lower than the evaluators did and did not make the slight allowances the evaluators did for such things as the problem being the first or little training or coach support. Several team members and coaches asked for copies of the evaluation team's assessment to review their own or another team's work. They confirmed the evaluation team's impression that no evaluation was done of the teams' work to learn how to improve and that there was no system for doing this.

**Step 1: Identifying the Problem—
Average Score 3/Range 3–5**

- 1) **Listing—Average score of 3:** Most teams scored fairly well on this step because they had considered a reasonable number of problems: between four and eight. However, the evaluators could find only four teams that had consciously included problems that were of concern to NHCs, and only two had conducted a user survey.
- 2) **Prioritizing matrix and vote using criteria—Average score of 4:** Ninety percent used the matrix to prioritize the problems they had identified and used the prioritizing criteria reasonably well to score each problem. However, about 30 percent chose problems that were not the highest priority on their list. It might be that the team rightly chose a problem perceived as solvable, rather than one with a higher score but perceived as too difficult, i.e., the prioritizing criteria they used may have been wrong. The evaluators did not verify this. In some cases the

team chose a lower-priority problem because it was more important to members.

Four teams inappropriately chose to work on more than one problem at once. One team appeared to have worked on five at once, with five problem statements listed together in the storybook as well as five flow charts. The evaluators were not able to verify this. Two teams became stuck in later steps and started on their second problem before finishing the first.

**Step 2: Problem Statement—
Average score of 2/Range 0–4**

- 3) **Method for writing a precise statement with measures and a specific target:** Most of the problem statements followed the guidelines for the problem statement reasonably well, although about 50 percent did not state measures or a target in numerical terms. This made it difficult for the team to evaluate the impact of any solution they may have implemented.

Step 3: Identifying Who Needs to Work on the Problem—Average score of 2/Range 0–3

- 4) **Method for selecting the right people for team or for involving them in other ways to analyze, collect data, and solve the problem:** The evaluation team found only two teams that had changed the membership of the team after choosing their problem: Kalingalinga and Chibombo. Most, however, had identified others outside the team who should be involved and had involved them in data gathering or solution identification and implementation.

Step 4: Analyzing and Studying the Problem to Identify Major Causes—Average Score 1/Range 0–3

This step is the most complex and was least well followed. It includes the use of the following methods for most problems:

- 5) **Bubble chart or other cause-effect diagram**
- 6) **Listing of possible causes**
- 7) **Creation of data matrix with data gathering questions, sources, and methods**
- 8) **Data gathered and recorded (quantitative or qualitative)**
- 9) **Validity and reliability of data for answering the problem (e.g., sample for interviews, trending quantitative data, or validity of statistics)**

10) Data analysis and interpretation

11) Use of data to determine root cause

Most teams did not follow the sequence or use the methods correctly, resulting in the low score. In general the cause-and-effect listing was done well, but most teams either did not gather data or did not correctly decide which data to gather to be certain about the real cause. When they did correctly decide which data to gather, they did not use it to find the real root cause.

Step 5: Developing and Choosing Solution— Average score of 2/Range 0–3

- 12) *List of possible solutions:* Most teams listed and assessed solutions, but not systematically.
- 13) *Link between solutions and the use of data:* A low score for this step resulted because nearly all teams failed to gather data that they might have used to decide the real root cause.
- 14) *Choice of solution: What was the method used and how good was the choice?* Most teams used objective criteria to choose between possible solutions and did follow the methods taught in training.

Step 6: Implementation and Evaluation of Quality Improvement Work—Average score of 2/Range 0–3

- 15) *How well was the solution implemented (plan and persistence)?* Most teams did not plan the implementation of a solution in detail, and the evaluation team saw only five written records of the Plan-Develop-Check-Act cycle used for this purpose.
- 16) *Were data gathered again to check the effects of the solution?* Few teams carried out before-and-after intervention measures, and for those that did, the validity of the comparisons was questionable.
- 17) *What difference did the solution make and to whom (from data or judgement)?* Without data in most cases, the evaluation team had to judge the results and ask team members and others their judgements. Many did not evaluate their work in any systematic way.
- 18) *How well did the team follow up six to 12 months later or keep monitoring?* The evaluation team found no problem-solving team that performed follow-up, although a few did set standards and quality indicators and monitor these routinely.

Difficulties the Teams Met in Following the Steps and Using the Methods

Teams experienced most difficulties collecting and using data to identify root causes. Teams of four or more, in centers with over 10 staff, with an able coach on the team or regularly available, and with reference and training materials, did not encounter serious problems. This was especially so if they were visited by link facilitators, even if they were affected by morale problems. Other teams experienced the most difficulties in getting access to a coach; getting quality reference materials and keeping them at the center and available to all; and in using certain methods, such as deciding which data to gather and then gathering reliable and valid data. Many teams had problems implementing solutions, usually due to lack of resources (e.g., no drugs). In some cases this difficulty was because the problem selection method was not used properly to identify a problem solvable by the team. Often the teams recognized they were having difficulties and did ask for a coach visit; a significant number had stopped working and were “waiting for the coach to visit.”

If a team is working on reducing malaria morbidity and collecting data, it is de-motivating when drugs run out just as they are beginning to see a downward trend. Drugs are centrally supplied, but they (drug stock suppliers) do not have a quality program.

(Coach)

The evaluation team asked team members and coaches about any difficulties they experienced using the steps and methods. To do this, they used the same list and scoring as the one described above (Appendix D). Each item was given a “difficulty score” of 0 to 5 for the level of difficulty experienced and a score of 10 for the team reporting that the step or method was so difficult that they were not able to do it. The evaluation team termed the total score the team’s “difficulty index.”

Of the teams that started using the problem-solving cycle, about half had followed each step in the correct

sequence. Of those that did not follow the steps, most missed data gathering, often because of difficulties creating the data matrix and then gathering data (discussed below).

One frequent “linking failure” was teams’ not using the possible causes list (item 6, step 4) to decide which data to collect (item 7, step 4). The most common and serious “linking failure” was failing to use the data interpretation (end of step 4) to decide the list of solutions (step 5). For the few teams that reached this stage, most tended to brainstorm solutions without considering the data they had collected. Many seem to have forgotten or never recognized that the purpose of data collection is to confirm the “real root causes.” This may be because step 5 is long and complex. The team believes that consideration should be given to dividing this step into cause analysis, and data gathering and analysis.

Some teams’ difficulties are explained by lack of coach support. Nearly all of these difficulties could be overcome by frequent visits by capable and trained coaches. The team estimates that 40 percent of the centers with teams did not have a coach on the team or frequent visits from one, and this is the single most important factor causing teams to get stuck or waste time.

Team Performance in Gathering and Using Data

Some teams tried to collect and use data; about 60 percent actually performed data gathering. Of these, some used qualitative data from interviews (e.g., of patients). Most used quantitative data from routine statistics or from their own special methods (e.g., for waiting times, some used a note attached to the medical record that the patient carried in the “journey” through the HC. The staff noted departure and arrival times at stops along the journey).

About 50 percent of the teams who collected data encountered problems, making it difficult to use the data to select a solution. Most did not have reference material about how to gather data, and many links and some coaches only had the Franco et al. manual (Franco et al. 1997), which does not describe the data matrix with data questions that some teams had used.

Most teams that tried collecting data had difficulties completing the data matrix, especially in deciding which data gathering method or source to use. There were problems in using routine statistics, such as unavailability of a full time set or because population denominators for indicators were from census statistics

that underestimated the population size. In the latter cases, the team’s work was often delayed by having to organize head counts to get more reliable data. One link reported that the census data for the district showed 215,000, but the head count found 365,500.

Problems in data collection and use were the most serious deficiencies observed. In most cases, not collecting data made it difficult for teams to identify real root causes. This made it difficult for them and the team to objectively evaluate the results of their solution interventions.

Mastering the use of data and QA tools would improve with appropriate coach support. These difficulties and our assessment of the use of the methods show that there is room for improving the competence of team members to use and choose the methods. Competence levels should be improved in following and linking the steps of the cycle. This involves fully understanding why the steps should be followed and being able to decide when to diverge from them. Competence in data gathering and analysis should also be improved.

There are different ways to raise competence, but the most effective in Zambia appeared to be “learning by doing” when coaches visited to help a team work through the cycle.

Results and Progress of the Teams According to the Self-Monitoring

The work of some teams was documented through the report of the link facilitators to the CBoH and put together in tables such as those in Appendix E. Those that did not document their results were assessed in terms of their ability to: (a) define a solution, (b) fully implement a solution, (c) show evidence of an impact on the problem (e.g., before-and-after measures), or (d) report that they thought they had solved the problem.

Five teams achieved measurable changes in quality, and about eight teams reported that they had achieved significant quality improvements but did not have data to show it. About 60 percent of the problem-solving cycles did not produce results that were perceivable within six months or that could be attributed solely to the team’s intervention. In some cases the problems chosen could be only partially solved by the team.

Because of the lack of documentation, the evaluation team could not find many results from problem-solving efforts, but this does not mean that the teams’ work was

ineffective or without benefit. It was also difficult to determine whether results were due to the teams' efforts or to other factors.

The side benefits of teamwork went beyond solving a problem. There were many indirect benefits, where people used their quality skills for other purposes. An example was the use of problem identification by health centers and districts to set their action plans and budgets. Other benefits are below in the summary of the strengths of the teams and their work.

Duration of the Problem-Solving Cycle and How It Could Be Shortened

It took the teams a long time to finish the first cycle. The average duration of the first cycle for teams that met monthly was from less than one month to 12 months. This dropped to seven months for the second and subsequent cycles. Only six teams completed more than one cycle, and the duration depended on the type of problem, so these figures should not be generalized.

The cycle time might be reduced through refining the problem-solving methodology. Feasible measures to reduce the cycle time include: teams gaining skills in deciding which problems are solvable and focusing on them, regular coach visits or access to a coach's advice, more training on how the steps of the cycle link to each other and when to use simple methods, training on how to use existing protocols and standards as a solution, and training and support on how to use already collected data (e.g., HMIS) rather than carrying out special data collection.

The cost-benefit of team-based problem solving should be studied. The evaluation team did not make a systematic cost-benefit assessment of the teams' work. Such an assessment would determine how best to use scarce resources. The evaluation team estimates that an average team, meeting monthly for two hours with eight staff on the team, "costs" 192 hours or four person-weeks. The findings show that benefits of this time, in terms of changes to quality, are not startling and often not provable, although there are a few exceptions. However, the indirect benefits are significant and are noted below under "strengths." If both indirect and direct benefits are counted as the "return on investment" of four person weeks, then the cost-benefit could be judged as "reasonable" and has the potential to be much better, especially if teams were to focus on waste problems.

Cost-benefit, however, is judged in relation to alternative uses of time. An important question is, What is the

cost-benefit of problem-solving teams compared to the cost-benefit of other quality methods or other uses of time (e.g., developing diagnosis and treatment skills)? Further research would clarify when the problem-solving method is best.

Strengths and Weaknesses of the Problem-Solving Teams

Side benefits to the problem-solving efforts are numerous. Although evidence of measured improvement to quality was scarce, several direct and indirect benefits emerged from the teams and their work, including:

- Some teams' achieved measurable improvements to community health (e.g., lower malaria incidence), clinical care process (e.g., increased immunization), and patient quality (e.g., reducing waiting time from two hours to 50 minutes)
- Reported improvements to facility quality and patient or professional quality
- The problem-solving model being used as a simple and effective way to use quality methods and to combine standards setting and compliance with process improvement
- Team building in centers where cross-disciplinary cooperation had been weak
- In the larger centers many staff reporting interest in the team's work and very cooperative when asked to contribute, spreading quality ideas in everyday work
- Increasing the general competence and confidence of staff and enabling them to use a systematic approach to solving problems, which they applied in many other situations
- Providing an outlet for frustrated and unrecognized staff potential (many able staff were attracted to working on the teams or to coaching, providing an opportunity for professional development not otherwise available to them)
- Capacity building and preparation for management positions

Team experience and the methods are an excellent practical training for management

Main Constraints to Teamwork

A consideration of weaknesses also highlights some of the constraints to the teams' work. These included:

- Loss of staff from the teams and coaches due to promotion and transfers, and no system for ensuring sustainability and development of teams
- Many not following the methods and steps when necessary, usually because of inadequate training and/or lack of coach support
- Many not being able to define measures in the problem statement and to use data to determine root causes, as well as not following up after the solution intervention to check the results and “hold the gains”
- The length of time to complete a cycle, even after the first “training cycle” (average of nine months), especially for teams meeting monthly (most teams) rather than weekly
- Not developing the skills to decide which problems need team problem solving and the full cycle and which do not (Example: Kitwe took a year to identify and implement a solution to collect disposed sharps)
- The high failure rate of teams, in terms of not forming after a member or officer in charge was trained (about 40 percent of officers in charge from 127 centers were trained), not finishing the first cycle (9 [36 percent] that started did not finish), and not continuing on further problems (19 [75 percent] did not).

C. Evaluation of the QA Support Systems

In the context of the Zambian health sector reforms, QA activities are being implemented within an integrated framework for service delivery. As a result, training, supervision, monitoring, and other systems that support the delivery of essential health services have a QA component. For example, staff at various levels of the health system have been trained with varying levels of intensity in the methods and principles of QA as part of a broader effort to build capacity at the local level for ensuring quality of care. Reporting systems are in place to measure performance and facilitate more efficient and complete documentation of QA activities. Existing forms of technical supervision provide a way to identify quality of care problems and monitor the effects of QA activities. Finally, the network of trained QA coaches and link facilitators supports all these systems by providing training and technical assistance at the district and HC levels. This section reviews QA training, the QA coaches/link facilitators network, documentation and reporting of QA activities, and supervision of quality assurance activities.

1. Training in Quality Assurance

The formal agreement to introduce quality assurance led to the formation of the QA Unit within the MOH and the start of QA training activities. Training was given first to key provincial level staff in all provinces, then at district and facility levels in three pilot districts. Initial training in the target districts focused on the setting and monitoring of standards and was later expanded to include problem solving. QA training varied by district, but generally consisted of sensitization workshops (one day to introduce the concepts of quality assurance), a week-long training in DySSSy, a five-day training in the development of monitoring indicators, and 14 days in using QA tools and techniques.

QA concepts and methods were introduced in some form throughout all provinces before the evaluation, and only North Western Province had not received the problem solving training.

QA Training Capacity and Experience at Various Levels of the System

The QAP has trained many staff in QA, but they are unevenly distributed.

At the central level, the Directorate of Monitoring and Evaluation is responsible for ensuring that all levels of healthcare are sensitized to the concept of QA. Their role is that of “facilitators capacitating health providers to self-assess, to measure their performance and compliance to agreed standards, and to respond to clients/users needs.” (Limbambala and Tembo 1996) This unit provides training and technical oversight in QA to the DHMTs and their health centers.

At the regional level, no special training has been given to staff since the formation of the regional directorates (one staff member at North Central Region had received some QA training while at a provincial level post). The CBoH’s intent had been to provide training to the regional office, but the ban on workshops, delays in appointing regional office staff, and the introduction of hospital accreditation activities may have combined to preclude such training.

Though training in general does appear to be a function of the regional office, the position of training specialist was unfilled. The interest of regional staff is such, however, that QA would reportedly be included in planning for 1999 activities.

At the district level, staff have received varying degrees of training. Though few directors, if any, received any formal QA training, several DHMT staff have been

Table 4–8
Examples of DHMT Training in Quality Assurance

District	QA Coach/ Link DHMT	Position/Title
Kitwe	Link Coach	HC representative; Ndeke clinic Manager, Planning and Development
Kabwe	Link	Acting Manager, Planning and Development Other DHMT staff sensitized
Kapiri Mposhi	Coach	Acting Manager, Planning and Development
Lufanyama	Coach	Health Information Officer
Lusaka	Link	Health Nurse, MCH coordinator
Monze		Manager, Planning and Development Health Information Officer Other DHMT staff sensitized
Choma	Link	Health Information Officer

trained as QA coaches or facilitators or otherwise participated in some form of QA training. See Table 4–8 for examples.

In one instance (Kitwe), administrative staff had been given specific training in standards setting in order to improve record-keeping practices. Lusaka staff reported receiving some introduction to QA (or at least similar concepts) as a part of general district-level, capacity-building training. Capacity-building sessions were conducted to create effective leadership, accountability (including financial management as well as QA systems), and community partnership within the newly decentralized districts (Limbambala and Tembo Undated). When asked about the types of QA training received, only the Lusaka DHMT said that QA was introduced during the capacity-building training.

There is no formal system for identifying QA training needs. At the district office, responsibility for coordination of training activities (including QA) varied according to the composition of the DHMT, though it was usually said to be the responsibility of the Manager for Planning and Development. At one district (Kalulushi), selection and prioritization of training was said to be the responsibility of an in-service coordinator. In other districts, requests for training were approved on an ad hoc basis. Though each district is supposed to form a staff development committee to identify training needs and conduct needs assessment, reportedly few have been formed. It remains unclear how training needs in general would be identified, though QA would presumably be given some priority.

The identification of training needs is further complicated by the replacement of previous DHMT staff as a result of de-linkage. Senior staff at this level are recruited on a contractual basis, as opposed to the “permanent and pensionable condition of service” (MOH 1996b) in effect prior to the reforms. This means that newly hired senior DHMT staff need QA orientation.

Concern for quality at the district office is such that QA training activities were budgeted in 1998 action plans, but they were dropped in some districts due to funding problems and/or the suspension of training workshops. Most district teams interviewed hoped to include QA in their 1999 plans.

At the HC level, the extent of QA training varied by district. For example, some Ndeke Clinic staff had received a three-day QA training; all health centers in Kalulushi District had from one to three staff trained in QA; in Kitwe, HCs reportedly had an average of three days of training (some had five days; all the in-charges received sensitization training); in Kabwe District, all in-charges in all health centers had been given a five-day training plus a two-day practicum; in Monze District, all HCs reportedly had staff trained to serve as “QA Committees.” It would seem that no uniform approach to training was adopted at the HC level, but rather facilitators and coaches devised training plans to suit their circumstances.

Training needs at the facility level, including selection of staff for QA training, are reportedly determined through supervision and on-the-job performance. The general consensus among the HC staff interviewed was that more thorough “refresher” training in QA was needed, particularly given the constraints (below).

Main Constraints to the Effective Delivery of QA Training

Funding and link facilitators’ time are the main limiting factors to QA training. HC and district staff and coaches and link facilitators identified the following:

Priorities: Frequent and recurring drug shortages are often seen as the priority problem, undermining all other efforts to provide adequate health services. Coaches/link facilitators have difficulties discussing quality of care issues (and thus the need for a QA approach) when HCs lack such basics.

Funding: Training is always a lower priority when resources are lacking, and districts reported that in the first nine months of 1998, they received less than 50 percent of the amount budgeted.

Time: Most coaches and links are HC in-charges and thus have little time to devote to training other HCs.

Transportation and distance: Lack of adequate transportation prevents coaches and links from training and supervising the HCs under their charge, especially the more remote ones.

Turnover: Losses or changes in staff, in addition to problems created by de-linkage, may require training or retraining of relevant staff in QA, creating additional burden for those who oversee training.

Leadership: Lack of motivation, initiative, and confidence on the part of some coaches and link facilitators

**Case Study Number 5:
Supporting QA Teams: The Work of a Link
Facilitator**

The link facilitator (“link”) has played an integral role in the development and success of the Zambia QAP. To strengthen communications and teamwork between the QA structures at the central, provincial, district, and facility levels, QA coaching participants who demonstrated the best aptitude and enthusiasm were selected to be links. These health staff were expected to develop a strategy for QA in their respective districts that would include the sensitization of district level staff as well as the coaching of problem-solving teams at the health centers. Despite the many difficulties faced as a result of the health sector reforms (i.e., the de-linkage of staff, recurrent drug shortages, and severe funding constraints), several links were undeterred in their efforts to implement QA activities. In Kitwe District, for example, a link not only managed to create and support several QA teams but has infused QA concepts into all aspects of his work as well as that of his many colleagues. He experienced the following training regimen:

Phase I: Five days’ sensitization, including basic QA concepts, indicator development, and standard setting

Phase II: Five days’ standards setting (DySSSy)

Phase III: 11 days’ problem solving and coaching, including practice

As a “best” participant, he was chosen to be a link after the Phase II training and invited back for Phase III problem-solving training. After the initial training, he underwent a series of validation checks where he was observed and evaluated while training staff in other locations. He joined other link facilitators at three different provincial sites (Luapula, Copperbelt, and Eastern Provinces) to train selected individuals from the DHMTs and health centers. In Kitwe, he worked primarily as a Clinical Officer at a health center, but also served as health centers’ representative on the

Kitwe DHMT. He was well regarded within many professional circles and thus well placed to introduce QA into district as well as facility organizational structures. Within Kitwe, he provided QA training to nine clinics, including eight that were reported to have active teams. Some examples of the problems he coached them to address were:

**Table 4-9
Sample Link Facilitator Results**

Location	Topic	Result
Chemwemwe HC	Long waiting time in OPD	Flowchart, patient-flow analysis
Itimpi maternity	Low delivery rates at facility	Redefine problem, confirm causes
Kamfinsa clinic	Low delivery rates at facility	Compare antenatal visits and deliveries

Besides his work with the teams, caring for patients at the clinic, and activities with the DHMT, the link was also working to create other supportive mechanisms to ensure that QA activities (and quality of care, generally) could be effectively monitored. He provided training to IMCI supervisors who were required to monitor (and be monitored by) other IMCI health centers. Staffs were given a three-day basic training in QA and later instructed to check the teams’ storybooks during supervisory visits. Elsewhere, he worked to develop a supervision checklist that could be used by staff charged with monitoring health centers as part of “weekend coverage” visits. Despite the constraints on his time and the economic and other extreme difficulties being faced by the district, the link has made an admirable start with regard to QA. Although it remains to be seen what the ultimate outcome of this work will be, at the very least, the enthusiasm and support for QA are ensured under vigil of the Kitwe link facilitator.

may prevent the start-up of QA activities, despite the confidence-building activities incorporated into the training validation process.

Team Approach in Small Facilities: Lack of a QA training approach appropriate for HCs with too few staff and/or at more remote locations may require rethinking of the existing training content. Currently, the training emphasizes a team-based approach to problem solving, which relies on frequent and supportive visiting by coaches or facilitators.

2. Coaching/Link Facilitation of QA Teams

To strengthen linkages between the regions, districts, and centers, the “best” training participants were chosen to act as link facilitators/coaches. These staff were expected to develop a roll-out strategy for QA in their respective districts, including the training and coaching of problem-solving teams at the health centers.

The Roles of Coaches/Link Facilitators and Constraints to Adequate Coaching

The coaches/links play an important role in the success of the QA teams. Coaching visits to the HCs are meant to provide just-in-time training or technical guidance to the teams and should include a review of the team’s work, correction or rework if needed, and planning for next steps. As reported by the HCs, however, most coaching visits were not regularly planned and held.

In addition, some teams reported never having been visited by a coach after initial training, despite having completed several problem-solving cycles. Other HC teams reported being visited by a link facilitator only once or twice since being trained in 1996; still others reported frequent (quarterly or more) contacts by coaches/facilitators as part of the integrated supervisory DHMT visit. In all these cases, it remained uncertain how often coaching visits coincided with the team meetings and, moreover, how timely the visits were in addressing difficulties encountered by the teams.

Some link facilitators reported that the motivation and ability of the teams to work through the problem-solving process often appeared to be externally driven; i.e., a visit by the coach or facilitator would prompt a team to complete one or more steps in the cycle. In Kitwe District, for example, the link facilitator reported that his teams could not complete the steps involving data collection and monitoring of results without his persistent support and frequent visiting. Similarly, the Kabwe link felt that several of his teams could not work without a coach to motivate them to action.

Coaches and links face many constraints in providing support to teams. Most coaches and link facilitators who were interviewed generally perceived QA to be an important and necessary part of the way work should be done at the HCs, i.e., it offered “a new way of looking at problems” that hadn’t existed before, “a way for health centers to identify and resolve problems themselves,” and it provided a means for “coordinating how problems should be solved.” However, several of the coaches and links could not provide adequate support to the teams. Some felt they had insufficient time for QA activities, particularly as many were managers or held other positions at the DHMT (some equally “busy” DHMT staff could find the time to support their teams). Some coaches were inactive because of a lack of funding or transportation for training and coaching visits.

An October 1997 link facilitators meeting recorded some suggestions for improving the support to QA coaches: (a) regular meetings to improve QA skills, (b) having districts sponsor their coaches, (c) integrating QA meetings with HMIS quarterly meetings at the district level (not all areas have HMIS meetings), (d) integrating QA meetings with managerial skills workshops (not all areas have managerial skills workshops), (e) performing QA activities during supervisory visits, (f) encouraging regions to support QA links in supporting coaches, and (g) including link and coaching activities in routine action plans.

Though local factors, such as staff de-linkage, drug shortages, and funding problems, were commonly seen as obstacles to QA activities, the degree of skills transfer and coaching support seems to depend on: (a) the ability and willingness of district staff to plan for QA, (b) the resources committed to training and coaching, and (c) the motivation of coaches and facilitators.

Preparation for QA Coaches and Link Facilitators

A typical QA training sequence for coaches and link facilitators is: (Phase I) Five days of sensitization: basic QA concepts, indicator development, basic standards setting, (Phase II) Five days of standards setting (DySSSy), and (Phase III) 11 days of problem solving and coaching, including practice.

The “best” participants are chosen to be coaches or link facilitators after Phase II training and are invited back for Phase III problem-solving training. After the initial training, participants undergo “validation” checks where facilitators train staff in other districts or HCs or coaches train two other HCs. CBoH QA staff evaluate and re-evaluate participants to gauge their willingness

and ability to serve at the next level. Links and coaches reported that this somewhat rigorous validation was effective in ensuring that adequate QA technical skills were acquired.

In addition to technical QA skills, the modular training package for QA coaching (Quality Assurance Project 1996) includes such topics as the role of a QA coach, team building and teamwork, communicating in teams, organizing meetings, team decision making, and conflict management.

Supervision of Coaches/Links

Supervision of the link facilitators by the CBoH is reportedly done through: (a) training activities, (b) visits to the district with or without another link, (c) feedback after observations, and (d) quarterly meetings for link facilitators.

The manner and frequency of supervising coaches differs from place to place. Some links are quite active in contacting coaches, though this can be difficult for those who have more than one district (e.g., Choma). Other ways to monitor coaches are through meetings of coaches at the district level (e.g., Kabwe) and through meetings at the province level of district coaches.

Maintaining QA Skills and Knowledge

Apart from the supervision described above, coaching skills are maintained through learning by doing, validation courses in other districts, quarterly meetings of link facilitators, and random checks on the work of coaches and teams by central staff. In Kabwe, the link facilitator gives coaches a test before their quarterly meeting to detect problems that should be discussed.

Region and District Knowledge on the Work of the QA Coaches/Links and HC Teams

When the link is not part of the DHMT, the districts know little about QA activities. At the regional office, QA was seen to include management activities that help ensure quality health services at lower levels of the system, i.e., supportive supervision, training or capacity building, information exchange through HMIS or other reporting systems, and other ways of maintaining standards of care (including the development/dissemination of new standards). Though staff expressed concern for such quality issues and appeared to have some knowledge of the existence of QA teams, they were generally not well informed about the work of the coaches and facilitators and wished to improve communications regarding these activities.

District staff are better informed about QA activities. This is likely due to the fact that many more district-level staff have had exposure to some form of training (e.g., QA training workshops or district capacity-building sessions) than regional level staff. Moreover, some DHMT staff were trained to serve as coaches or link facilitators to the HC teams.

3. Reporting/Feedback Mechanisms for QA Activities

System for Reporting QA Activities

Information on QA activities is unevenly shared among levels of the health system. At the regional level, specific knowledge regarding the work of the teams, coaches, and facilitators is limited. Reports of QA activities are not submitted to the regional office, and existing reporting forms (e.g., the performance audit and district progress reports) do not capture information about the work of the QA teams.

At the district level, a summary report of HC activities is completed by the link facilitator and forwarded to the QA staff at the CBoH. The reports list the active teams and describe the status and results of their efforts. Quarterly meetings of all link facilitators are held to disseminate results and share experiences regarding their teamwork. The CBoH uses the results of these meetings to identify opportunities for improvement and track team activity.

At the HC level, the recommended storybook format is intended to facilitate more efficient and complete documentation of the team activities. Page headings correspond with major steps in the cycle. Teams can thus describe how their problem(s) were identified, record problem statements, describe the use of tools and data gathering instruments, and present solutions and results. A review of available storybooks found many incomplete or irregularly updated. Moreover, the supply of storybooks was inadequate.

In addition, problems/difficulties encountered while implementing the QA steps are not recorded. Such findings would provide a useful history of the team's experience as well as indicate needed improvements to the problem-solving process.

At present, HCs do not formally exchange information about the work of their teams, though opportunities for doing so exist in the form of monthly meetings of in-charges and among HCs that share a coach.

Communities learn of quality improvements at their HCs through participation in NHCs. In one instance (City Center), NHC members were actively involved in a problem solving. Posters or storyboards are sometimes displayed at the HC. Such “visibles” communicate the team’s commitment to quality, call attention to the need for similar improvements in other departments, and strengthen advocacy for QA throughout the HC.

4. Supervision of QA Activities

As described by 1999 action plan guidelines (CBoH 1998a), “supportive supervision is part of a larger system of quality assurance and improvement,” which is a departure from the more traditional, authoritative forms of supervision and calls for a more empowering approach to improving performance. The frequency and quality of supervision within and between administrative levels effect the performance of staff and program objectives. Much work has already been done to improve supervision, such as formal supervision occurring as a team activity with the goal of assessing performance and ensuring collective responsibility for resolving problems. Guidelines for supportive supervisory visits have been integrated into the new HMIS (CBoH 1998b), and staff recognize that supervision can be strengthened, not just by increasing the number of supervisory contacts, but also by improving the focus and quality of the visits.

Supervision as a mechanism for monitoring compliance with standards is in Chapter III, Section A.3. In this section, supervision is further developed as a way to initiate and evaluate quality improvement activities at various levels of the health system, particularly at the HC level.

Types of Supervision Provided by the Regional and District Offices and How They Support QA at Other Levels

Opportunities for supervision of QA activities are numerous. At the regional level the main type of formal supervision given to the DHMT and to some HCs is the quarterly performance audit. Discussions with regional staff convinced the evaluation team that the regions can influence quality of care at the HCs by including DHMT clinical staff in the performance audit visit, and then delegating responsibility for solving problems to district-level staff. Supervisory staff reported that during these visits, the focus would often go beyond that prescribed by the performance audit to more specific technical areas. For example, the clinical care specialist might look more closely at maternal health services and thus help to identify opportunities for

problem solving at the HC. Since many quality indicators are in the hospital subsection of the audit form (such as “patient satisfaction”), the audit could similarly contribute to QA activities.

Those HCs that reported receiving formal visits from the regional office generally felt it was done infrequently and was largely nontechnical (though a review of one performance audit report listed a series of “clinical problems”). One DHMT said that although regional supervisors visit, he does not “see any long-term results of communication with the region” since the district does not get needed resources.

In addition to the performance audit, unplanned or informal visiting at the HCs by technical staff from the regional office was reported. This too could provide input into the identification and resolution of quality of care problems, though the evaluation team did not encounter any facilities where this had occurred.

With regard to supervisory skills and training, regional staff want to improve their interpersonal skills for interacting with district and HC staff. Some also requested that observation checklists be developed in all relevant technical areas to help structure supervisory visits.

Supervision does not always focus on quality and QA issues. At the district level, supportive supervision, in the form of a formal integrated team visit to the HC, was reportedly often used to monitor QA activities and identify problems to be addressed by the problem-solving teams. This appeared to be due in large part to the presence of one or more DHMT staff who had either been trained as a QA coach or facilitator or had otherwise participated in a QA training workshop. Four districts (Kabwe, Kitwe, Choma, Lusaka), all of which had a trained facilitator/coach on the DHMT, reported that the supervisory visit was used to monitor the work of QA teams in implementing the problem-solving steps, identifying additional QA training needs, and addressing quality of care issues at the HCs.

In general, HC staff appreciate the need for frequent, supportive visits from their DHMT, but many want more frequent formal visits from district staff, especially regarding technical issues. Though technical supervision was said to be routinely planned and performed, HCs often reported less frequent visiting than was reported by the district (see Table 4–10).

The supervisory visit provides a mechanism for routine monitoring of service quality. Six of seven DHMTs interviewed said all HCs were visited every quarter. If the IMCI checklist was used during the visit, then a review of Out-Patient Department (OPD) cards was

**Table 4–10
Types and Frequency of Technical Supervisory Visits**

District	Total HCs	1. Frequency of Formal Visits to HCs 2. Frequency of Other Kinds of Visits	HC Interviewed
Kitwe	19	1. Formal team visit: 2/month 2. Unannounced monthly visit	Chimwemwe
Kalulushi	14	1. Formal quarterly team visit 2. Unannounced monthly visit	Kalulushi Gov.
Lufwanyama	13	1. Formal quarterly team visit 2. Unannounced monthly visit	Chimokunami
Monze	14	1. Formal quarterly team visit 2. Quarterly technical visit	Rusangu
Kabwe	13	1. Monthly formal team visit 2. Other: Undetermined	Mahatma Gandhi
Nakoli/Kapiri	18	1. Monthly formal team visit 2. Other: Undetermined	District Hospital
Lusaka	22	1. Formal quarterly team visit 2. Bi-annual special visit	Kalingalinga

reportedly done to check for treatment and diagnosis as well as direct observation of patient care (the latter did not appear to be routinely done, as noted above).

Supervisory visits were also found to contribute to the work of QA teams, helping identify problems. In Kabwe, a DHMT supervisory visit included discussion of findings from a client survey, which led to a team’s addressing the problem of clients bypassing the HC to seek care at the hospital. In Nakoli Clinic, the quarterly supervision visit identified problems with user-fee collection, prompting the development of a system for monitoring fees. The new system was replicated at other HCs. In Choma, district supervisors noted some discrepancies in the figures reported for malnutrition; a team problem solving reportedly found an appropriate intervention.

Most feedback from the DHMT visit was reportedly given immediately so individual clinical problems could be corrected quickly. In Kitwe, if common problems were found across all health centers, then meetings would be held with all in-charges to discuss remediation. Sometimes, feedback would be given during a general meeting at the end of the formal DHMT visit and would include all clinical staff and often NHC members. Problems discussed in a meeting

with the NHC, HC staff, and DHMT included long waiting times, availability of drugs, the nonsupportive attitudes of supervisors and staff, and clinic maintenance.

Other planned and unplanned visits to HCs were also reported, occurring between formal quarterly visits and quite often addressing problems identified during the formal visit. In Kitwe, supervisors reportedly observed patient flow and checked patient records. In Kalulushi, problems that were identified and discussed during supervisory visits included the need to correct and monitor staff in the use of a new chloroquine regime. In general, unannounced visits by the district staff were thought to encourage continued attention to quality.

Apart from the supervision given primarily by the director through daily interaction with other DHMT staff, internal supervision at the district office is done through the new HMIS self-assessment form. The form relies on self-assessment data from the HCs. This form was encountered in only one district, though it was said that the data generated had been used to “address problems such as malaria treatment.”² The region was also said to have reviewed and discussed the form during the performance audit, though this could not be confirmed.

Supervision within and between HCs and How It Supports QA Activities

Within the HCs, routine supervision by the responsible staff in various units was also found to contribute to team problem-solving activities. In larger urban health centers such as Kalingalinga, for example, routine supervision is done by the in-charges of various departments. The maternal and child health supervisor identified the problem of antenatal care clients coming for a first visit during their second or third trimesters; this was resolved through a problem solving. At Mahatma Gandhi Clinic, supervisors reportedly checked OPD cards and medical records routinely and discovered low monthly postnatal attendance as compared to antenatal visits; this was also resolved through problem solving.

² The relevant indicator is a composite ratio of new malaria cases per quarter to new malaria cases in the same quarter of the previous year. Disease aggregation forms for individual HCs would have had to be reviewed in order for district supervisors to begin investigating the underlying causes. Direct observations or some form of record review would then have been needed to confirm that treatment of malaria was indeed a problem. It remained unclear what the actual fact-finding process was, whether or not it was actually done as part of a QA exercise, and thus how the indicator might have been used to address the quality of malaria services.

Supervision between HCs occurred in the form of a peer review in which IMCI-trained staff from one HC monitor and are monitored by another IMCI health center. Weekend supervisory visits by a team of HC staff also occur. In Kitwe District, the IMCI supervisors had received a three-day training in QA and were instructed to check the storybooks as part of their IMCI support visit. It was further hoped that they would be able to provide support to the QA teams and relieve the link facilitator of some of this responsibility. In addition, the weekend supervision was said to contribute to problem-solving activities at the HCs; for example, problems with the maintenance of the Oral Rehydration Therapy corner and refrigeration of vaccines were brought to the attention of HC staff.

D. The Role of Other Structures and Sectors in QA Activities

1. The Neighborhood and Health Center Committees

A 1997 CHESSORE survey describes the participation of the NHCs in the improvement of the health services (CHESSORE 1998a). Most such activities relate to: (a) the rehabilitation of HCs, (b) information and mobilization of the community, (c) expression of community dissatisfaction with health services, and (d) community surveys.

Since they represent the communities and express patients' perspectives on quality of care, the NHCs should be involved in some QA activities (e.g., problem solving). However, it is not clear how much they can contribute without formal QA training. Some problem-solving teams have included trained members of NHCs in their work (Civic Center Clinic, Lusaka).

The evaluation team found anecdotal evidence of public involvement in QA activities. In Kabwe (Mahatma Gandhi Clinic) patients complained about the shortage of drugs. The NHC and clinic staff looked at the medical records and realized that many patients were coming from outside the clinic's catchment area. The NHC decided to realize a census to register authorized patients and be able to identify the area where eligible patients reside. Others are now referred to their own HC.

Some HC committees (Kabwe) were involved in the development of the 1999 district action plan by a district health board (DHB).

2. The District Health Boards

The team met with the Kabwe DHB and discussed its role in improving quality of care. Most board members are not health professionals, but they have the power to make decisions affecting the quality of care and QA activities, such as: (a) approval of budget, (b) approval of staff recruitment, and (c) identification of training needs.

The DHB participates in technical meetings with the DHMT and accompanies it on inspections of facilities. The DHB mentioned that it worked on the issue of maternal mortality when an NHC complained that pregnant women were dying during deliveries at home because the HC did not have a delivery room. The DHB decided to build an extension to the clinic for deliveries. This issue was an eye-opener for the DHB, which is trying to address it in other areas.

The DHB also took an active part in distributing the patients' rights booklet.

3. The Private Sector

The Churches Medical Association of Zambia (CMAZ)

The CMAZ coordinates activities between different church-owned health facilities (31 hospitals, 60 HCs), trains managers, works to help its members secure financing, and is an official link between these services and the government. Most mission health facilities have mission doctors and nurses but are mainly staffed by government employees selected by the churches. Those staff are on the same contract as staff in public health services.

The association confirmed the evaluation team's findings that many of its members participated in the QA training by the CBoH and that districts usually include mission health centers with the public centers in their quarterly supervisory visits. The team was told that QA training by the association is a three-hour session on a regular management course. The association was interested in taking a full part in national and district training and quality activities, but emphasized the limited financial resources of its members to undertake quality improvements that require extra resources.

The association will shortly be acting as an agent for USAID to channel funds for specific health programs to districts and evaluate the results. This will include a quality evaluation component.

The Faculty of Private Practitioners

This association has 300 registered practitioners, including 88 members in Lusaka. All members are medical officers; it is estimated that they see about 1 to 2 percent of out-patients in Zambia.

Although the faculty has no official QA policy, its members are required to annually attend 10 out of 12 monthly clinical meetings (continuing medical education) in order to be registered.

The association does not monitor or evaluate the quality of clinical care.

4. The Regulatory Bodies

The General Nursing Council

The GNC is a statutory body (established in 1970) responsible for ensuring that members of the public receive the best possible healthcare. The GNC sets, monitors, and evaluates performance standards for nursing/midwifery education, clinical practice, management, and research.

Its main activities are: (a) inspection of health institutions and schools of nursing and midwifery, (b) membership on the Accreditation Council, (c) curriculum development and revision for nursing and midwifery training, (d) setting entry standards for nursing and midwifery basic training, (e) issuing certificates to qualified nurses and midwives, (f) approving training institutions for nursing and midwifery, and (g) disciplinary actions for students, nurses, and midwives.

The GNC participated in the development of the indicators used for hospital accreditation.

The GNC communicates standards by: (a) sending circulars to individuals and institutions, (b) conducting workshops, (c) taking corrective measures during health facility inspections, (d) making recommendations to health facilities during inspections, and (e) holding meetings with stakeholders to discuss ways to improve healthcare quality.

The GNC has inspection guidelines for health institutions and schools of nursing and midwifery. They focus on the structure of the facilities, standard operating procedures, and policies. Most of the judgement criteria are not explicit.

Monitoring of quality care is a problem because of financial and material constraints. The council can achieve the following through its health facility

inspection: (a) meeting with management, (b) checking for compliance with standards in medical, nursing, and administrative areas, (c) direct observation of clinical care, (d) client and staff interviews, (e) inspection of nursing and medical records, (f) noting whether resources such as equipment and time are available for provision of nursing care, (h) ensuring staff have valid licenses, and (i) correction of malpractice on the spot.

The Medical Council of Zambia

The MCZ inspects private hospitals and clinics, using a checklist called "inspection certificate," which focuses exclusively on the structural aspects and not on the assessment of the care. It also approves the curriculums for all paramedical training institutions except for nursing schools: clinical officers, dental technicians, and laboratory technicians.

5. The Patients

Several surveys informed the evaluation team on the patients' perspectives on the quality of care (CHESSORE 1998a). The results are consistent with the international literature on patient satisfaction. For a patient, the most important features are: (a) the availability of drugs, (b) the politeness of the staff, (c) a short waiting time, and (d) a physical examination. This last feature is interesting since it relates to the process of care, usually considered by professional staff to be too complicated for patients to appreciate. One survey revealed that only 38.7 percent of patients thought that they were properly examined (MOH 1994), while 67 percent thought that staff had poor clinical skills (CHESSORE 1997).

One survey, done before the health sector reform and the QAP started, assessed the perception of the quality of care by the beneficiaries (The World Bank 1993). It looked at urban/rural differences and found that: (a) in rural areas the basic minimum level of resources was lacking (especially staff) and patients complained about drug shortages and staffing inadequacies, (b) in urban areas, the main problem was the mismanagement of resources; patients also complained about drug shortages.

A patients' rights booklet describes the level of quality of health services that people are entitled to as well as the categories for fee exemptions (CBoH 1996). It was distributed to all hospitals, districts, HCs, and consumers' associations. It states standards but does not quantify them, leaving the quality gap difficult to measure. How well patients know their rights is undocumented.

6. The Training Institutions

The Nursing School

The University Teaching Hospital (UTH) graduates some 60 registered nurses per year. The principal tutors from the school reported that since 1990 the nursing curriculum had not been revised or reviewed to integrate standards of care. At that time the review panel consisted of representatives from WHO, GNC, the Department of Post-Basic Training, MOH, and other programs. Although another review was planned for October, 1998 staff felt that the process should be both more systematic and frequent. Tutors participate in programs such as Safe Motherhood and IMCI, or go for periodic “updates” or training, then disseminate technical knowledge (from their own notes/material) in their courses. A mechanism for standardization of this new knowledge is an examination panel made up of principal tutors. Among those interviewed, however, the consensus was that not all tutors have enough knowledge on new topics. Overall, new knowledge is imparted to students on an informal and irregular basis.

Another way new knowledge is acquired/shared is through field practicums. To acquire skills in delivery of primary healthcare at the district level, nursing students may be sent to the field with costs (fuel, accommodation, food, and transport) paid by the nursing school. The district gains free labor in the form of registered nurses who are at a higher grade of training than many HC staff.

Action plans for 1996 included activities like internships for following up students after they left the institution, but they were never implemented due to funding problems. The GNC reportedly monitors nursing standards through their periodic evaluation of hospitals and nursing school accreditation activities.

Tutors were interested in including QA in their management curriculum. MOH or other specialists are invited to speak as part of a two-week management course given separately from basic nurses training. It was thought that this might be a way to introduce students to QA. The felt need, however, was to integrate QA as part of preservice and post-basic training curriculums.

The School of Medicine

It was unclear whether clinical quality standards were taught at the school to medical and other post-qualification students. QA did not seem to be taught, but quality was beginning to be addressed by faculty in academic journals (Simms 1998). Formal links do exist between the School of Medicine and the CBoH, with the Dean

on the Board of CBoH. Improving the number and quality of links between the health system and the school would help to ensure that the students become familiar with the standards of clinical care. The school also could develop its input into formulating and revising care standards and protocols to ensure that they conform to the latest research in developing countries. The school expressed an interest in developing a Masters-level program in Health Service Quality, with the faculty teaching prequalification students and running in-service quality training. The school wished to introduce QA programs and faculty and felt that this could complement the training run by the CBoH and help to build a long-term QA capability in Zambia.

IV. Detailed Recommendations for Strengthening QAP

This chapter assembles the recommendations made above, detailing the most important ones and listing some options for their implementation when appropriate.

A. General Recommendations

The evaluation team feels that a program as important as the Zambian QAP justifies more frequent reviews, perhaps every two years. Also, regular monitoring of QA activities and their effects would help in collecting the documentation necessary to continuously improve the program.

1. Policy Recommendations

A national QA policy that includes the private sector should be developed. It should describe the vision, strategy, and objectives of Zambia’s QAP. This would allow the development of an action plan that would facilitate the implementation, monitoring, and evaluation of QA activities. The design of such a policy should not be restricted to the actions undertaken by CBoH, but should include the nongovernmental institutions that have a role in QA. Such a policy would help define the QA roles and responsibilities of various stakeholders in the health system.

2. Strategic Recommendations

The vertical integration of QA into all levels of the health system should be strengthened by creating or reinforcing the links between the QAP and:

- The regions (or provinces), by building QA capacity in the regional team and adapting the performance audit instruments; this requires sensitizing and training the regional teams
- The districts, by building QA capacity in the DHMT and adapting the performance monitoring instruments for supervision; this means that DHMTs should be at least sensitized in QA and some members trained
- The hospitals, by bringing QA into their management board and services. QA has not yet been introduced at the hospitals, and the new accreditation program intensifies the need for ways to meet the attendant new standards

The horizontal integration of QA into other directorates of the CboH must be strengthened by creating or reinforcing the links between the QAP and:

- The Directorate of Health Services Commissioning, through the implementation of the hospital accreditation program. The QAP should participate in providing technical assistance to the hospital boards and measure the impact of accreditation on the quality of in-patient care
- The Directorate of Systems Development, through the development of standards, clinical guidelines, and job aids. This directorate should coordinate the development of clinical guidelines and job aids that best fit the needs of health providers
- The Information and Health Systems Research Unit of the Directorate of Monitoring and Evaluation, through: (a) the development of operations research on QA and quality of care and (b) the monitoring of the use and impact of the HMIS on the work of the QA teams.

The integration of QA within the private health sector and parastatal institutions must be strengthened by creating or reinforcing the links between the QAP and:

- The regulatory bodies, such as the GNC and the MCZ, through their involvement in the development and communication of standards and the quality performance monitoring system. These entities are already inspecting training institutions and would benefit from the QAP approach to monitoring clinical performance
- The training institutions for medical, nursing, and paramedical staff, through their participation in the development of standards and their inclusion in the preservice and post-basic curriculums

- The private associations, such as the Faculty of Private Practitioners, through their involvement in developing and communicating standards and assessing quality in the private sector

B. Recommendations on Standards of Care

1. Recommendations on the Development of Standards

The development, adaptation, and revision of clinical care standards should be defined in an official policy. The process of developing standards necessitates that one structure (e.g., the Directorate of Systems Development) coordinate the work of groups of technical experts, providers, and users. The involvement of health providers from all levels of the system would ensure that standards are realistic and accepted by their users, while experts' involvement would guarantee their scientific validity. Evidence-based medical literature is key in developing standards.

These standards should be based on research and an assessment of the health providers' needs for guidance through job aids. The field of job aids development is complex and more research should identify the factors that influence their use by health providers. If they are used, their potential to improve quality performance is enormous.

The development/adaptation of standards must be consistent with the development of other materials, including training materials, pre- and in-service training curriculums, job aids, and any instrument used to measure compliance. In other words, when new standards are developed, this should trigger a set of changes in the other mechanisms to communicate the standards (pre- and in-service training), as well as the criteria on which performance is being assessed and therefore the instruments to do so (supervision checklists, etc.).

2. Recommendations on the Communication of Standards

A national strategy to communicate standards that does not rely solely on classroom training should be developed. It should draw on principles for behavior change that would improve clinical practice. The effective communication of standards induces a change in clinical practice, which is not easily done by training alone. The communication strategy should include a combination of interventions based on behavioral science. This

is also a topic for research since little is known about the factors that would cause health providers to adopt them.

The curriculums of Zambian nursing and medical training institutions should include the new standards through regulatory mechanisms and the involvement of stakeholders. This would reduce in-service training and its costs. Preservice training is often overlooked and comes last, if ever, in a strategy to introduce new standards of care. This leads to a paradoxical situation where young graduates are targeted for retraining as soon as they start work.

The continuous reinforcement of standards is key to an effective communication strategy. Districts and officers in charge should be encouraged to use all opportunities (e.g., during supervisory visits and technical meetings) to reinforce standards of care. When regularly reminded of the standards, health providers do better, and the supervision visits and technical meetings should be organized to emphasize QA and quality of care.

C. Recommendations on Performance Monitoring

The assessment of quality performance should include measuring health workers' compliance with process standards through direct observation of the delivery of care and not focus only on inputs and outcome standards. Performance audits and supervision visits provide opportunities to observe clinical performance and provide on-the-job training, so mechanisms are in place for this recommendation, but it will require redesigning the forms and re-thinking the entire strategy, from identifying the skills needed to understanding the constraints. This should be a research topic since resistance to direct observation of care seems pervasive.

A specific strategy should be designed to explore the causes of poor performance to determine whether it is caused by lack of competency or something else. Before identifying training as the answer to poor performance, problem-solving teams should explore the root causes and regularly test clinical competency to identify in-service training needs. Other performance deficiencies might better be addressed through problem solving.

A formal recognition and reward system based on quality performance should be established to create incentives to improve quality. Rewards should be determined on the basis of effectiveness and acceptability to district health boards. The staff appraisal system should be redesigned to assure that quality performance is

linked with career promotion and that the measurement is objective and fair.

D. Recommendations on QA Activities

Investigate methods for improving quality in HCs with five or fewer staff, using the evaluation team's evaluation methodology (Appendix D) if appropriate. If the CBoH wishes to form problem-solving teams in small HCs, further investigation is needed of the conditions required for these teams to succeed and whether these conditions are feasible. Most of the QA program resources have been devoted to building team problem-solving capacity. The QA Unit or others should investigate the levels of quality in small centers to determine which QA methods would be appropriate for them.

Continue using the problem-solving model, but with simplifications and with changes to training. The team problem-solving method can be effective in HCs with over 10 staff under certain conditions. It should continue at these centers but be simplified for those who receive less training. The last step of the model should be divided into two parts: "implementation" and "evaluation." Step 4 could be broken into two steps: "initial problem analysis" and "data gathering and root cause location." This would emphasize the importance of data collection. Each trainee should have a copy of simple guidelines for team problem solving and also use a storybook. The training materials and sessions should recommend choosing a simple problem for the first cycle, involving users or NHCs, following steps in succession and linking them, and gathering and interpreting data.

A simpler, modular five-day training package for district training should be developed for those who will not be coaches; it should incorporate the above simplifications. Its developers should draw on the experience of links and coaches who have designed five-day or 20-hour session courses, because resources are not available for longer training. The course should emphasize both the linkage between the steps and the data gathering and interpretation to determine "real root causes."

For the first cycle, teams with little training should learn by doing, using its first problem-solving cycle as a training exercise. A coach should attend each meeting to help the team learn by doing and to show good practices in documentation, how to use the methods, and how to link the steps. Identification of the priority problems could be done during the QA training.

The evaluation team's evaluation system (Appendix D) should be piloted as a method for helping teams learn how to be more effective, assessing teams, and giving them feedback. Teams should be taught how to use this system for self-assessment and to guide a peer review of the work of other teams.

Links and coaches should develop skills to decide when to use a team problem-solving cycle and when not to. They should then train and advise teams on how to make this decision.

NHCs and consumers of healthcare services should be involved in QA problem solving, and patients should drive the quality program. Pilot efforts should be evaluated to generate recommendations for increasing involvement.

All teams should document their work in storybooks, and the documentation should be available. At least one copy should stay in the health facility, and coaches should use it to monitor team progress when they cannot attend meetings.

Other methods to improve quality for different circumstances should be investigated. While the approach taken by CBoH has achieved a great deal, different QA methods are needed for different settings, such as small facilities. The QA Unit should become more familiar with other methods and assess which might be appropriate in different facilities and for different types of services (disease prevention, drug supply). An assessment should be made of the value of training and problem-solving teams compared to other quality improvement methods, such as clinical training, patient education and counseling skills, on-the-job training, supervision of clinical skills, protocol and guidelines development, standard setting and indicator development and monitoring, and clinical case review and clinical audit.

E. Recommendations Regarding the QA Support Systems

1. Recommendations on QA Training

To ensure priority for QA training, a training needs assessment should be done as part of the yearly action plans. In reviewing these plans the CboH or regional office should ensure that QA training activities have been adequately planned and budgeted, and district plans should include coaching or link facilitator visits to HCs.

CBoH should develop enough QA trainers and experts at the national level to provide adequate technical

support to all levels of the system. Two trainers per regional or provincial level team could suffice. The objective is to have the capacity to ensure responsive, consistent training support.

Relevant professional regulatory boards (GNC and MCZ) should take QA training and incorporate QA concepts into preservice and post-basic training curriculums.

All professional staff at the regional and district offices should take some QA training, within resource constraints. Training should cover standards setting, indicator development, and problem solving. QA could also be incorporated into other management training.

The DHMT should identify candidates for QA training, in particular staff at the HC level, who could become in-house coaches or facilitators to one or more HC teams.

At least two people per HC should be trained in QA (including the in-charge). The district should then ensure that there are enough trained coaches to cover as many facilities as possible given available resources and geographical access.

2. Recommendations on Coaches and Link Facilitators

At least one staff on the DHMT (i.e., a district-level coach or link facilitator) should have responsibility for QA activities in the district. This person should participate in the district team supervision visits to the HCs and include QA in the integrated supervisory approach.

QA training should further strengthen capacity in QA planning, effective communication and teaching, and supportive supervision. Furthermore, support visits by the central level to coaches and link facilitators should be intensified (at least early on) to further ensure that training efforts actually do result in QA activities.

District offices and coaches should take advantage of existing opportunities (e.g., district-level meetings and other training workshops) to update their QA training and share information on QA activities and quality issues.

3. Recommendations on QA Documentation and Feedback

Existing reporting systems should include reports of QA activities; timely feedback should be given to the appropriate levels; and information should be shared between and within levels. QA staff at the CBoH should help determine what information on QA activities may be useful at each level and how it should be reported.

QA staff should ensure complete documentation (e.g., in storybooks) of QA activities and effective use of the documentation to monitor the work of teams. Sufficient storybooks should be available to enable this.

4. Recommendations on Supervision of QA Activities

Regional offices should ensure that DHMTs are providing adequate and frequent supervision to the HCs. Since supervision is planned and budgeted as part of the annual action plan, some interim review of achievements could evaluate where supervision problems may exist (e.g., quarterly visits are not occurring, supervisory reports are incomplete).

Each district should plan and budget for an adequate number of supervisory visits and ensure that they occur. Staff suggested that the minimum number of visits would include quarterly visits plus four others per HC per year. Visits should initiate and support QA problem-solving activities and, in the spirit of supportive supervision, allow for adequate feedback and local resolution of problems.

The person(s) responsible for QA activities at the DHMT should be involved in quarterly supervisory visits to HCs. Many QA coaches and facilitators are DHMT staff, which seemed to facilitate the integration of QA into their supervisory duties. These quarterly visits could then be followed by visits in support of teams.

F. Prioritizing the Recommendations

The long list of recommendations results from the evaluation methodology. This kind of methodology produces detailed results, and the team believes it would do the same in different settings. These results are not unusual and are consistent with findings in other countries.

Of all the recommendations in this report, the ones in this section should be first in Zambia's efforts to improve healthcare quality. They are divided into two categories: those that can be acted upon immediately and those that need more analysis of their causes and operations research.

1. Priority Recommendations for Improving the QA Program

The evaluation found the lack of QA expertise in most of the DHMTs hampered the work of the facility teams. When no district team member has had QA training, no one at the district level takes ownership for quality

improvement in the district, and no one supports, through coaching, the work of the teams. The teams have a hard time implementing QA methods, and they do not have time to teach and coach others if they are in charge of a health center. At least two DHMT members per district (one being the District Medical Officer) should be trained in QA and take responsibility for QA activities.

Despite its tremendous efforts and remarkable success in covering the whole country with a network of coaches and trainers, the CBoH remains weak in its capacity to sustain and expand the QA program, because only two people at the central level are in charge of QA. While "quality is everybody's business," if there are insufficient people to do the job, it is not done. The dedication of the two QA staff is remarkable, but the central QA team needs to be strengthened to build QA capacity in districts and monitor the progress of the QA activities nationwide.

A national QA policy would boost the interest in QA and health sector reform and enable progress despite de-linkage and the collapse of the drug supply system. Milestones covering the next five years with a clear strategy to institutionalize QA would also help, making it easier for the CBoH partners to design their support for improving healthcare quality.

Currently, the focus of supervision is not quality of care, but changing supervisory processes could have a tremendous impact on quality. It should focus on quality monitoring and improvement through the definition of standards for supervision. Supervisory visit should facilitate the direct observation of the delivery of care, feedback the results, and help teams solve quality problems or improve healthcare processes.

A capacity for QA training must be built through a network of certified QA trainers and the introduction of QA into preservice curriculums. This would build self-reliance and ensure QA's sustainability.

2. Topics for Operations Research

The evaluation team is puzzled by the reluctance of supervisors to directly observe the delivery of care and of health workers to use job aids. Research into these areas should be undertaken as soon as possible.

Other research topics are: (a) ways to increase the cost-effectiveness of QA training, (b) standards development and the best communication strategy for improving clinical practices, (c) workers' perceptions of the scientific validity, feasibility, reliability, and clarity of the ITG standards, and (d) factors that influence the productivity of the problem-solving teams.

V. Conclusion

There is growing evidence of the impact of QA methods on the quality of care in resource-constrained environments, where simple solutions such as re-training of staff or the supply of additional resources have failed. The richness of the QA experience in Zambia provides lessons that will benefit not only the health sector reform in Zambia, but also other QAPs. While much remains to be done, the enormous number of discrete changes resulting from the work of the QA Unit and the Directorate of Monitoring and Evaluation has had a tremendous impact on the way patients interact with their health system and demand quality. Health providers' behavior is also changing under the positive influence of the attention districts are paying to their work and the empowerment mechanisms that have been established through decentralization.

The key lessons learned from Zambia can be summarized as follows:

- Support systems, such as coaching and QA training capacity, must be well established at the district level in order to assist the teams. In a decentralized system, the QA program should first target the districts so that team ownership for QA activities will develop

- Numerous factors influence the productivity of the problem-solving teams. The tools developed for this evaluation (difficulty index and team failure index) proved to be useful, and coaches could use similar materials to assist teams
- The health workers' resistance to job aids that would improve their compliance with standards and supervisors' reluctance to directly observe the delivery of care are barriers to better healthcare quality. More research would determine the causes of these behaviors and assist in their improvement
- A detailed documentation system of the QA program would help in monitoring the QAP's impact and making adaptations

QA is more than tools and methods. It is a spirit that comes only from a mentality change, where clients make demands and express their expectations, where health providers question their own performance, and where managers make client-oriented, data-based decisions to constantly improve healthcare systems. It cannot happen overnight. It took five years to initiate change and the emergence of a quality culture in Zambia.

Work Cited

- Central Board of Health (CBoH). 1996. *Patient's (client's) entitlements and responsibilities in accessing health care services in Zambia*. Lusaka.
- . 1998a. *1999 district action plan: District health planning guide for district health office and health center planners: 1999*. Vol. 2.
- . 1998b. *Health Management Information System: Procedures manual for health centers*. Directorate of Monitoring and Evaluation.
- . 1998c. *Link Facilitators' Reports*.
- Central Statistical Office. 1998. *The Zambia situation analysis 1997: An assessment of the functioning and quality of reproductive and child health services in Zambia*. Lusaka.
- Centre for Health, Science and Social Research (CHESSORE). 1997. *Quality of care factors in the Zambia health services*. Lusaka.
- . 1998a. *Preliminary fieldwork survey briefing on the organisation, functions and responsibilities of the health centre committees in the Northern Province of Zambia*.
- . 1998b. *The performance of health services in Zambia*. Lusaka, 1995–96.
- . 1998c. *The performance of health services in Zambia*. Lusaka, 1997–98.
- Franco, L.M., J. Newman, G. Murphy, and E. Mariana. 1997. *Achieving quality through problem solving and process improvement*. Quality Assurance Project, Center for Human Services, Bethesda, MD.
- Heydelberg, E., T. Mubonda, and J.M.N. Tembo. 1997. *Review of HMIS/FAMS/ITG cascade training*. Mission Report. Lusaka/Amsterdam.
- Limbambala, M.E., and J.M.N. Tembo. Undated. *Quality assurance, monitoring and evaluation*.
- Limbambala, M.E. and J.M.N. Tembo. 1996. *Discussion paper on QA of laboratory services*.
- Ministry of Health (MOH). Undated. *Certification of hospitals: Proposed minimum standards to be met by referral hospitals levels 1,2,3, and 4 (UTH) in order to be certified by the Clinical Advisory Committee of the Central Board of Health*. Quality Assurance Unit.
- . 1993a. *Factors leading to inappropriate use of western medicines for acute diarrhoea and dysentery by consumers and health care providers in Mbala District, Zambia*. Health Systems Research Unit.
- . 1993b. *Healthcare quality assurance manual*. Lusaka.
- . 1993c. *Source reference standards in clinical and nursing care, diagnosis and environmental health services*. Ministry of Health, Zambia.
- . 1994. *Study of factors contributing to poor quality of clinical care in health institutions, and establishing the availability, utilization and appropriateness of standards in Zambia*. Quality of Health Care Project.
- . 1996a. *Health sector reform review*. The Participatory Assessment Group, Lusaka.
- . 1996b. *National strategic health plan 1995–1999*. 3rd Edition.
- Quality Assurance Project (QAP). 1996. *Quality assurance coaching*. Center for Human Services, Bethesda, MD.
- Republic of Zambia. 1997. *Immunisation coverage 1992 and 1996: Zambia demographic health surveys: A review*.
- Simms, P. 1998. Towards clinical audit in the University Training Hospital and health services of Zambia. *Zambian Journal of Medicine and Health Sciences*. 2:20–21.
- The World Bank. 1993. *Quality of care beneficiary assessment study. Zambia health sector study*.
- Tropical Disease Research Centre (TRDC). 1997. *Guidelines for malaria management, prevention, and control in Zambia*. Lusaka.
- World Health Organization (WHO) and UNICEF. 1995. *Integrated Management of Childhood Illness*. Geneva, Switzerland.

Appendix A:

Selected Sections of the Scope of Work and Terms of Reference

Purpose of the Mission

The purpose of the mission is to evaluate the Quality Assurance Programme in Zambia in order to make recommendations that would help the Central Board of Health and its partners make decisions to adapt and improve its strategy for improving the quality of care. The evaluation will seek to answer in-depth the specific questions detailed in the scope of work on some components of the QA activities carried out in Zambia, rather than to try to address, in a short period of time, all components of an ideal model for a QA program. However, the team is encouraged to make recommendations on QA activities not currently undertaken and that the team thinks could benefit the Zambia health system. Given the parallel work of the Joint Commission on accreditation of hospitals, the evaluation team will not address this issue.

Overall Organisation of the Mission

An evaluation team of six experts will be constituted: three international experts (one process improvement specialist, one health systems analyst and one standards specialist) and three local Zambian experts (one qualitative data specialist, one quantitative data specialist and one cost analyst). One of the three international experts will be recruited from URC/CHS and will be the team leader.

The total duration of the mission will be four weeks:

- Field work : eighteen workdays of the core evaluation team in Zambia to collect and analyse data and to present the draft of the final report in a workshop;
- Finalisation of the report: five days of the team leader at URC headquarters to finalise the report.

As preparation of the evaluation, the CBoH will gather relevant documents for the team to review and will organise a presentation of the health sector reform and QA activities in Zambia at the beginning of the mission.

The mission will use mainly, but not exclusively, the following methods: meetings with key people and institutions, review of documents and records, and group working sessions. Given time constraints, the collection of primary data through surveys is not expected. The consultants will work in subteams of two:

- The standards subteam will be made of the international QA expert and the local expert in quantitative data analysis.
- The process improvement subteam will be made of the international expert in Total Quality Management and the local expert in qualitative data analysis.
- The support systems subteam will be made of the international expert in support systems and the local expert in cost analysis.

We would focus on one or two locations and all three topics will be studied in depth at the same time both in urban and rural settings. This will allow linking the information obtained by each consultant. However, during their data collection work, each subteam will work independently with the appropriate level of the health system. The evaluation team will meet regularly in order to exchange information, identify problems encountered for the completion of the work, and monitor the progress according to the work plan, under the facilitation of the team leader. The evaluation team will work according to the schedule presented in Table 1, the details of which will be finalised during a team planning meeting upon arrival in the field.

Scope of Work

1. The **standards subteam** will document the way standards are developed and communicated and how compliance with standards is measured and used for decision-making to improve the quality of care. More specifically, the standards subteam will:

- Identify the documents that present the standards for technical and managerial functions performed by health facilities;
- Document the ways the standards are developed (who was involved, what was the adaptation process, etc.);
- Document the ways the standards are communicated to the health providers and other staff supposed to apply them (training, meetings, etc);
- Assess the level of knowledge of the existence of the standards and of the standards themselves, as well as the attitude of the staff about the standards;
- Assess how standards (including clinical guidelines and Standard Operating Procedures manual) are used by staff;
- Document the existence of a revision/adaptation policy for standards;
- Document the role of the regulatory bodies in the development of standards;
- Identify the mechanisms by which compliance with standards is measured;
- Document how the information on compliance with standards is used to improve quality of care;
- Identify the constraints in the development, communication and use of standards;
- Suggest options for improvement of the development, communication and use of standards; and
- Investigate any other relevant question identified by the evaluation team.

Data collection methods used by the standards subteam will include, but will not be limited to: i) meetings with the public and private sectors institutions in charge of developing and communicating standards, ii) in-depth interviews with health providers, and iii) review of documents and appropriate reports.

2. The **process improvement subteam** will document the work of the facility-based problem-solving teams, through collection and analysis of data on the structure, process and results of their work. More specifically, the process improvement subteam will:

- Determine the level of competence of the staff in problem solving techniques;
- Document the type of problems identified by the teams, and their relevance;
- Measure the average duration of a problem solving cycle and suggest ways to shorten it;
- Validate the progress made by the teams on the basis of their self-monitoring;
- Document the way the different steps of a problem solving cycle are carried out;
- Describe the problems that the teams face in defining and analysing the problem, as well as identifying solutions;
- Assess the appropriate use of QA tools such as the flowchart and cause-effect diagrams;
- Assess the way data are used for identifying a problem and defining a solution (sources of data, collection, analysis, appropriateness of data on quality of care issues, constraints);
- Identify the constraints to the work of the problem-solving teams and at which level they can be best addressed;
- Suggest options for improvement of the work of the problem-solving teams; and
- Investigate any other relevant question identified by the evaluation team.

Data collection methods used by the process improvement subteam will include, but will not be limited to: i) focus group discussion with the problem-solving teams; ii) in-depth interviews with individual staff members; iii) review of any record that documents the problem solving activities; iv) interview with the link facilitator; v) interview with the coach; vi) supervision of problem solving activities; and vii) population based survey, if needed.

3. The **support systems subteam** will document the functionality of the systems that support the quality of care improvement activities, through data collection and analysis of the supervision, coaching, QA training systems and documentation of QA activities, as well as their recurrent costs. The team will focus on the systems that support the QA activities, not the support systems to the clinical and managerial work of the health providers. More specifically, the support systems team will:

- List the existing support systems to the QAP in Zambia;
- Identify the support systems that are missing for the QAP in Zambia;
- Identify the standards according to which the support systems have been established;
- Identify the specific problems that each support system is facing;
- Evaluate the level of integration of the support systems into the activities of the health staff at various levels;
- Identify the constraints in the operations of each support system;
- Suggest options for improvement to each support system;
- Identify the amount of resources needed for the work of the problem-solving teams, including time and cost;
- Identify the amount of resources needed for maintaining the support systems, including time and cost;
- Identify the amount of resources needed for setting and communicating standards, as well as measuring compliance, including time and cost;
- Assess the costs involved in implementing the recommendations made by the other consultants;
- Suggest options for improving the efficiency and reducing the cost of the QAP; and
- Investigate any other relevant question identified by the evaluation team.

Data collection methods used by the support systems subteam will include, but will not be limited to:

- i) focus group discussions with the central, regional and district health teams in charge of the support systems;
 - ii) in-depth interviews with health providers supposed to benefit from the support systems;
 - iii) review of any record that documents the support system; and
 - iv) interviews with supervisors, coaches, QA trainers and facilitators.
- Data collection methods used by the cost-analysis expert will include, but will not be limited to: i) meetings with individuals involved in the accounting of QAP activities; ii) in-depth interviews with appropriate staff; and iii) review of documents and appropriate reports.

The core evaluation team will identify the strong points of the QAP, as well as the constraints and areas for improvements. The core team will suggest several alternatives for each improvement that will be presented as detailed recommendations. Recommendations will be made in the context of the Zambian Health Sector Reform and, as such, will meet acceptability and feasibility criteria.

Appendix B: Protocols Developed by the Kabwe District Health Office

Standard Procedure for Screening a Patient at OPD

1. Ensure particulars of client are recorded, i.e. Full names and address.
2. Take down complaints and duration.
3. Ensure vital signs are taken.
4. Brief history of current illness.
5. Ensure findings of examinations are recorded.
6. Always indicate your diagnosis or provisional diagnosis if you are not sure.
7. If laboratory investigations are ordered ensure that the results are recorded on the card.
8. Prescribe rationally taking into consideration the illness, cost and efficacy of the drugs/s.

Standard Procedure for Admitting a Mother in Labour

1. Welcome the mother and make her comfortable.
2. HISTORY TAKING
Using MF110 (Labour Ward Admission Form) take and record the following:
 - Social History, e.g. name, address, age
 - Family History
 - Medical History (previous illnesses & operations).
 - Previous obstetric history.
 - History of Labour – Time of admission.

3. OBSERVATIONS

Observe and record the following:

- Temperature
- Blood Pressure
- Pulse
- Respiration
- Weight
- Urinalysis (protein Sugar, Ketons)

4. EXAMINATION

Physically examine the mother from head to toe and record the following:

Abdominal Exam	Vaginal Examination
HOF	Vulva
Lie	Vagina
Presentation	Cervix
Position	OS
Descent	Membranes
FHS	Presenting part
Contractions	Station

5. REFER to KGH if the following risk factors are observed:

- Poor obstetric history, e.g. three (3) or more consecutive abortions/still births.
- Very short stature (150 CM or below)
- Very young Maternal Age < 15 yrs.
- Elderly primigravida > 35 yrs.
- Grand multipara
- Pre-existing medical conditions e.g. Hypertension, cardiac Disease, Diabetes.
- Multiple Gestation
- Abnormal Lie
- History of difficult or prolonged labour
- Previous operative delivery

Standard Procedure for Referring a Mother in Labour

- Record all your findings
 - Vital signs
 - Abdominal
 - Vaginal Examination
- State reasons for referral
- Empty Bladder
- Commence I.V.I.
- Pre-parative Care i.e.
 - Catheter
 - Shaving
- Escort the patient to the hospital with all her records
- Properly hand over at the hospital
- Do not leave before handing over!

Appendix C: Examples of Supervision Checklists Used by Districts

Health Centre Supervision Checklist

1997

Date: _____ Health Centre _____
In - charge _____ Supervisors _____

Part I - Core Health Facility Activities

A. Facilities, grounds and buildings

Walk around the health centre with the in-charge and answer the following questions:

- Y N 1. Are the grounds around the health centre and staff houses free from waste?
- Y N 2. Is there a functioning and clean toilet for staff and patients at the facility?
- Y N 3. Is there adequate seating and space for waiting patients?
- Y N 4. Are all of the rooms in the health centre clean?
 floors swept
 trash put in trash boxes and not left out
- Y N 5. Are all linen materials which are in use and in storage clean?
- Y N 6. Is there an **ORT corner** fully functional with the following present—
 table, seating for mother and child
 potable water (_ if supply appears adequate)
 2 large cups (500 ml), 2 medium cups (250 ml)
 1 tablespoon (10 ml), 1 teaspoon (5 ml)
 ORS sachets (_ if supply appears adequate)
 the ORT register is complete
- Y N 7. Private consultation room for confidential counseling
(Family Planning, STDs, etc...) and private physical exam (gynae, STDs)

B. Records, Reports and Wall charts

- Y N 8. Is the following information displayed on wall charts or maps—
 map of health centre catchment area displaying—
 boundary of catchment area communities
 roads markets
 health centres NHMTs
 CHWs trained TBAs (Traditional Birth Attendants)
 rivers, springs and other major water sources

- vital statistics for the catchment area—
 - total population for current year under-fives
 - under-ones women of childbearing age
 - expected pregnancies in current year
 - immunization monitoring chart correctly filled in and up-to-date showing—
 - the number entered for measles vaccinations is the same as on the MF-47
 - the cumulative numbers are added correctly; and
 - the point is plotted correctly to correspond with the cumulative vaccinations
 - current estimate of measles vaccination coverage
 - Is the first-antenatal-attendance monitoring chart displayed, correctly filled in and up-to-date?
 - the number entered for first antenatal visits is the same as on the MF-47
 - the cumulative numbers are added correctly; and
 - the point is plotted correctly to correspond with the cumulative visits and the month
9. What is the current estimate of first antenatal attendance coverage for this area? ____%

Y N 10. Is there a copy of the MF-47 on file for last month, and has it been sent to the district?

C. Review of the Outpatient Register for the past month

- Y N 11. Is there a registration book in which diagnoses are listed?
If Yes —
 How many of the patients seen in the last month had more than one diagnosis written in the register? ____
 a.) of the last 10 cases of “diarrhea” or “gastroenteritis” or “A.G.E.”, how many were treated with ORS? ____
 b.) of the last 10 cases of upper respiratory tract infection (URTI) or cold/not pneumonia, how many were treated with antibiotics? ____

D. Review of the Antenatal Register for the past month

- Y N 12. Is the antenatal clinic register correctly filled in and up-to-date?
- Y N 13. Are there notations in the antenatal register for high-risk pregnancies, and are special follow-up activities specified for these women?
- Y N 14. Have the following antenatal services taken place in the past quarter?
 outreach antenatal clinics?
 community participation regarding maternal care and referral?
 community discussions on danger signs of pregnancy and delivery?
- Y N 15. Is there a register of RPR results for antenatal patients?

E. Review of the Tuberculosis Treatment Register for the past month

- Y N 16. Is the tuberculosis treatment register correctly filled in?
Note: Answer “No”, if data missing or incorrect. Explanations should be given for missing data.
17. How many TB patients have defaulted in the past 3 months? _____
- Y N 18. Do records reflect that defaulters were visited at home?

-
19. How many sputum positive reports at two months were not followed up?_____ (number)
20. Number of new patients started on treatment in the previous 3 months? _____
21. Number of patients completing treatment in past 3 months? _____
22. Number of TB patients not responding to treatment referred to the district? _____
23. How many patients are receiving DOTS treatment? _____

F. Financial

24. How much money did you collect from user fees, since the last supervision visit?_____
- Y N* 25. Is there a financial committee that monitors expenditures and are minutes of meetings available?
- Y N* 26. Does the total amount of money collected on user fees last month correspond with the total amount of the receipts in the receipt book?
- Y N* 27. Is the cash from user fees for last month available or if it was collected, can it be confirmed by the District Accountant that it has been banked?
- Y N* 28. Does the number of receipts issued last month for user fees match with the number of user fee paying patients according to the outpatient (+/- inpatient) register(s)?
- Y N* 29. Does the staff know which patients are exempted from paying user fees?
- Children under 6 years and patients above 65 years
 - Treatment for chronic diseases like TB, diabetes, hypertension
 - STD, antenatal and other MCH services
 - If patients have truly no means to pay (approved by the Dept. of social welfare)

G. Services provided

- Y N* 30. Are the following services available more than once weekly? (Supermarket)
- childhood immunization
 - antenatal care
 - family planning
- Y N* 31. Is there a UCI outreach programme? If yes, how many times last month? _____
How many sites last month? _____
- Y N* 32. Is there an AIDS home-based care programme functioning?
- If Yes—* how many patients are presently receiving treatment? _____
- records complete
- What supplies are being distributed in past month days?

H. Personnel

33. How many staff and of which cadre are working at the health centre?
- | | |
|-----------------------------|-------------------------------------|
| ___ Doctor | ___ Environmental Health Technician |
| ___ Clinical Officer | ___ Laboratory Technician |
| ___ Registered nurse | ___ Classified Daily Employee |
| ___ Enrolled nurse | ___ other: _____ |
| ___ Community Health Worker | ___ other: _____ |

Y N 34. Was there a staff meeting held last month? *Note: To answer "Yes" there must be minutes of the meeting, including names of the participants*

Y N 35. Were there other health facility committees which met in the past 3 months?
Specify which (housing, drugs & therapeutics, discipline etc) and verify minutes

I. Equipment, Supplies and Stationary

Y N 36. Are each of the following items of equipment present and in working order?

<input type="checkbox"/> salter scale/weighing bag	<input type="checkbox"/> steam steriliser
<input type="checkbox"/> adult scale	<input type="checkbox"/> steriliser stove
<input type="checkbox"/> blood pressure cuff	<input type="checkbox"/> measuring tape (for measuring fundal height)
<input type="checkbox"/> clinical thermometer	<input type="checkbox"/> vaccine carrier
<input type="checkbox"/> foetal stethoscope	<input type="checkbox"/> ice packs
<input type="checkbox"/> stethoscope	<input type="checkbox"/> wash stand and basin
<input type="checkbox"/> timer for health worker seeing children	<input type="checkbox"/> vaginal speculum

Y N 37. Is there a dental tray present?

Y N 38. Are supplies of the following available in adequate quantities?

<input type="checkbox"/> water for washing hands	<input type="checkbox"/> sterile syringes (1 mo supply)
<input type="checkbox"/> potable water	<input type="checkbox"/> sterile needles (1 mo supply)
<input type="checkbox"/> soap for washing hands	<input type="checkbox"/> cotton wool
<input type="checkbox"/> fuel for steriliser stove	<input type="checkbox"/> IUD kits

Y N 39. Are adequate supplies of the following forms/stationary available?

<input type="checkbox"/> outpatient register	<input type="checkbox"/> Children's clinic cards
<input type="checkbox"/> tally forms for UCI	<input type="checkbox"/> ante natal cards
<input type="checkbox"/> MF-47	<input type="checkbox"/> EDP report forms
<input type="checkbox"/> Notifiable disease report form	<input type="checkbox"/> blank stock cards
<input type="checkbox"/> receipt books	<input type="checkbox"/> TB cards
<input type="checkbox"/> OPD cards/record books	

Y N 40. Are laboratory services available?
If Yes — is the following equipment available?

<input type="checkbox"/> microscope	<input type="checkbox"/> haemoglobinometer
<input type="checkbox"/> centrifuge	<input type="checkbox"/> reagents for blood films (1 mo supply)
<input type="checkbox"/> cell counter	<input type="checkbox"/> urine dipsticks (1 mo supply)
<input type="checkbox"/> glass microscope slides (1 mo supply)	

J. Vaccine Supply and Cold Storage

Y N 41. Has the vaccine refrigerator maintained an acceptable temperature, and is its present temperature between 0°C and 8°C?

Y N 42. Has the refrigerator temperature chart been filled out twice daily for the past month?

43. For how many days in the last 3 months does the stock books show each of these vaccines out-of-stock?
Measles: ___ days; DPT: ___ days; Polio: ___ days; BCG: ___ days; TT: ___ days
 Vaccine stock book not current

Y N 44. Is a 2 week supply of fuel available?

11. Is there a vaccine stock book?

K. DRUGS AND CONTRACEPTIVES

45.	stock card present	recorded = actual	days o/s last month
Child health/Malaria	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	___ days
Chloroquine tabs	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	___ days
Cotrimoxazole tabs	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	___ days
ORS sachets	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	___ days
Pyrimethamine-sulfa tabs	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	___ days
Vitamin A capsules/tabs	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	___ days
Maternal health/Family Planning			
Methylergotamine injection	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	___ days
Condom	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	___ days
Contraceptive pill	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	___ days
Depoprovera	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	___ days
STDs/Tuberculosis			
Benzathine penicillin	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	___ days
Ethambutol tabs	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	___ days
1 mo supply	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Isoniazid + Ethambutol tabs	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	___ days
1 mo supply	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Pyrazinamide	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	___ days
1 mo supply	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Rifina	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	___ days
1 mo supply	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Other			
IV Fluids and giving sets	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	___ days
Ferrous Sulphate	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	___ days
Folate	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	___ days

Y N 46. If there is a maternity facility, the following drugs, at a minimum, will be present in adequate amounts for the deliveries which occur in this unit—

- | | |
|--|--|
| <input type="checkbox"/> gentamicin | <input type="checkbox"/> Vitamin A |
| <input type="checkbox"/> procaine penicillin | <input type="checkbox"/> tetracycline ointment |
| <input type="checkbox"/> anticonvulsants | <input type="checkbox"/> lidocaine 2% |
| <input type="checkbox"/> antihypertensives | <input type="checkbox"/> amoxicillin |
| <input type="checkbox"/> BCG | <input type="checkbox"/> ampicillin injectable |
| <input type="checkbox"/> mebendazole | |

Y N 47. Are drugs handled in an appropriate manner?

- How are new drugs stocked when they arrive? (_ for: stock rotation)
- What do you do with expired drugs? (_ for: return to district)
- Are there any drugs on the floor? (_ for: none)

L. MALARIA/CHILD HEALTH
(including UCI, diarrhea, pneumonia, nutrition and malaria)

48. Observation of Assessment of the Sick Child 2 Months to 5 Years

Health Worker's Name _____ CO ZEN EHT RN MD CDE
 Health Worker trained with 11 day MCI course Yes No Age of child: ___ months

Does the health worker greet the mother?

Does the health work ask about or does the mother volunteer—
 Does the health worker examine for—

Danger signs

<input type="checkbox"/> not able to drink or breast feed?	<input type="checkbox"/> convulsions?
<input type="checkbox"/> vomits everything?	<input type="checkbox"/> lethargy or unconsciousness?

Cough or difficulty breathing

<input type="checkbox"/> for how many days?	<input type="checkbox"/> count breaths?
<input type="checkbox"/> raise the shirt?	<input type="checkbox"/> look for chest indrawing?

Diarrhoea

<input type="checkbox"/> for how many days?	<input type="checkbox"/> offer fluid or observe breastfeeding?
<input type="checkbox"/> is there blood in the stool?	<input type="checkbox"/> skin pinch of the abdomen?

Fever in the past 24 hours

<input type="checkbox"/> for how many days?	<input type="checkbox"/> examine for stiff neck?
<input type="checkbox"/> has Chloroquine been given at home for this illness?	

Immunization

<input type="checkbox"/> ask to see immunization care?	<input type="checkbox"/> due for vitamin A?
--	---

Feeding (if under 2 yrs or very low weight)

<input type="checkbox"/> do you breastfeed your child?	<input type="checkbox"/> does the child take any other food?
<input type="checkbox"/> if yes, how many times in 24hrs?	<input type="checkbox"/> if yes, what foods or fluids?
	<input type="checkbox"/> how many feedings per day?

49. Observation of Treatment and Counseling — 2 Months to 5 Years

Drugs prescribed	Does health worker correctly explain—		
_____	<input type="checkbox"/> Dose	<input type="checkbox"/> Frequency	<input type="checkbox"/> Duration
_____	<input type="checkbox"/> Dose	<input type="checkbox"/> Frequency	<input type="checkbox"/> Duration
_____	<input type="checkbox"/> Dose	<input type="checkbox"/> Frequency	<input type="checkbox"/> Duration
_____	<input type="checkbox"/> Dose	<input type="checkbox"/> Frequency	<input type="checkbox"/> Duration

Y N 50. Does a health worker ask any open-ended questions to determine whether the mother understands how to give the medicines prescribed?

-
- Y N** 51. Does the health worker advise—
- Increase the frequency of meals or breastfeeding
 - Reduce or stop other foods other than breastmilk
 - Begin or increase the frequency of complementary foods
 - Give food that is thicker or enriched (e.g. with sugar, oil, ...)
- Y N** 52. Does the health worker advise on when to bring the child again?
- Y N** 53. Does the health worker advise mother to return with child immediately for:
- Develops a fever or fever does not go away
 - Drinking poorly (if child has had diarrhoea)
 - Blood in the stool (if child has had diarrhoea)
 - Breathing fast or difficult (if child has been coughing)
 - Child becomes worse for any reason

Part II Specialised Health Centre Activities

M. Community Partnership/Health Communication

54. How many NHCs are in the catchment area of this health centre? ____
and how many are active? ____
- Y N** 55. Was there a meeting with all the NHMCs in the catchment area last month?
- if yes are there minutes available
 - if no, why did meeting not take place?
56. Describe one activity carried out by/with NHCs in the last quarter:
-
57. What is the total number of CHWs (active and inactive) in the catchment area? ____
How many of these are active? ____
58. How many CHWs submitted any reports in the last 3 months? ____
Note: confirm that reports are on file
- Y N** 59. Was each active CHW supported at least once in the last quarter?
Note: To answer, "Yes", there must be a report of the support visit.
60. What is the total number of active trained TBAs in the catchment area? ____
61. How many active trained TBAs submitted any reports in the last 3 months? ____
Note: Confirm that reports are on file
- Y N** 62. Was each active trained TBA supported at least once in the last quarter?
Note: To answer, "Yes", there must be a report of the support visit.
63. Approximately how many times did staff spend outside the health centre in the last month providing outreach services on one of the 6 health thrusts? ____ times

64. How many different sites did staff visit outside the health centre in the last month to provide outreach services on one of the 6 health thrusts? _____

Note: ask about which sites were visited and which community groups participated

65. What development NGOs are functioning in the catchment area, and what programmes are they undertaking?

66. What activities are being conducted by the health centre in conjunction with NGOs?

N. ENVIRONMENTAL HEALTH

Sanitation and waste management

Y N 67. Does the health worker know—

- the population of the catchment area?
- the number of households in the catchment area?
- the average number of persons per household?
- how many households have pit or VIP latrines?
- how many households have flush toilets? (where applicable)
- how many house holds have refuse pits?

Y N 68. Are there promotional programmes underway on excreta disposal in this area?

Y N 69. Does the health worker maintain statistics on faecal borne diseases in this area?

70. How many new pit latrines have been constructed in the past quarter?

71. How many health education meeting on hygiene has he held in the past month?
_____ (check diary for number)

Y N 72. Is there uncollected or undisposed waste lying around the area?

- if Yes, has the health worker suggested any alternative methods of disposal to the community?
(_ if yes)
- if Yes, what is this alternative?

Y N 73. Is the excreta and waste disposal system at the health centre adequate and safe?

Y N 74. Is there a malaria control programme being conducted?

If Yes, what is included in the programme?

75. How many visits to the community has the health worker conducted in the past month in conjunction with a community representative to check on sanitation issues? _____

Water

Y N 76. Does the health worker know—

- the number of households served by protected wells or boreholes?
- the number of households served by communal taps?
- the number of households with mains water connections?
- the number of villages with protected wells or boreholes?
- how many villages are within 0.5 km of a protected water source?

-
- Y N* 77. Does the health centre have a stock of water treatment chemicals for emergencies?
- Y N* 78. Does the health worker regularly check the chlorine level of the water supply to the health centre (check his or her record book)?
79. How many NGOs or cooperating agencies have water activities in this area? _____
- Y N* 80. If these are present, does the health worker attend their meetings? (check diary)
- Y N* 81. Is the health worker using any IEC materials to protection of water sources?
- Y N* 82. Has the health worker conducted any meetings about water supply sources with communities without protected sources? (Check the diary)
83. How many water sources has the health worker inspected in the preceding quarter about which he or she has written a report? _____

O. OBSERVATION OF FAMILY PLANNING SERVICE DELIVERY

- Y N* 84. Did the health worker display the following actions
- greeted the patient in a friendly manner
 - encouraged questions
 - ensured privacy
 - provided a health talk about family planning
 - carried out screening or management of STDs
- Y N* 85. Were the following clinical procedures carried out?
- TT status checked
 - if needed TT given
 - blood pressure checked
 - patient checked for anaemia
 - legs checked for oedema or varicose veins
 - weight checked
 - abdomen palpated
 - RPR done during this pregnancy

P. HEALTH CENTRES WITH A MATERNITY FACILITY

General observation

- Y N* 86. Does the facility have the following—
- delivery room
 - telephone or radio in working condition
 - transport facilities for patients (where applicable)
 - adequate light (hurricane light minimum)
- Y N* 87. Did this health centre maintain the following records for recent deliveries—
- partograms filled in properly
 - blood pressure checked and recorder four-hourly
 - foetal heartbeat checked hourly
 - vaginal examination done four-hourly

Supplies and equipment for maternity and postnatal services

- Y N** 88. The following delivery equipment is present
- | | |
|--|--|
| <input type="checkbox"/> chitile forceps | <input type="checkbox"/> infant laryngoscope |
| <input type="checkbox"/> episiotomy scissors | <input type="checkbox"/> bag & mask for neonatal resuscitation |
| <input type="checkbox"/> suture needles | <input type="checkbox"/> neonatal mucus extractor |
| <input type="checkbox"/> needle holder | <input type="checkbox"/> clinical thermometer |
| <input type="checkbox"/> artery forceps | <input type="checkbox"/> tooth forked forceps |
| <input type="checkbox"/> cord scissors | <input type="checkbox"/> incinerator |
| <input type="checkbox"/> ring (sponge) forceps | |

- Y N** 89. The following consumables are present in adequate amounts for the deliveries which occur in this unit—
- | | |
|--|---|
| <input type="checkbox"/> linen/cloth to dry the baby | <input type="checkbox"/> IV giving sets |
| <input type="checkbox"/> gauze/cotton wool | <input type="checkbox"/> disinfectant |
| <input type="checkbox"/> plastic sheeting | <input type="checkbox"/> partograph forms |
| <input type="checkbox"/> cord clamps/ties | <input type="checkbox"/> syringes |
| <input type="checkbox"/> suture material | <input type="checkbox"/> needles |
| <input type="checkbox"/> maternity pads | <input type="checkbox"/> gloves |

Observation of services in a postnatal clinic

- Y N** 90. The following activities were carried out by the health worker—
- checked the date of delivery by card and by asking the mother
 - verified how many postnatal visits had been made after this delivery
 - carried out a physical examination on the mother including—
 - abdomen
 - eyes/tongue
 - vagina
 - breasts
 - blood pressure
 - examined the baby for any abnormalities, colour, weight, activity
- Y N** 91. The following health education was provided to the mother—
- family planning
 - immunization
 - breast feeding
 - growth monitoring

Ask yourself the following questions:¹

A. ORGANIZATION

1. Is there a map of the catchment area that shows all the information that exists in the catchment area?
 - Roads
 - Villages
 - Sub-Catchment Boundaries
 - Markets and Stores
 - Schools
 - Churches
 - Rural Health Center
 - Health Posts
 - Catchment Area Boundary
 - Water Source
 - Lake
 - Streams
 - Springs
 - UnPro Wells
 - Protected Wells
 - Fishing Camps
 - Agriculture Extension Units
 - Graveyards
 - Population distribution
2. Is there a “schedule of activities” for last month?
*Review it before you mark “yes”.
3. Was there a staff meeting held last month?
*To answer “yes” there must be minutes of the meeting which include the names of participants.
4. Was there a meeting with all the TBAs/CHWs in the catchment area last month and health neighborhoods.
*To answer “yes” there must be minutes of the meeting which include the names of the participants.
5. Is there a copy of MF 47 on file for the last month?
*See the copy.
6. Is there a working:
 - Refrigerator
 - Clean
 - Water bottles for temperature
 - Maintenance
7. Is the fridge temperature being maintained?
Charting of freezer temperature twice a day.
 - Between 0 – 20° C
 - Cold space temperature between 0 - 8° C
9. Do you have enough vaccines in stock?
 - BCG
 - DPT
 - POLIO
 - MEASLES
10. Are the vaccines valid?
Any expired vaccine in stock?
11. Is there a vaccine stock book?
Do you have a vaccine stock record usage for the past week?
12. Is there a constant supply of electricity?

¹ This second example of supervision checklists was untitled.

-
13. Was the longitudinal Immunization Register used last month?
*See the dates-of-immunization in the Register.
14. Are the data in the Immunization Register for last month the same as the numbers recorded in the immunization section of MF 47?
*Select one dose of any vaccine given to children <1 and check each page of the Register in the column for that dose. Add up all immunizations given for that dose during the previous month. If the number recorded on MF 47 for the last month is the same as your calculate number, mark “yes”. If the number is different or if the Register is not used or if there is no copy of MF47 available, mark “no.”
15. Is the immunization monitoring chart filled out correctly for last month?
*Study the “immunization monitoring chart” to see if:
- The numbers entered for BCG and Measles are the same as the number of children <1 on the copy of MF 47 for last month;
 - The cumulative numbers for each are added correctly;
 - The points are plotted correctly for the cumulative number and lines drawn connecting the points.
- *If all three steps are correct, mark “yes” and review coverage status.

B. NUTRITION PROGRAMME

16. Was Vitamin A given out last month to all eligible children and seriously ill patients according to the Vitamin A Schedule?
*See the vitamin A column in the Immunization Register and the “Treatment” column of the OPD Register and compare entries to the instruction on the Vitamin A schedule.
17. Was growth monitoring conducted weekly during last month for “at-risk” children <5 years of age?
*See the dates in the Weekly Growth Monitoring Register.
18. Were any “at-risk” children <3 years of age followed-up at home last month for nutritional counseling?
*See the “Home Visit” Register. If any home visits were made to children <1 and nutrition subjects were discussed as noted in the “Remarks” section, mark “yes.” If there is no Home Visit Register or no visits noted for children <1 or no nutritional counseling noted, mark “no.”
19. Does the data on MF 47 for last month correspond to the data in the longitudinal (monthly) Growth Monitoring Register?
*Compare a few data sets – if even one set does not correspond, the answer is “no.”

C. CONTROL OF DIARRHOEAL DISEASES

20. Is there an ORT Corner ready for service?
*To mark “yes” all the following must be present on a table/shelf ready for use:
- One (1) Litre of clean/safe water (covered)
 - Two (2) cups (500 ml)
 - Two (2) Cups (250 ml)
 - One (1) Tablespoon (10 ml)
 - One (1) Teaspoon (5 ml)
 - Fifty (50) sachets of ORS
21. Are there at least 100 sachets in stock?
*Count them.
22. Are the data on diarrhoeal disease on MF 47 for last month the same as in the OPD Register?
*Count and compare cases <5 years of age.

D. ENVIRONMENTAL HEALTH (EH)

23. Was a “Village Inspection” carried out last month?
*See EH records, registers, reports, etc.
24. Were all appropriate columns in the Village Inspection Register completely filled out for last month?
25. Is the information in the EH Register for last month the same as the data in the EH Report?
26. Was an Iodine Test for household salt carried out last month?

E. TUBERCULOSIS/LEPROSY

27. Is there a TB Register in use that lists the patients currently under treatment?
*NOTE: Remember, it is important that the Leprosy Register and reports are reviewed right after the TB data is reviewed. Although the “yes” and “no” answers refer specifically to TB programme activities, Leprosy programme activities must also be reviewed.
28. Is there a copy of last months TB Report on file?
29. Does the data in the report for last month correspond to the information in the TB Register?
*Compare a few data sets – if even one set does not correspond, the answer is “no”.
30. Is there at least a one month supply of drugs available for each registered patient?
*Calculate a one month supply of drugs by multiplying the number of registered TB patients by:
- Ethambutol 400 mg (60 tablets)
 - Isoniazid 300 mg (30 tablets)
- *If there are no patients registered, mark “yes.”

F. MALARIA PROGRAMME

31. Is the number of malaria cases recorded on the MF 47 for last month the same as the number of cases recorded in the OPD Register?
*Add up either new attendances <5 or >5 in the OPD Register and compare with the figure reported on MF 47 last month.

G. MENTAL HEALTH

32. Is there a register available in which all mental health cases and referrals are recorded?
*What was the date of the last case: _____
33. Is there at least a one month supply of Phenobarbitol in stock for each registered case of epilepsy?
*To answer this question note the number of cases registered and calculate stock required:
-30 mg TDS x 30 = 90 (30 mg) tabs. per month (x) number of patients =

H. MATERNAL HEALTH

34. Was an antenatal clinic held last week?
*Verify by any record, tall sheet, etc.
35. Was each appropriate column in the Antenatal Register completely filled out for each antenatal visit last week?
*Review selected entries in the Register for last week.

-
36. Were “at risk” pregnant women correctly identified in the Antenatal Register during the first antenatal visit last month?
*Review the _____ “at risk condition” columns. If any conditions are ticked, note whether the last “At Risk: Yes/No” column is filled and special follow-up activities are noted.
37. Is a “yes” or “no” recorded for each new antenatal visit last month in the “Suspected STD” column of the Antenatal Register (and referral noted if “yes”)?
38. Does the data in the Antenatal section of MF 47 for last month correspond to the information in the Antenatal Register?
*Compare a few data sets – if even one set does not correspond, the answer is “no.”
39. Is the “First Antenatal Visit” monitoring chart filled out correctly for last month?
*Study the “Antenatal Visit Monitoring Chart” to see if:
- The number entered for first antenatal visits are the same as the numbers on the copy of MF 47 for last month;
 - The cumulative numbers are added correctly;
 - The point is plotted correctly for the cumulative number and the line drawn connecting the point.
- *If all three steps are correct, mark “yes” and review first-antenatal-visit coverage status.

I. DELIVERIES AND POSTNATAL CARE

40. Were the weights of all live births recorded in the Delivery Register for last month?
*If even one weight was not recorded in the Register, mark “no.”
41. Is the information on deliveries recorded on MF 47 for last month the same as the data in the Delivery Register?
*Compare a few data sets – if even one set does not correspond, the answer is “no.”
42. Was Tetracycline Eye Ointment put in the eyes of all newborns delivered in the health facility last month?
*Review the Delivery Register for last month.

Appendix D: Guides for Interviews Conducted by the Evaluation Team

QUESTIONS TO BE ASKED AND ISSUES TO BE ADDRESSED BY THE STANDARDS SUBTEAM

The purpose of the evaluation will be presented and the concept of standards will be explained. We will reinforce the fact that standards have to be developed, communicated, and accepted by the users. We will look at the documents on standards of care (clinical guidelines) as well as the management standards (standard operating procedures). We will identify the documents that present results of surveys aimed at measuring performance. We will try to present the results in a table. If possible, we will try to link the measurement of performance with problem solving activities (i.e., did a problem solving methodology lead to an improvement in performance and was poor performance identified as a problem?). We will look at the integrated guidelines for frontline health workers and will try to make a judgement on their scientific validity, reliability, feasibility and clarity according to the users' perspectives. We will ask health managers and health workers to look at their measure of performance over time and try to interpret a change in performance.

Date: _____
Region: _____
District: _____
Structure: _____
Persons met (Name and function): _____

Questionnaire # _____

The Development and Adaptation of Standards

Questions for the Central Level

- How are clinical standards of care developed or adapted in Zambia? (The integrated guidelines, the IMCI, etc.)
- Are you using evidence-based medicine to develop national standards?
- Who was involved in developing standards?
- Are the users involved in the development/adaptation process?
- Is there an official policy that defines the process to develop standards?
- How are standards for management of health services developed?
- What are the problems/constraints you encountered with the development/adaptation of both types of standards?
- How best would you address these problems?

-
- Which resources were used and how much was spent to develop/adapt the standards?
 - How are clinical standards revised/updated?
 - Is there a policy that describes the process to revise standards?
 - In which documents are the official standards of care and SOP presented?
 - Are standards developed from a patient perspective? (patient's charters, patients rights)

Questions for regional and peripheral levels

- What would be your definition of a standard?
- Have you been involved in the development and/or adaptation of clinical standards of care? If yes, what exactly did you do?
- Have you been trained in developing standards? If yes, did you use your skills?
- Which problems did you encounter?
- How best would you address them?
- What documents on standards for clinical care do you know?
- Do you have these documents (clinical guidelines, standards operating procedures)?
- How do you use them? How helpful are they? Clear? Feasible? Do you agree with them?

1. The Communication of Standards

Questions for the central level

- What is the role of the regulatory bodies and clinical associations in the communication of standards?
- What is the cost of disseminating the standards? (IMCI)
- How did you communicate/disseminate the different types of standards to the health providers and managers?
- Is there an official strategy for disseminating standards?

Questions for the providers and managers

- How did you learn about the standards?
- Are you regularly reminded of the standards? Through which mechanisms?

2. The Measurement of the Compliance with Standards of Care at Health Facility Level

Questions for health managers

- Is measurement of performance someone's full time job?
- Who is in charge of it?
- Which mechanism(s) did you set up to measure performance of health workers?
- Which standards do you use? Do you measure compliance with standards?
- Which instrument/tool do you use to measure compliance with standards?
- What are the indicators of performance that you collect?

-
- How do you use the performance results?
 - Are there any rewards for good performance and sanctions for poor performance?
 - When performance is not satisfactory, what do you do to understand the underlying reasons?
 - Do you measure competence?
 - How is feedback on performance given to health providers?
 - How often do you monitor performance?
 - Do you focus more on low performers?
 - Do you share performance results among health workers/facilities?
 - Which problems/constraints do you encounter to measure performance?
 - How would you best address these problems?
 - What is the cost of measuring performance?

Questions for health providers

- How is your performance assessed and by who?
- Do you measure your own performance?
- How do you measure your own performance?
- What are the benefits of knowing your performance?
- Did measuring your performance help you to improve your practice?
- What are the consequences of poor performance?
- What is your incentive to improve your performance?
- Which changes would you suggest to measure your performance?

**QUESTIONS TO BE ASKED AND ISSUES TO BE ADDRESSED
BY THE PROBLEM SOLVING SUBTEAM**

Semi-structured questionnaire with team evaluation and “difficulty index”

Part 1: Basic information about training and teams in the district for interviewing coaches, link-facilitators, or district officers

In the district, how many people have been trained in quality assurance and how long was the training and what did it cover?

Coach training. Then what training did they do, of whom, and how long, covering what?

How many problem-solving teams have been formed in the district?

How many really followed the 5 step cycle and used the methods properly?

<u>Where</u>	<u>Staff at centre total No.</u>	<u>Staff in team No.</u>	<u>Coach in team (Y/N) and O in C Y/N)</u>
1) _____			Coach? Y/N. O in C Y/N?
2) _____			Coach? Y/N. O in C Y/N?

Other teams, Etc.

<u>When did the team start meeting?</u>	<u>Stop actively meeting?</u>
1) _____	
2) _____	

<u>Did any teams finish their first problem.</u>	<u>Which teams finished a second cycle?</u>
1) _____	
2) _____	

Did any do more cycles?

How many are active now – when and where?

What were the type and relevance of the problems identified by the teams?

<u>Health centre</u>	<u>Title of problem</u>	<u>Problem significance</u>	<u>Problem appropriateness for a team and 5 step cycle (Time taken to complete the cycle)</u>
1) _____			
2) _____			

Part 2: Quality problem-solving teams – facility visit

<u>Facility Name:</u>	<u>Informant (s): (coach or trainer (primary informant))</u>
1) _____	
2) _____	

Documentation on the teams work available?: None, Notes (partial, complete), QA storybook.

Question informant at the facility to validate the information given by the coach about:

Staff at centre total No. Staff in team No. Coach in team (Y/N and O in C?)

Training in quality the coach/trainer and others have had:

14 day, QPST 5 day, QPST 3 day Other

Subjects of training:

The month/year the team start meeting m/y stopped actively meeting Finished the full 5 step cycle? Y/N
(Verification e.g., Check documentation)

What were the type and relevance of the problems identified by the team

Title of problem Problem significance (0-5) Problem appropriateness for a team & 5 step cycle 0-5
(Time taken to complete the cycle)

How were the different steps of the problem solving cycle carried out and were the methods chosen and used correctly?

Step and methods	<i>Rating & Justification for rating</i>
Step 1 Identifying the problem 1) Listing 2) Prioritising matrix and vote using criteria	
Step 2 Problem statement 3) Precision, measures, target specified	
Step 3 Identifying who needs to work on the problem 4) Were the right people on the team, or involved in other ways to analyse, collect data and solve the problem? (e.g., <i>Who should have been involved, were people added to the team, were others involved (e.g., community?)</i>)	
Step 4 Analysing and studying the problem to identify major causes 5) Bubble or other <u>cause</u> effect diagram 6) Listing of possible causes 7) Creation of data matrix with data gathering questions, sources and methods. 8) Data gathered and recorded (quantitative or qualitative) 9) Validity and reliability of data for answering the problem (e.g., sample for interviews, or trending quantitative data, or validity of statistics)	

Step and methods	Rating & Justification for rating
10) Data analysis and interpretation 11) Use of data to determine root cause	
Step 5 Developing and choosing solutions 12) A <u>list</u> of possible solutions 13) Link between solutions and Step 8 (especially 8), 10) and 11))(how well does the list relate to the data and determination of root cause) 14) Choice of solution – what was the method to choose, and how good was the choice?	
Step 6 Implementation evaluation of QI work 15) How well was the solution implemented? (Plan and persistence) 16) Were data gathered again to check the effects of the solution? 17) What difference did the solution make and to whom (successful (data or judgement?) 18) How well the team followed up 6m/12m later or kept monitoring?	
Total Score	_____ % (Out of 90)

Which problems did the team meet in defining and analysing the problems and in identifying and implementing solutions?

Step and methods – what were the difficulties?	Difficulties experienced (0-5) and comments
Step 1 Identifying the problem 1) Difficulties in listing problems 2) Difficulties in using a prioritising matrix and in voting using criteria	
Step 2 Problem statement Difficulties in formulating a precise statement with measures and a target specified.	
Step 3 Identifying who needs to work on the problem 4) Difficulties choosing and getting the right people on the team, or involved	
Step 4 Analysing and studying the problem to identify major causes 5) Difficulties making a bubble or other <u>cause</u> effect diagram 6) Difficulties in listing possible causes 7) Difficulties in creating a data matrix, with data gathering questions, sources and methods.	

Step and methods – what were the difficulties?	<i>Difficulties experienced (0-5) and comments</i>
8) Difficulties in gathering and recording data 9) Difficulties in getting valid and reliable data to answer the problem (e.g., sample for interviews, or trending quantitative data, or validity of statistics) 10) Difficulties in data analysis and interpretation 11) Difficulties using data to determine root cause	
Step 5 Developing and choosing solutions 12) Difficulties listing possible solutions 13) Difficulties making a link between solutions and the last step 4 (especially sub-steps 8, 10 and 11) (how well does this list relate to the data and determination of root cause?) 14) Difficulties choosing a solution – what was the method to choose, and how good was the choice?	
Step 6 Implementation and evaluation of QI work 15) Difficulties in implementing the solution? (Plan and persistence) 16) Difficulties gathering data again to check the effects of the solution? 17) Difficulties following up 6m/12m later or continuing monitoring?	
Total “Difficulty index”	DI = _____ % (out of 95)

How well did the teams perform in gathering and using data?

Refer to the assessment above:

1. Did they collect data?
2. Data gathered before their intervention?
3. Data gathered again after their intervention?
4. Data gathering method or source validity and reliability for the problem? (other sources/methods better?)
5. Data analysis and graphing?

Strong points? Weaknesses?

What was the level of competence of staff in choosing and using problem solving methods?

- Make a general assessment how well the team performed in choosing and using the methods (0-5).
- Why would you give the score you have given – what did they not do or do, or do well which justified this score?
- What would help improve their competence in choosing and using the methods and following the steps?

What were the results and progress of the team according to their self-monitoring?

Any measured changes to quality after solution implementation:(the difference and for whom)?

If not, did members of the team or others notice changes to quality? What changed?

How could they convince others that this was due to the quality work of the team and not to something else?

Were there any indirect benefits of the teams work and their meeting together?

What was the average duration of the problem solving cycle and how could it be shortened?

Note how long each cycle took :

1st cycle from to length: 3rd cycle from to length:

2nd cycle from to length: 4th cycle from to length:

How could the time be shortened?

How cost-effective was the team?

Try to make an assessment of the value of the benefits, for the costs (mainly in staff time).

Could this time have been used to better effect (opportunity cost)?

Resources used

What were the amount of resources needed for the work of the problem-solving team (time mainly)?

Problem 1: How many team members _____ How many meetings to solve the problem _____
How long was each meeting on average _____ Total time in person hours: _____

Problem 2: How many team members _____ How many meetings to solve the problem _____
How long was each meeting on average _____ Total time in person hours: _____

Problem 3: How many team members _____ How many meetings to solve the problem _____
How long was each meeting on average _____ Total time in person hours: _____

Problem 4: How many team members _____ How many meetings to solve the problem _____
How long was each meeting on average _____ Total time in person hours: _____

Benefits

For patients

For neighbourhoods

For staff

Indirect benefits

Ratio of resources/costs to benefits

Why do you think teams were not formed in some places, or did not finish their work?

- Why do you think they did not form after people have been trained? Who was trained? Will a team form if an Officer in Charge is not trained? How much training?
- Why do you think they did not finish the first problem cycle?
- Why do you think they did not start a second problem-cycle?

What predicts the success or failure of a Quality problem-solving team?

In your view, which of these are the most important for ensuring the team follows the steps, finishes a problem gets results, and goes on to other problems:

- Coach in team? Y/N or visiting regularly? (how many times and duration between visits)
- Facility No of staff (at any time less than ten?)
- Team size – numbers?
- How many staff left the team?
- Frequency of meetings (any long breaks?)
- Officer in Charge on the team? Supportive but not on team?
- Problem statement poor or too complex?
- Diverging from the steps inappropriately?
- What training did the team leader have? (Length and content)
- Other member’s training?
- De-linking?
- Other?

What was good and bad about the team and its work?

How could the work of the team be improved?

Lessons and advice for others?

Do’s and don’ts?

What should we recommend which would help you most in your QI work?

Risk of Team Failure Index and Scoring Method

1: Risk of failing to form a team

Factors and conditions predicting no team formation	Risk of Failure Score
There are less than ten staff at the facility, and the team has not been a coach training site.	(<10= score 10 (10-25, score 4, 25-50 score 1, over 50 score 0)
There is no coach in the team, or their visits are over one month in frequency.	(no coach, score 5, visits over 1 month score 4, visits for every meeting, score 1; coach in team, score 0)
The officer in charge does not have training, is not in the team, or where the o in c does not actively support the team’s work	(No officer in charge in team score 4, no active support score 5)
There are less than 4 people in the team	(less than 4 score 5; 4 score 4; 5 score 3; 6 score 2; 7 score 1; and 8 score 0)
There is less than 5 person days training represented in the team (e.g., one person with 5 days or over training, or five people with one days training)	(less than 5 days score 5; 5-7 person days score 3, 10 or over person days score 0)
There is poor morale (e.g., connected with de-linking) or a culture that does not value professionalism	(Poor morale and unprofessional culture as judged by experienced clinician visitor, score 5; good morale and professionalism, score 0)

2: Risk of not successfully completed a first problem cycle

Factors predicting failure to finish the first cycle	Risk of Failure Score
50% of team members leave during a year	(50% and over score 5)
Meetings are less frequent than once a month and there are no gaps of longer than two months between meetings	(Less frequent than one month, score 5, monthly score 3, twice weekly score 1, weekly score 0)
The team chooses a problem which is broad or complex for a first problem, or does not precisely define its problem statement, or works on more than one problem at a time	(If so, score 5)
The team chooses and works on a simple problem that does not need a full 5 step cycle.	(If so, score 5)
The team spends more than four months on one step or had not followed the steps of the cycle when it is appropriate to do so.	(If so, score 5)
<i>And in addition, the earlier factors:</i>	
There are less than ten staff at the facility, and the team has not been a coach training site.	(<10= score 10 (10-25, score 4, 25-50 score 1, over 50 score 0)
There is no coach in the team, or their visits are over one month frequency	(no coach, score 5, visits over 1 month score 4, visits for every meeting, score 1; coach in team, score 0)
The officer in charge does not have training, is not in the team, or where the officer in charge does not actively support the team's work	(No officer in charge in team score 4, no active support score 5)
There are less than 4 people in the team	(less than 4 score 5; 4 score 4; 5 score 3; 6 score 2; 7 score 1; and 8 score 0)
Over 50% of the team have left and there has not been retraining, or coach visit-training.	(over 50% left score 5)
There is less than 5 person days training input (e.g., one person with 5 days or over training, or five people with one days training)	(less than 5 days score 5; 5-7 person days score 3, 10 or over person days score 0)
There is poor morale (e.g., connected with de-linking) or a culture that does not value professionalism	(Poor morale and unprofessional culture as judged by experienced clinician visitor, score 5; good morale and professionalism, score 0)

3: Risk of not following the cycle-steps and using the methods correctly

Same as above, and add

The everyday workload of team members did not increase considerably for longer than two months. (If so score 5-10 according to severity).

4: Similar risk factors predict whether the team will continue for more than 2 cycles

Investigate :

- a) Interaction of factors – where one makes up for or reinforces another.
- b) Are conditions related to relatively higher quality anyway (e.g., competent officer in charge)

QUESTIONS TO BE ASKED AND ISSUES TO BE ADDRESSED BY THE SUPPORT SYSTEMS SUBTEAM

For Regional Directorate

Location :

Staff interviewed :

Supervision (ask if Standards Team does not do)

1. What technical supervision is currently done? (*informal and formal*), For each type of supervision mentioned, who does it, who is supervised, how is it done, how often; why is it done?
2. Is supervision budgeted for? Can you estimate how much it costs to provide a supervisory visit? What % of the budget is for supervision?
3. When was last visit (DATE _____)? what type? duration of visit? outcome?
4. What tools are used to structure visits? ie. checklists (confirm)
5. Generally what happens as a result of the visit : do supervisors comment on problem solving, give feedback; take action? How? *Examples of how supervision contributed to team problem solving at HC*
6. Is visit or outcome documented/reported (*examples on quality of care*)? to whom? how often?
7. Do you feel that supervisors have adequate supervisory skills/training? specify skills
8. How are supervisors chosen? supervision standards or guidelines; job descriptions (check)?
9. Do you feel that the supervision adequately addresses quality of care issues at the District? Why?
10. What are the main strengths of the supervision you provide? Weaknesses? Other areas for improvement and any recommendations?

Training

11. Are you (region staff) given any QA training? what? when? from whom?
12. How have you applied the QA skills/topics learned in your own work?
13. Do you feel that these types of QA training are useful/ important/adequate? (specify)
14. Main problems/areas for improvement/needs and recommendations

Coaching/Facilitation of QA

15. Do you know about the QA activities in this region? *get general impressions regarding work of link facilitators, coaches, teams*
16. Have you heard or read the quarterly link facilitator reports or other reports of QA activities at the health centers? Any actions taken as result? (examples)
17. Do you provide any support to the HC, Links, coaches for QA activities (financial, administrative, transport, other)?
18. Problems/recommendations

Mechanisms for reporting/documenting QA activities and monitoring quality

Staff interviewed:

19. Do you compile reports/documents about the QA activities? What is done with these reports? How often reported?
20. Is feedback ever given back to the District/HC about this work? Examples.
21. What other ways are QA activities/results reported?
22. New H/MIS piloted here? other H/MIS or monitoring system? SKIP TO END if none.
23. Do you use it to monitor performance/quality of care at the districts? How? Check indicators.
24. Do you use these indicators to identify areas for improvement/districts with poor quality of care? How? How prioritise among problems identified?
25. Has frequency of collection/compilation been established for each indicator (as per H/MIS guidelines)? Who does? Check tables.
26. Has an analysis procedure for each indicator been established (including thresholds/targets)? Who does?
27. Does the Region provide feedback to DHMT/ HCs on quality of care as a result of these indicators? How? When?
28. Main problems/areas for improvement/needs and recommendations.

For DHMT

Location :

Staff interviewed :

Supervision

1. What technical supervision is currently done? (*informal and formal*), For each type of supervision mentioned, who does it, who is supervised, how is it done, how often; why is it done?
2. Is supervision budgeted for? Can you estimate how much it costs to provide a supervisory visit? What % of the budget is for supervision?
3. When was last visit (DATE _____)? what type? duration of visit? outcome?
4. what tools are used to structure visits? ie. checklists (confirm)
5. Generally what happens as a result of the visit : do supervisors comment on problem solving, give feedback; take action? *examples of how supervision contributed to team problem solving at HC*
6. Is visit or outcome documented/reported (*any examples on quality of care*)? how often?
7. Do you feel that supervisors have adequate supervisory skills/training? specify skills
8. How are supervisors chosen? supervision standards or guidelines, job descriptions (check)?
9. Do you feel that the supervision given is adequate to address quality of care issues at HCs? Why?
10. What are the main strengths of the supervision you provide? Weaknesses? Other areas for improvement and any recommendations to improve the supervision you provide?
11. What supervision do you receive from the Regional Directorate? Technical or managerial? How often?
12. When was the last Regional visit (DATE)? Purpose of the visit? What was done? Any feedback?
13. Do you generally find these visits helpful for addressing quality issues? Why or why not?
14. What needs improvement? Recommendations to help improve the way supervision is done?

Training

Staff interviewed :

15. Who is responsible for training activities at the District? How do you identify the need for training/ how are people selected to be trained? Is the same true for QA training?
16. Is there a plan for conducting these training activities for the district (check Plan of Action)
17. What QA training have you (District staff) received? when? from whom?
 - sensitisation
 - STDs setting
 - problem solving
 - indicator development
 - coaching/facilitation
18. Have you been able to apply these QA skills/topics in your work? How?
19. How does the District ensure that QA skills are maintained at the District/HC levels after training? periodic monitoring, re-training etc.
20. What are some areas for improvement/additional needs/ any recommendations

Coaching/Facilitation of QA

Staff interviewed :

21. What are your impressions regarding the QA activities (link facilitators, coaches, teams)
22. Are QA activities budgeted for at the District? Check action plan.
23. Have you compiled the quarterly link facilitator reports or other reports of QA activities at the health centres (check)? What do you do with them? How are they used?
24. Do you provide any support to the HC for QA activities (financial, administrative, transport, other)? To the Links? To the coaches?
25. Constraints/recommendations

Mechanisms for reporting/documenting QA activities and monitoring quality

Staff interviewed:

26. Do you compile reports/documents about the QA activities? What is done with these reports? How often reported?
27. Is feedback ever given back to the District/HC about this work? examples
28. What other ways are QA activities/results reported?
29. New H/MIS piloted here? other H/MIS or monitoring system? SKIP TO END if none
30. Do you use it to monitor performance/quality of care at the districts? how? check indicators
31. Do you use these indicators to identify areas for improvement/districts with poor quality of care? How? How prioritize among problems identified?
32. Has frequency of collection/compilation been established for each indicator (as per H/MIS guidelines)? who does? check tables

-
33. Has an analysis procedure for each indicator been established (including thresholds/targets)? who does?
 34. Does the Region provide feedback to DHMT/ HCs on quality of care as a result of these indicators? How? When?
 35. Main problems/areas for improvement/needs and recommendations

For Health Centre QA teams

Location :

Staff interviewed :

Supervision

1. What technical supervision do you receive from the District? (*informal and formal*), For each type of supervision mentioned, who does it, who is supervised, how is it done, how often; why is it done?
2. When was the last visit (DATE _____)? what type? duration of visit? outcome?
3. Were any tools used to structure visits? i.e., checklists (confirm)
4. Generally what happens as a result of the visit : do supervisors comment on problem solving, give feedback; take action? *Examples of how supervision contributed to team problem solving at HC*
5. Is visit or outcome documented/reported (*any examples on quality of care*)? how often?
6. Do you feel that supervisors have adequate supervisory skills/training? specify skills
7. Do you feel that the supervision given is enough to support the HC? Why or why not?
8. Do you generally find these visits helpful? why or why not? What are the main strengths of the supervision you receive? Weaknesses? Other areas for improvement and any recommendations to improve the supervision you receive?
9. What supervision is given to the HC by the Regional Directorate? Technical or managerial?
10. When was the last Regional visit (DATE)? What was the purpose of the visit? What was done? feedback given?
11. Do you generally find these visits helpful for addressing quality issues? Why or why not?
12. What needs improvement? Recommendations to help improve the way supervision is given?
13. Is supervision carried out within the HC? Why is it done? How? By whom? How often?
 - informal
 - self-assessment
 - peer review

Coaching/Facilitation of QA

Staff interviewed :

14. What are your impressions regarding the QA activities (link facilitators, coaches, teams)
15. Are these QA activities budgeted for at the HC? Check action plan.
16. How do you report QA activities at the HC? What, how often, who prepares? From whom do you receive feedback regarding these reports? Any actions taken as result? (examples)
17. Does the HC provide any support for QA activities (financial, administrative, transport, other)? To the Links? To the coaches?

18. How many times in the last month were you visited by a coach? Link facilitator?

19. Any problems/recommendations?

Training (do this section if QIT team does not do)

20. What QA-related training have you received? what type? When? From whom?

- general awareness
- standards setting
- problem solving
- indicator development
- coaching/facilitation

21. Which QA skills/topics have you used in your own work/in the teams?

- STDs setting
- problem solving
- indicator development

22. What problems have you encountered in applying these skills? (i.e., data collection and analysis?)

23. Do you feel that these types of QA training are useful/ important/adequate? (specify)

24. How are new staff individually trained in QA? formal/informal?

25. Have you been given any refresher/in-house QA training since ___?

26. Are you satisfied with the training you received?

27. Main constraints/problems/areas for improvement/additional needs and recommendations

Mechanisms for reporting/documenting QA activities and monitoring quality

Staff interviewed:

28. Do you compile reports/documents about the QA activities? What is done with these reports? How often reported?

29. Is feedback ever given back to the District/Region/CBoH about this work? examples

30. What other ways are QA activities/results reported?

31. New H/MIS piloted here? other H/MIS or monitoring system? SKIP TO END if none

32. Do you use it to monitor performance/quality of care at the districts? how? check indicators

33. Do you use these indicators to identify areas for improvement/districts with poor quality of care? How? How prioritise among problems identified?

34. Has frequency of collection/compilation been established for each indicator (as per H/MIS guidelines)? who does? check tables

35. Has an analysis procedure for each indicator been established (including thresholds/targets)? who does?

36. Does the Region provide feedback to DHMT/ HCs on quality of care as a result of these indicators? How? When?

37. Main problems/areas for improvement/needs and recommendations

For Links/Coaches

Name/title :

1. For which District/HC are you the Link/coach?
2. What training did you receive to be coach or link? when?
3. Was training adequate to conduct QA training/coaching activities?
4. What duties do you perform in addition to working as a Link/Coach?
5. General impressions regarding effectiveness or importance of QA activities?
Do you have a schedule for HC visits? trainings to do? ad hoc
6. How many visits to how many teams on average per month?
7. How do links supervise work of coaches? How ensure that skills of coaches are adequate/effective?
8. How do you maintain your own skill levels?
9. What support do you receive for doing this work? from Region, District, HC, donors?
10. Who supervises the work you do as a facilitator/coach?
11. What motivates you to continue with these activities?
12. Constraints/problems/recommendations especially for sustaining QA work?

Appendix E: Achievements of the Problem-Solving Teams

Link Facilitator Reports

Region: Southwest	Number of Districts in Region:
Province: Southern and Western	Number of links in Region: 7
Quarter: 3rd 97	Number of coaches: 31 (24 active)
Date: 22 October 97	Reporting: Mr. Chikuta, Mr. Masheta, Mr. Chindongo, Mr. Kachana, Mrs. Nkatya, Mr. Litebele

Location	Activity	Problem-Solving or Other Quality Improvement
Gwembe District	Hospital and 3 rural health centres received QA sensitisation	Standard setting – district compiling a book of standards; incomplete information about exactly what standards this concerns.
Mazabuka District Health Office (DHO)	13 DHO staff received training in problem solving	Beginning problem solving – identified 11 possible problems. Short list done, priority matrix used to identify lack of teamwork as problem; now doing operational definition of problem.
Magoye Rural Health Center (RHC), Mazabuka District		Inadequate water supply: HC staff and patients' relatives drawing water from community borehole – inconvenience, long time to draw water, predisposes staff to poor hygiene; formed team with community to solicit donations, received a submersible pump, hooked it to HC pipes, now center has piped water morning and lunch hour. Reduced teamwork among staff, no transparency, gossiping, blaming. Treated as low-lying fruit – noted clinical officer was controlling all aspects of the center (stores, finances, records, etc.). Met as a team to divide responsibilities, sharing responsibilities, delegation, now have regular staff meetings and participation by all staff. Ill feelings reduced.
Mwachipapa RHC, Choma District		Low immunization coverage – 39.8%. At last report, doing data collection, now doing data analysis.
Sikalongo Health Center, Choma District		Unsafe home deliveries, 12/27 had complications; insufficient information in report to know over what time data was collected, or what the complications are; in analysis phase.
Choma District Health Office		Increase in malnutrition throughout district – 30% in 1995, 35% in 1996. Just beginning data analysis to find out the patterns and characteristics of the statistic. 6/10 health information forms missing within the office before they reach the health information officer. Set standards, for forms routing and handling, monitoring results.
Choma General Hospital	New QA committee formed, had been inactive	

Location	Activity	Problem-Solving or Other Quality Improvement
Sinazeze RHC, Sinazongwe District		Low immunization coverage – 18% baseline in July. Did bubble chart of possible causes, testing theories of cause with data collection going on now.
Maamba Rural Hospital, Sinazongwe District		After becoming aware of a need to focus on clients, discovered that 15/20 patients in one day got lost going to different departments within the hospital. Standards were set for directional signs, posting, signs put up in July. Now monitored: only 3/20 got lost, these people could not read. Considering ways to provide way-finding for people who do not read.
Makunka RHC, Makunka District	Problem Solving, QA sensitisation	After becoming aware of a need to focus on clients, realized there was no privacy for antenatal history-taking, low-lying problem, rearranged patient flow to provide private room.
Ngwezi RHC, Makunka District	Problem solving, QA sensitization	Delayed wound healing, beginning analysis; incomplete information available about which wounds, which patients, definition of “delayed.”
Libuyu HC, Livingstone District	Monthly QA committee problem-solving meetings	Had no monitoring of STD (Sexually Transmitted Disease) cases in antenatal mothers and babies, started routine monitoring, noted high incidence of syphilitic rash in this population, began problem solving; defining the scope of the problem.
Mahatma Gandhi Clinic, Dambwa, Livingstone District	Monthly QA problem solving meetings	Congestion at MCH (Maternal and Child Health) department, baseline waiting time from arrival to departure was 3 hours. Noted longest waits for patients arriving earliest, problem due to staffing patterns that put more staff on late morning and afternoon shifts; rescheduled staff to morning hours, wait now maximum 68 minutes
Livingstone District Health Office	Trained one coach in problem solving	Inadequate coaching resources for the district, low-lying problem solved with validation of new coach.
Namwala District Hospital		Originally, no monitoring of post-natal coverage, began monitoring. In July, reported only 13% delivered mothers attended post-natal care. Acted on easy solutions: educating mothers at discharge, during antenatal care, when getting BcG vaccine, set appointment date when discharged from hospital. Recent monitors show 28% of delivered women attend post-natal.
Namwala District	DHO (District Health Office), hospital and RHC staff received problem-solving training	Previously reported late submission of monthly returns, none submitted on time. Set standards for submission with clinics. July 8/10, August 7/10, September 8/10 submitted on time.
Masele Clinic, Namwala District		Previously reported standards setting to correct problem of not receiving referral information on patients sent to hospital. Initially got 5/5 and 6/7 referral letters back (May, June). From July – September, only 2/15 referrals returned. Looking at the problem again with hospital and clinic staff.
Itezhitezhi District	QA coach trained	New district without a QA coach or locally available link; attended QA Coaching and Committee workshops; coach validated.

Location	Activity	Problem-Solving or Other Quality Improvement
Mumbwa District Hospital	QA sensitization and problem-solving training	Concerned about waiting time in OPD, doing data collection to find out what waiting time is. Staff aware of data collection and they are already changing their habits by reducing absenteeism and working more efficiently. Team concerned that problem will be resolved just by monitoring – commended!
Nampubwe Health Center, Mumbwa District	QA sensitization and problem-solving training	Perceived long waiting time for mothers attending under-5 clinic, measured at 2 hours in small sample. Chose low lying solution, started supermarket services. Mothers have expressed that they prefer the supermarket approach. Team to re-measure waiting times, but realize that old model of service delivery does not match new, and data may be questioned.
Kapyanga Health Center, Mumbwa District	QA sensitization and problem-solving training	Long waiting time at OPD, estimated at 2 hours. Collecting data during patient flow analysis.
Sichobo Health Center, Mumbwa District	QA sensitization and problem-solving training	Long waiting time in antenatal clinic, estimate women wait for two hours before being attended. Collecting data during patient flow analysis.
Serenje District	Refresher QA training for DHO, hospitals and centers	QA had stalled in the absence of the link. There was no monitoring of disease management, no assessment of management support to facilities, no assessment of the effectiveness of UCI program. Link and teams did quality assessment, collecting data from the community and facilities. Found: irrational prescribing with no cost considerations; screening skills quite poor with some patients not being screened, some not being greeted, some not having temperatures or other vital signs measured; absence of essential drugs; incomplete history taking; incomplete health records; using expired vaccines; ineffective communication between providers and clients; ill-defined referral; irregular or inappropriate staff training. Are considering at the district level what the priorities are, and will sponsor teams formed at facilities to address these issues.
Northern Province, all districts	QA Committee and QA Coaching workshops held	In September, did province DySSSy and QA workshops; 44 people attended DySSSy, 39 QA Committee, 25 coaching. All districts have done action plans for 1997 and are doing them for 1998. Each district has plan for sensitizing DHMTs and rural HCs. Most committees recently formed have members from the community such as farmers, shop keepers, church headmen, as well as health workers.
Nseluka RHC, Kasama District		Poor drug management – drugs finishing before receiving the next kit. Bubble chart being done, unsure if drugs finish because of appropriate use, or insufficient supply, or irrational use.
Nkolemfumu RHC, Kasama District		Inadequate equipment for cleaning, doing bubble chart.
Chilubula RHC, Kasama District		No orientation for patients; patients told verbally to go to the wards but no knowledge of why. Doing bubble chart, although may be a low-lying problem. Poor drug management – many expired drugs in pharmacy, doing data collection to discover what is expired, for how long.

Location	Activity	Problem-Solving or Other Quality Improvement
Outpatient Department, Kasama		Lack of cleaning materials, bubble chart done. OPD recently detached from the hospital to the district, after coming under the district control, adequate supplies and materials were provided.
Mungwi RHC, Kasama District		Congestion in treatment room. Doing bubble chart, anticipate need for patient flow analysis.
Lukupu RHC, Kasama District		Poor drug management – drugs finish before receiving next consignment. Doing bubble chart and data collection to determine if this is a problem or inappropriate use or appropriate for service volume.
Milima RHC, Kasama District		Long waiting time; estimated that patients wait 3 hours from entry to discharge; bubble chart.
Tazara RHC, Kasama District		Low family planning acceptance, 159 of 3206 users; unsure what time frame this baseline refers to; doing bubble chart.
Location RHC, Kasama District		Started problem solving, but information not available about topic.
Musa RHC, Kasama District		Long waiting times, estimate 40 minute wait to be seen, doing bubble chart.
Isoka District Hospital		Standards setting; sensitization Nurses are setting clinical standards for their services.
OPD, Isoka District Hospital		Problem solving sensitization Long waiting time at OPD, formulating data questions.
Luwingu District Hospital	Formed two QA working groups; doing problem ID	<p>After low-lying problems defined, standards were set or re-emphasized and immediate solutions were applied:</p> <ul style="list-style-type: none"> ■ sharps disposal not appropriate - heps bags that were lying in corridors have been removed ■ incinerator over full – being emptied frequently ■ no rubbish pits – community became aware through QA committees and churches dug the pits ■ poor patient meals, with mostly cabbage and beans – a nutritionist was assigned, meals have improved ■ visitors coming at all hours – gate fixed, visitors controlled ■ lack of nursing staff – number of nurses going to the market while on duty has reduced, adequate staff for care requirements ■ no laboratory screenings for MCH patients – some reagents were lacking, but MCH have started routine screening after learning about requirements ■ inadequate latrines for hospital – churches assisting with digging pits ■ no input from community – community members on QA committee challenged facility to get client input, suggestion boxes put up at hospital ■ lack of security at hospital – constructing a wall fence and shelter for guards <p>Long waiting time at children’s clinic, approximately two hours from arrival to departure. Flow chart and bubble done, data questions posed, data collection done on 15/10/97, conclusions not yet available.</p>

Location	Activity	Problem-Solving or Other Quality Improvement
Luwingu District Health Office		Poor accommodation for health workers, QA committee influenced the district health board to start working on the problem; application made to procure a vacant building, applying for funds under micro-project unit. Measles cases managed in the TB ward - construction begun on an extension ward.
Chilubi District, all 8 RHCs		Poor management of essential drugs – drugs run out after 3 weeks rather than 8 weeks as the standard. Doing flow and bubble charts, considering if standard is appropriate or not.
Chinsali District Hospital		Starting problem solving looking at infections in post-operative c-section patients; just beginning.

Region: North Western	Number of Districts in Region:
Province: Luapula, Copperbelt, North Western	Number of links in Region: 13
Quarter: 3rd 97	Number of coaches: 48 (45 active); none yet trained in North Western Province
Date: 22 October 97	Reporting: Miss Buleze, Mr. Jere, Mr. Chibesa, Mr. Longwani, Mr. Kilele (no report from North Western Province)

Location	Activity	Problem-Solving or Other Quality Improvement
Buchi Urban Health Center (UHC), Kitwe District		Dirty clinic, cleaning supplies are exhausted in two weeks that should last a month. Set standards – a book to record cleaning materials received, an audit of supplies daily, stock control cards, a cleaning committee formed, a working schedule for cleaning (when to clean floors, windows, and so on) to avoid misuse. Supplies now last the whole month, three different supervisors at three different visits have commended clinic for cleanliness.
Chimwemwe UHC, Kitwe District		Long waiting times, data shows most time spent in registry and screening, longest delays are at the beginning of the work day. Actions: night shift to pull cards for patients who arrive early, night staff collect registration fees for early patients, clerks can make cards for new patients as well as pull cards for old patients at the same time, patients are given numbers to track who comes first (rather than getting pushed lower in the stack as more recent arrivals get earlier treatment), shifts changed for clinical officers so there is staff on for 24 hours, more staff early in the morning; meeting with clinical officers discussed ways not to waste time; nurses trained to help screen. Registry waits reduced from average 36 minutes to 11 minutes; screening time reduced from average of 54 minutes to 29 minutes; pharmacy wait averages 18 minutes. Total reduced waiting time is from 1 hour 48 minutes to 58 minutes. Complaints from antenatal care patients they wait too long before going home. Collecting data to see which part of the process is slow.

Location	Activity	Problem-Solving or Other Quality Improvement
Itimpi Maternity Center, Kitwe District		Underutilization of services – less deliveries compared to booked clients. Though there does not seem to be a clear problem (nothing wrong with at-home deliveries if they are safe), staff believes they need to increase the number of deliveries in the center. Treating as a low-lying problem, with intensified health education on benefits of delivering at center, risks that cannot be handled by TBAs; also educating mothers to begin travel early to avoid transport problems.
Kwacha UHC, Kitwe District		Dirty clinic. Procured slashers, burned refuse, procured cleaning material and a book for receipt and usage monitoring. Clinic and surroundings now clean.
Kwacha UHC, Kitwe District		Drugs run out after three weeks, data collection going on. Long waiting time in OPD, data collection going on.
Luangwa Peri-urban Health Center, Kitwe District		Long waiting times in the queues in the clinic, did flow and bubble charts, data showed people waited in queues approximately 1 hour. Actions: ensured each room had a staff member assigned, set standards for staff punctuality, procured enough equipment (BP cuffs, scales), scheduled client visits for different days (primagravidas and multigravs on different days), staff trained in family planning so there is always a FP person in the clinic. After interventions, queue waits reduced to an average of 40 minutes.
Ndeke Clinic, Kitwe District		Long waiting time in OPD, doing data collection.
Ipusukilo Peri-urban Clinic, Kitwe District		Long waiting time in MCH, doing data collection.
City Square Clinic, Kitwe District		Careless sharps disposal. Got cartons to use for disposal, bought empty drums for use as dust bins, educated staff on risks of sharps injury and prevention methods including proper disposal, drew up a schedule with council refuse trucks to have more frequent refuse collection (for burning). Sharps are now disposed of properly.
Kamfinsa Prison Clinic, Kitwe District		Low clinic maternal deliveries, need training for staff on problem solving to continue work.
Garneton Clinic, Kitwe District		High number of defaulters in child immunizations. Sample from April – September 1996 had 88% not fully vaccinated. Set standards for recording vaccinations, vaccination to be available each day, children to receive all necessary vaccinations at once (not return on successive days), in-charge to check records daily, vaccinations to begin within 10 minutes of clinic opening each day, cards to be checked in under-5 clinic and immunizations to be given there as needed, do standard health education on the benefits of vaccination. Plan to monitor during a 6-month period.
Munkanta RHC, Kawambwa District	Problem-solving training	Standards previously set (UNICEF) were not addressing important issues, were not objective. Staff are redefining standards.
Kawambwa District Hospital	Problem-solving training, QA committee formed	Problem selection – poor environmental hygiene in the hospital.

Location	Activity	Problem-Solving or Other Quality Improvement
Mwense Hospital	Problem-solving training, QA committee formed	Inadequate supply of supplementary ARI drugs. Reported at PDCA (Plan, Do, Check, Act) cycle, but no details of problem solving work available to this report.
Mulumbi RHC,	QA sensitization, committee formed	Low utilization of FP services. 14/372 baseline users. Acceptors in June were 32. Unsure of specific actions, the length of time over which the baseline was calculated, if “32” is total or just June acceptors.
Fwaka East 8 RHC, Milenge District	QA sensitization	Center was formerly in Samfya District and run by the Flying Doctor’s Service – no exposure to QA. Beginning problem solving, working on low UCI coverage.
Kabongo RHC, Milenge District		Attempt to visit this center failed as coach did not get promised transport (is 135 km from coach, formerly in Samfya district).
Samfya District Hospital	Problem-solving training	Beginning problem solving, “high number of unsafe deliveries at home.” No information available on why home deliveries are thought to be unsafe.
Buntungwa Urban Clinic, Mansa District.		Congestion at OPD, choosing a team
Fimpulu RHC, Mansa District		Increase in complicated malaria cases under 5; up to bubble chart.
Mibenge RHC, Mansa District		Lack of co-ordination within staff; treated as low-lying problem, drew up time table for staff meetings, minutes are written in Bemba for the sake of the CDE’s
Kabunda RHC, Mansa District		Late reporting for work. Set standard for reporting, and for staff to seek permission from the in-charge if they have other problems to attend to requiring them to be late.
Paul Mambilima RHC, Mansa District		Congestion on wards caused by relatives staying with patients because there is no shelter for relatives. User fees used to buy bricks, community has started bringing bamboo for the roof, shelter to be constructed before the rains.
Muwang’uni RHC, Mansa District		Underutilization of family planning services. No detail on analysis, but have integrated FP with other services and health education is targeting men. Some men have started collecting contraceptives on behalf of their wives (links pointed out the risks of using FP methods without assessment and evaluation, coach to investigate).
Ndoba RHC, Mansa District		Low immunization coverage, starting problem solving, doing bubble chart.
Mansa District		Overall low family planning acceptance rate. Supermarket approach introduced at 4 urban centers, mobile services started. Target for 1996 new acceptors was 46%, now new acceptors are 68%.
Kanyembo RHC, Nchelenge District	QA sensitization, problem solving	Identified 16 problems, chose to work on low number of deliveries at the health center, just defining problem.

Location	Activity	Problem-Solving or Other Quality Improvement
Kambwali RHC, Nchelenge District	QA sensitization, problem solving	Center staff had poor interpretation of QA – viewed as examination and scoring points. When district left, staff went to same old performance. Now realize importance of setting own standards and local control of quality. Just started problem solving on “long waiting time at the OPD.” Also bought an Oral Rehydration Therapy corner kit after realizing it was important to quality, not just an inspection criteria.
Nchelenge DHO	Standards training	District has 60 QA standards, which are not yielding desired results (standards styled on Luapula UNICEF manner). Decided to review standards, revise them as needed, and use them in RHC monitoring. Also, working on the problem of low coverage of planned activities in district action plans; flow chart, data questions done.
Nchelenge RHC, Nchelenge District	QA sensitization, problem solving	Beginning to do problem solving, brainstormed 16 problems, prioritized to “high number of home deliveries which are unsafe,” just doing problem definition.
Kabuta RHC, Nchelenge District	QA sensitization, problem solving	Beginning problem solving, brainstormed 13 problems, prioritized to “late reporting by expectant mothers at the RHC for labor,” just doing problem definition.
Chabilikila RHC, Nchelenge District	QA sensitization, problem solving	Beginning problem solving, brainstormed 13 problems, prioritized to “inadequate number of primary healthcare workers, CHW and TBAs in the health post,” just doing problem definition, link alerted that this seemed to imply the solution, not the problem.
Chipungu RHC, Chienge District	Coaching	Beginning problem solving, prioritized to “over crowding in the wards by inpatients” – just beginning problem definition.
Chienge DHO		Report was sent but not received – known to be working on low family planning utilization in the district, at implementation.
Ndola Urban DHO	Few coaches for 20 clinics – request CBoH train one more	Clinics submit late monthly returns. 9/20 submitted on time. At in-charge meeting, set standard for submission before 5th of following month, clinics allowed to use imprest for duplicating the forms. First after setting standard had 14/20 submitting on time, continuing to monitor.
Dola Hill Clinic,	Problem-solving and standards-setting training	Started to investigate compliance with chloroquine administration but unable to gather data because patient records missing. Therefore, began to work on poor record keeping in registry – patient records often went missing or were misplaced. For one week, 14 missing, 17 misplaced records (no denominator available). Set standards for filing, registry entry; noted many went missing from dispensary, so introduced card boxes in dispensary. Now patient records are entered in respective registers every day, missing records down to 8 per week, misplaced down to 6. Will monitor, and start over on chloroquine problem.
Twapia Clinic, Ndola Urban District	Problem-solving training	Long waiting time at children’s clinic, mothers wait for an average estimated to be 2 hours before being attended to. Did flow chart, now collecting data on current waiting time.

Location	Activity	Problem-Solving or Other Quality Improvement
Kabushi Clinic, Ndola Urban District	Problem-solving training	Low family planning acceptance. In July, 190/6000 (estimated) women of child bearing age in catchment area were family planning acceptors. Treated as low-lying problem, started FP services in supermarket approach, more attention to health education on FP during post-natal and under-5 visits. Increased to 209/6000 by August 30.
Lubuto Clinic, Ndola Urban District	Problem-solving training	Patient complaints in OPD that they wait too long before being attended to. Started problem solving, patient flow analysis, doing data collection of times at each stage in the process.

Region: **South East** Number of Districts in Province:

Province: **Eastern, Lusaka** Number of links in Province: 7

Quarter: 3rd 97 Number of coaches in Province: 37 trained (32 active)

Date: 22 October 97 Reporting: Mr. Chitomombo, Mr. Banda, Mrs. Mupwaya

Location	Activity	Problem-Solving or Other Quality Improvement
Luangwa District	Distributed storybooks to RHCs and hospital	No indicators on finance being monitored, set indicators for # payments made after 15.00; # payments made before approval; # imprests given before retiring old imprest; monitoring.
	Writing and distributing link minutes to coaches	No indicators on maintenance being monitored, note erratic servicing of vehicles, set indicator # times a vehicle undergoes service in a quarter; monitoring.
	Team building for one day with RHC staff	
		Antenatal care coverage 26%. Interventions: all RHC and hospital MCH will conduct follow-ups once a month to pregnant women; in 3rd quarter, coverage is 73%.
Luangwa Boma Clinic Luangwa District		Essential drugs run out after two weeks, 50% of patients got drugs without prescription, 15% got multiple prescriptions. Intervention: recording of each step in drug use and dispensing, kits now last 4 weeks or more.
	Put vision and storyboard in view	Patient long waiting time – impression is that patients average a 40-minute wait from pulling their card to departure, but before further analysis, will gather baseline data for two weeks to find out real waiting time and flow analysis.
Estates Clinic, Kafue District		Had solved problem of long waiting time, now experiencing welcome side effects of the actions taken to shorten waiting time. Had established 7 immunization outreach posts to reduce congestion, but now also noting an increase in immunization coverage: in 1996 BCG 50%, measles 50%, DPT 65%, Polio 60% TT 50% (# immunized / target population). Jan – Aug 97 already have BCG 85%, measles 75%, DPT 80%, Polio 80%, TT 60% (against annual targets). Also, had started orienting 1 nurse to MCH

Location	Activity	Problem-Solving or Other Quality Improvement
		<p>duties, to relieve congestion in that area. Now notice that there is a side effect of no more shortage of nurses to work in MCH – there is always someone on duty who is fully oriented. In addition, nurses who have been trained in IMCI are assisting with screening, further shortening the wait for screening. Also, note some delays had been due to waiting for referral to UTH, requested a physician be assigned. After physician assigned, fewer patients are waiting as examinations can be done without referral to UTH, and referrals are done more quickly because the physician has already done a preliminary examination and studies. There is no congestion in the clinic.</p> <p>Neglected wards. All nurses had been working in OPD, only distributing medications in ward. Realized this was a low-lying problem, assigned nurse each day to meet medical needs of patients, make beds, ensure meals are provided. Also assigned cleaning standards for ward and note there are no more offensive odors coming from the ward.</p> <p>Impression that there was an increase in septic wounds which turned septic after treatment. Noted that only clean, not sterile, items were used for wound care. Requested an autoclave, set standards for use of sterile materials in wound care. No formal measure of infection rates, but are 100% meeting standard that sterile materials are used for wound care.</p>
Mission Hospital RHC, Kafue District	QA sensitization	Long waiting time. At problem definition, discovered this to be a low-lying problem, delays were due to health workers reporting to work late, there were no bottlenecks in care. Set standard to report to work on time, in-charge monitoring.
Railway Clinic, Kafue District DHO, Kafue District	Problem-solving training	<p>Low post-natal coverage; no data available for baseline level, doing problem definition.</p> <p>Late monthly returns, monitoring solutions put in place reported last quarter. 100% compliance with submitting returns on time. Baseline 21% compliance (3/14 centers)</p>
Mr. Makulu Clinic, Kafue District	all members of staff, not just QA committee, sensitized in problem solving	<p>Late antenatal booking previously reported. Little or no improvement, but staff continue to follow standard of screening all women for LMP, and booking for antenatal evaluation, no matter what clinic they attend. They will measure the percent of bookings during early trimesters later in the year.</p> <p>Long waiting time previously reported reduced from 1 hr 45 minute to 30 minute average over 10 patients. Monitored 10 more patients, wait ranges from 30 – 45 minutes.</p> <p>High number of TB defaulters – Jan – June 22/50 TB patients defaulted. Just beginning problem solving with problem definition.</p>
Chama District Hospital, DHO		Long waiting times in outpatient care; data questions posed, data collected, being analyzed.

Location	Activity	Problem-Solving or Other Quality Improvement
Kambombo RHC, Chama District	QA sensitization and problem solving	Problem identification – late reporting to work, one hour late common. Standard set by going through individual job descriptions (different reporting times for different staff) and monitoring by in-charge. No results available, but in-charge says people are on time.
Tembwe RHC, Chama District	QA sensitization and problem solving	Problems identified and short listed, prioritized to work on low immunization coverage – 30% of target population under 1 year are immunized. Bubble chart is next step.
Sitwe RHC, Chama District	QA sensitization and problem solving	Problems identified and short listed, prioritized to work on shortage of drugs, bubble chart next step.
Madzimoyo RHC, Chipata District		Increase in diarrhea cases, doing bubble chart.
Madzimawe RHC, Chipata District		Low immunization coverage, coverage less than 60%, target is 80%; analyzing high level flow chart.
Kasenengwa RHC, Chipata District		Late reporting for work; standard setting did not change habits, decided to do formal problem solving, preparing data questions after completing bubble chart.
Msekera RHC, Chipata District		Inadequate screening of patients, doing data questions.

Appendix F: People Met during the Mission

People met in Lusaka

Central Board of Health

Dr. E. Limbambala	Director, Directorate Monitoring and Evaluation
Dr. M. Maboshe	Manager, Service Quality and Performance Audit, Directorate Monitoring and Evaluation
Mrs. Joyce Tembo	Quality Assurance Specialist, Directorate Monitoring and Evaluation
Miss M. Moonga	Clinical Advisor to the Director General
Mr. B. Chita	Manager, Directorate Health Services Commissioning
Miss Anne Young	HMIS Specialist

Ministry of Health

Mrs. Siame	Immunization Specialist
Mrs. Sinyangwe	Child Health Specialist

BASICS/Lusaka

Dr. Abdikal Alisalad	Child Health Coordinator
Dr. Remi Sogunro	Chief of Party

USAID/Zambia

Dr. Robert Clay	PHN Chief Officer
Dr. Paul Zeitz	Technical Advisor

Center for Health, Science and Social Research (CHESSORE)

Dr. T.J. Ngulube	Researcher,
Dr. Mubiana Macwan'gi	Researcher, Sociologist

Faculty of Private Practitioners (FPP)

Dr. Hilda Mutayabarwa	Member, former Chairperson
-----------------------	----------------------------

Zambia Medical Association (ZMA)

Dr. Hilda Mutayabarwa	General secretary
-----------------------	-------------------

General Nursing Council (GNC)

Mrs. E. Msidi	Registrar
Mrs. Dorcas Phiri	Training Coordinator
Mrs. Theresa Sikateyo	Trainer, In-service Training
Mrs. Rhoda Nthani	Examinations Officer

School of Nursing, University Teaching Hospital

Mrs. Margaret C. Maimbolwa	Principal Tutor
Mrs. Mulima D. Ketata	Nurse Tutor
Mrs. Stella C. Chisuka	Senior Tutor
Mrs. Salome M.S. Zulu	Nurse Tutor

School of Medicine, University of Zambia

Prof. L. Mukonge	Dean, School of Medicine
Prof. A. Haworth	Professor of Psychiatry
Prof. Kareshani	Head of Department of Anatomy
Dr. Rosana	Head of Physiological Sciences
Dr. Shinondo	Head of Department of Pathology
Dr. L. Chiwele	Head of Department of Community Medicine
Mrs. Kapembwe	Senior Assistant and Registrar

Churches Medical Association of Zambia (CMAZ)

Mr. Marlon Banda	Quality Coordinator
Dr. Simon Mphuha	Health Programmes Manager
Dr. Biemba	Secretary General

Medical Council of Zambia (MCZ)

Mr. W.W. Banda	Registrar
----------------	-----------

World Health Organisation (WHO)

Dr. Buoaye	WHO-Representative to Zambia
------------	------------------------------

People Met in North Western Region**Regional Office, Kitwe**

Mr. Lombe Chipupu	Human Resource Specialist
Mr. Patrick Mubiana	Health Promotion Specialist
Mr. Chipupu Kandeke	Pharmacy Specialist

District Health Office, Kitwe

Dr. Chashi Cleto	District Director of Health
Mrs. Mary Sieta	Manager Planning and Development, DHMT
Mr. Bruno Chilundy	District Coach

Chimemwe Health Center, Kitwe District

Mr. K.Mainda	Clinical Officer
Mr. O. Chileshe	Enrolled Nurse

Ndeke Health Center, Kitwe District

Mr. Mulemfwe Chipiri Clinical Officer
Mr. Anthony Longwani Clinical Officer, Regional Link, Kitwe District, DHMT

Lukoshi Health Center, Kitwe District

Mrs. Christine Chanda Enrolled Nurse

Mindolo 1 Clinic, Kitwe District

Mrs. Annette Chilimana Acting Nursing Officer
Ms. Chisimba Simfuke Chief Nursing Officer, Nkana Mine Hospital
R.B. Maguswi Senior Nursing Officer – Clinics, Nkana Mine Hospital
D. Bolla Acting Hospital Administrator, Nkana Mine Hospital

Lufanyama District Health Management Team

Mrs. Grace Phiri District Director of Health
Mr. John Lungu District Information Officer, coach
Mrs. Colly Sovi Manager Planning and Development
Miss Josephine Banda Manager Administration
Mr. John Makumani Clinical Care Officer

Chimokunani Health Center, Lufanyama District

Mr. Philip Monoluba Sister in-charge
Mrs. Ruth Chibale Enrolled Nurse

Chati Health Center, Lufanyama District

Mr. John Makumani Clinical Care Officer
Mrs. Daisy Chibale Family Health Nurse

Kalulushi District Health Office

Dr. Kawesha District Director for Health
Mr. Andrew Sekanika Manager Planning and Development

Kalulushi Government Clinic, Kalulushi District

Mr. Ndemena Laboratory Technician
Miss Idah Kasimbo Sister in-charge

St. Theresa Hospital, Ibenga

Dr. Joop Hanssen Medical Officer in-charge
Sister Christine Tembo Nurse
Dr. Soko Executive Director, Mpongwe Mission Hospital
Inonge Makuyu Kapika Theatre Nurse

People Met in North Central Region

Regional Office, Kabwe

Dr. G.L. Kassanda	Regional Director
Dr. A. Simwansa	Manager Technical, Support and Performance Audit
Mrs. M. Musonda	Manager Human Resources and Administrative Systems

District Health Management Team, Kabwe District

Dr. E.J. Sikasula	District Director of Health
Mr. H-C Witola	Acting Manager Planning and Development, coach
Mr. Henry Fumbeshi	Manager Administration
Mrs. Annie Matakala	Coordinator MCH

Kabwe District Health Board

Mrs. Gertrude Kacha	School Teacher
Mr. Jackson Mukuka	Businessman

Mahatma Gandhi Clinic, Kabwe Urban District

Mr. Musukoma	Clinical Officer in-charge
Mrs. A. Shaumkali	Sister in-charge
Mrs. Sampa	Enrolled Midwife
Mrs. Kassanda	Enrolled Midwife
Mr. Mwale	Laboratory Technician

Mahatma Gandhi Neighborhood Health Committee, Kabwe District

Mr. Henry Diangamo	Member
Mr. Maxwell Kaira	Member
Mr. Rodrik Kalimbwe	Member
Mr. Joseph Kwando	Member
Mr. Boniface Matafwali	Member
Mr. Agrey M'Kwasa	Member
Mr. Joseph Mulowa	Member
Mr. Loyd Mwale	Member

Nakoli Health Center, Kabwe District

Mrs. Josephine Maala	RN, Sister in-charge
Mrs. Bessie Nyirenda	Enrolled Midwife

Kapiri Mposhi District Health Management Team

Dr. Victoria Daka	District Director of Health
Mrs. M.M.K. Njomwa	Acting Manager Administration (DHI)
Mr. M.M. Mukolo	Acting Manager Planning and Development
Mr. A. Mulenga	Information Officer, QA coach

Kapiri Mposhi District Hospital (1st level) - Quality Assurance Committee

Mrs. C.M.C. Kaziejka	RN, Acting sister in-charge
Mrs. Beatrice Kunda	RN
Mrs. Silvia S. Maswa	Enrolled Nurse
Mrs. Lubinda	EHT
Mrs. J. Chibuye	EHT
Miss E. Mwale	EHT
Mrs. J. Lumwenda	EHT

Makululu Health Center, Kabwe District

Mrs. Joyce Happy Mwepa	Sister in-charge
Mr. Alick Kalambata	Chairman, Neighbourhood Health Committee
Mr. Joseph Ngulube	Treasurer, Neighbourhood Health Committee

Mwashisompola Health Demonstration Zone, Chibombo DHO

Dr. Elijah Sinyinta	District Director of Health
Mr. Ernest Mutukwa	Senior Clinical Officer

Chibombo Health Center, Chibombo District

Mr. Davison Mpukuta	Senior Environmental Technician
---------------------	---------------------------------

Bwacha Health Center, Kabwe District

Mrs. Grace Sikazwe	RN
--------------------	----

Liteta Hospital, Chibombo District

Mr. Hawela Moonga	Laboratory Technician
-------------------	-----------------------

People met in South Eastern Region

District Health Management Team, Lusaka

Dr. Moses Sinkala	Acting District Director of Health, Manager Planning and Development
Mrs. Sipatonyana	Public Health Nurse, Regional Link Facilitator
Mrs. Mavis Kalumba	District Coach (Senior Health education Officer, Council Nutritionist)

George Health Center, Lusaka District

Mr. S. Zulu	Clinical Officer
Mrs. Anne Kafuta	Sister in-charge

Civic Center Clinic, Lusaka District

Mrs. Josephine Nondo	Clinical Officer in-charge
----------------------	----------------------------

Kamwala Health Center, Lusaka District

Mrs. Margaret Chitenge	Enrolled Psychiatric Nurse
Mrs. Lister Mwanza	Enrolled Nurse

Kalingalinga Health Center, Lusaka District

Mrs. Sarah Ngoma RN Sister in-charge
Mrs. Mavis Kalumba Senior Health Education Officer/QA Coach
Mrs. Regina Moyo RN

Chawama Health Center, Lusaka District

Mrs. Maclean Ukwimi Sister in-charge
Mr. F.K. Kabaso Nutritionist
Dolly Kazoka Staff member

People met in South West Region**District Health Management Team, Monze District**

Mr. Daniel Mukupa Manager Planning and Development (on leave)
Mrs. H. Chama Manager Administration
Mrs. J.Z. Munangandu District Health Information Officer
Mrs. Anne Mutinda Acting Manager Planning and Development

Monze District Hospital

Mrs. M. Simatwa Enrolled Midwife
Mr. Harold Nkhoma Clinical Officer, District Coach

Rusangu Health Center, Monze District

Mr. Mate Samwa Clinical Officer in-charge
Mr. James Natesamwa Clinical Officer
Mr. Colly Mwiindwa Enrolled Nurse

Manungu Health Center, Monze District

Mrs. Petronella Fulilwa Zulu Family Health Nurse
Mrs. M.H. Cheenyu Enrolled Midwife
Mrs. Rodia M. Chipuka Enrolled Midwife
Mrs. H.C. Heenyu Enrolled Midwife

Choma Health Office, Choma District

Mr. Griffin Chindongo Health Information Officer and Link Facilitator

Appendix G: Systems View of a Quality Assurance Program

Structure

Human resources

- National QA specialists
- Health staff competent in QA at various levels of the health system
- Private and public health practitioners
- Other staff (decision makers, accountants, etc.) whose work influences the QA activities

Bodies and constituencies

- QA unit
- QA committees at various levels
- Regulatory bodies (professional councils or associations, etc.)
- Consumers/Patients associations
- Health committees
- Public and private sector associations

Health facilities

- Hospitals
- Ambulatory care facilities
- Private and public facilities

Equipment

- Identification of the minimal medical and non medical equipment necessary to implement the standards of care

Process

Development of a QA program

- Definition of quality of care
- QA policy: vision, mission, plan of activities
- Provision of adequate resources for a nation-wide coverage
- Updated knowledge of the current organisation of the health system (health sector reform, health sector policy)
- Knowledge of the quality of care situation through a baseline survey
- Mechanisms to review and adapt the QA policy regularly
- Monitoring and evaluation of the QA programme

Training in QA

- QA awareness, Quality design, Standards setting, Performance measurement, Problem solving, Quality management principles, QA tools and techniques, etc.
- Pre-service training
- In-service training
- Continuing education

Quality design activities

- Assessment and utilization of community needs and demands to design new health services or re-design existing ones
- Patient's and population's satisfaction surveys

Developing Standards

- Setting and adapting clinical and managerial standards of care
- Development of clinical guidelines and standard operating procedures
- Review/adaptation of standards

Outcome

Improved quality of care

- Technical performance of the health workers
- Better health facility management
- Increased access to care
- Increased efficiency of care
- Increased safety of care
- Improved provider/patient interpersonal relationship
- Increased effectiveness of care

Improved population satisfaction with health services

- Increased utilization of health services
- Increased community involvement in the organisation of health services
- Better appreciation of the health services

Improved health provider satisfaction with working environment

- Increased motivation
- Increased productivity
- Increased morale

Structure

Financial resources

- Budget specific to QA activities

Support systems

- Coaching
- Supervision
- QA training
- QA activities monitoring system

Process

Communication of standards

- Training of the health providers
- Information of the health providers
- Development of job-aids
- Distance education programs
- Any other way to effectively communicate standards

Establishment of incentive methods

- Performance-based reward mechanisms for health providers and health facilities

Quality assessment activities

- Definition of indicators to measure compliance with standards
- Mechanisms for collection of performance indicators on a regular basis (monitoring system, special surveys, HMIS, supervision, self-assessment, etc.)
- Methods used for collecting data on health provider and health facility performance
- Evaluation of technical competency
- Use of performance indicators by the health managers and health providers to re-design the services

Quality improvement activities

- Use of a problem solving/process improvement methodology
- Application of quality management principles

Benchmarking activities

- Identification of best practices and best performers
- Investigation of factors explaining higher performance
- Dissemination of the best practices to other health facilities
- Adaptation of successful approaches by another program or facility

Outcome

Establishment of a QA culture

- QA “mentality” of the providers
- QA management at all levels
- Mechanisms for expression of satisfaction/dissatisfaction of clients with the health system (demand for quality)
- QA commitment expressed at highest levels

QA capacity built

- In-country QA expertise sufficient to carry-out the QA activities of the program
- Understanding of QA by decision-makers

Institutionalised QA activities

- QA activities carried out on a routine basis at appropriate levels
- QA activities sustainable (expertise, resource and commitment are sufficient to apply, adapt, and further develop the QA methods)
- Coverage of the QA program (geographical area, staff category, clinical services, etc.)

Process

Research activities

- Undertaking of operations research on quality of care and QA topics
- Use of the research results to anticipate or solve a quality problem

Regulation activities

- Accreditation of health facilities
- Licensing of health personnel
- Certification of health personnel

Documentation activities of the effectiveness of local QA efforts

- Follow-up mechanism in place for the QAP
- Record system in place
- Storybooks and story boards of success stories and problematic interventions
- Case-study material

Dissemination activities

- Dissemination of research results to targeted audience
- Dissemination of quality of care assessment results to targeted audience
- Dissemination of the status of the QA programme to targeted audience

Community application of QA

- Links between health system and population developed around quality of care issues
- Community involvement in quality design, monitoring and improvement activities

