USAID FROM THE AMERICAN PEOPLE

LEADERSHIP, MANAGEMENT & GOVERNANCE PROJECT
Inspired Leadership. Sound Management. Transparent Governance.

Endline Evaluation of the Leadership, Management, and Governance (LMG) for Midwifery Managers Certificate Course


Photo Credit: Missiani Ochwoto

Author
Missiani Ochwoto, AMREF Evaluative Consultant
Maeve Conlin, Management Sciences for Health

amref health africa | IPPF | Johns Hopkins Bloomberg School of Public Health | Medic Mobile | Yale Global Health Leadership Institute | msh

About the LMG Project

Funded by the US Agency for International Development (USAID), the Leadership, Management, and Governance (LMG) Project (2011–2017) is collaborating with health leaders, managers, and policymakers at all levels to show that investments in leadership, management, and governance lead to stronger health systems and improved health. The LMG Project embraces the principles of country ownership, gender equity, and evidence-driven approaches. Emphasis is also placed on good governance in the health sector—the ultimate commitment to improving service delivery and fostering sustainability through accountability, engagement, transparency, and stewardship. Led by Management Sciences for Health (MSH), the LMG consortium includes Amref Health Africa, International Planned Parenthood Federation (IPPF), Johns Hopkins University Bloomberg School of Public Health (JHSPH), Medic Mobile, and Yale University Global Health Leadership Institute (GHLI).

Funding was provided by the United States Agency for International Development (USAID) under Cooperative Agreement AID-OAA-A-11-00015. The contents are the responsibility of the Leadership, Management, and Governance Project and do not necessarily reflect the views of USAID or the United States Government.

Table of Contents

List of Abbreviations and Acronyms

ACN	Australian College of Nursing
AMREF	Africa Medical and Research Foundation
ANC	Antenatal care
CME	Continuing medical education
FGD	Focus group discussion
FM	Facility managers
GHLI	Yale University Global Health Leadership Institute
IPPF	International Planned Parenthood Federation
JHSPH	Johns Hopkins University Bloomberg School of Public Health
KII	Key informant interview
KMC	Kangaroo mother care
LDP	Leadership Development Program
LDP+	Leadership Development Program *Plus*
LMG	The Leadership Management and Governance Project
L+M+G	Leadership, management and governance
M&E	Monitoring and evaluation
MNCH	Maternal, newborn and child health
MSH	Management Sciences for Health
QI	Quality Improvement
RMNCH	Reproductive, maternal, newborn and child health
SRH	Sexual and reproductive health
SSA	Sub-Saharan Africa
SSI	Semi-structured interview
TOT	Training of trainers
UNFPA	United Nations Population Fund
USAID	US Agency for International Development
WHO	World Health Organization

Acknowledgement

The evaluation team wishes to acknowledge and thank all the trainers in the four countries that were visited by the evaluator who found the time to welcome, host and organize locations of interviews and contact the participants despite their busy schedules. We also wish to thank every trainer in all ten countries who followed up with the midwives to ensure that completed questionnaires reached the AMREF office as well as the evaluator. We would also like to extend a warm thank you to the ministries of health and the directorates of nursing services in all of the countries that this program was implemented for all of their support and guidance.

We also appreciate the LMG Project trained midwives in all the countries for their participation, without whom this report would not have been possible. They sacrificed their work to attend the trainings, the interview and took the time to complete their quality improvement projects.

We appreciate the management of the health facilities who allowed the midwives to attend the training and implement the action plans in their facilities. We acknowledge the facilities that allowed us to use their premises for interviews and also allowed us to access their records. Finally, we sincerely acknowledge the organizers, including the Management Sciences for Health (MSH) team in the USA and the AMREF-Nairobi team, especially Micah Matiang'i and Priscilla Ngunju for all of their hard work throughout the life of this program, and all the administrators in various countries who worked tirelessly to plan and support the entire evaluation exercise.

Introduction and Background

As of 2015, it was estimated that 239,000 maternal deaths occurred annually in developing countries, with 90% of these due to preventable causes.[1] Globally, 830 mothers died daily from preventable causes related to pregnancy and childbirth; 99% of these deaths occurred in Sub-Saharan Africa (SSA). WHO further observed that most of the maternal deaths occur in rural areas where there was poor access to and utilization of health facilities. [2]

In order to meet the health needs of women and newborns, it is important develop a well-trained maternal health workforce, but it is also important to develop maternal health leaders. The United Nations Population Fund (UNFPA) asserts that midwives could deliver up to 87% of the world's reproductive, maternal, newborn, and child health (RMNCH) services.[3] The UNFPA report further recommends the employment of 112,000 midwives in 38 developing countries and questions curricula that teach only clinical skills. Training midwives in leadership, management, and governance skills (shortened to L+M+G throughout) has been identified as a key intervention to ensure effective provision of maternal, newborn, and child health (MNCH) services worldwide[4]. Studies conducted by the Australian College of Nursing (ACN) also established that strong nursing and midwifery leadership leads to better workplace environments, better staff retention, and better patient health outcomes in general.[5] Thus, to transform the quality of health care in lower levels of the health system, especially those in low resource settings, health workers in remote areas need a network of strong leaders in the health system.

The USAID-funded Leadership, Management, and Governance (LMG) Project created the Leadership, Management, and Governance (LMG) for Midwifery Managers Certificate Course, implemented by Management Sciences for Health (MSH) and AMREF Health Africa, to provide midwifery managers with L+M+G skills to address challenges in their communities and improve MNCH outcomes. The course aimed to build the capacity of midwifery managers in selected countries in SSA to improve MNCH outcomes.

To inform the design of the course, the LMG Project conducted a rapid assessment, which included key informant interviews with 16 midwives working in SSA. They found that many midwives were responsible for multiple activities beyond just clinical practice, and gaps in the midwives' L+M+G knowledge and skills emerged. To respond to this need, the LMG Project incorporated key leadership and management skills into the course curriculum, including but not limited to: strategic problem-solving; resource management; change management; teamwork and communication; coaching and mentoring; database management and data use for decision making; monitoring and evaluation; and advocacy and behavior change.

The LMG for Midwifery Managers Certificate Course implementation consisted of a training of trainers (TOT), where two trainers per country were chosen from ten SSA countries and were then trained and

[1] WHO 2015. Trends in Maternal Mortality: 1990 to 2015 Estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division

[2] WHO Maternal Mortality Factsheet updated November 2016: http://www.who.int/mediacentre/factsheets/fs348/en/

[3] State of the World's Midwifery, UNFPA, 2014

[4] WHO 2015. Nursing and midwifery progress report 2008–2012.

[5] Australian College of Nursing (ACN). 2015, Nurse Leadership, ACN, Canberra.

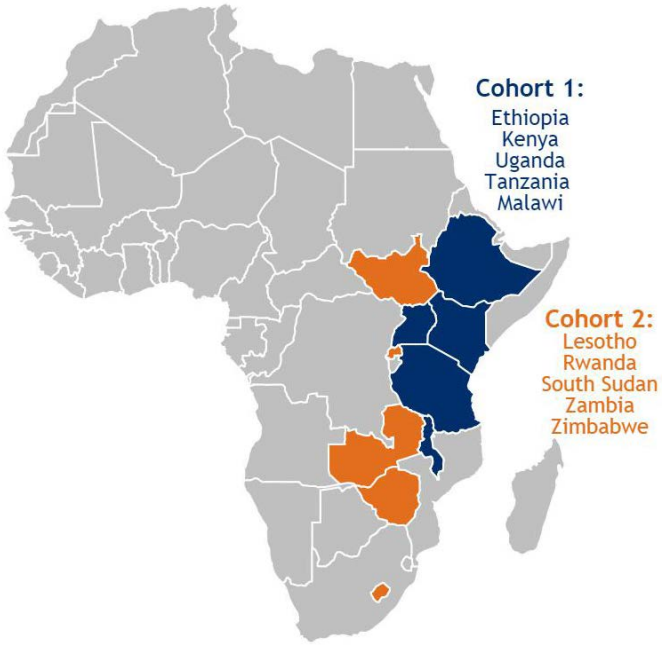
certified to deliver the course content. A total of 20 trainers were certified. These trainers then returned to their home countries to facilitate trainings to ten additional midwife participants. The ten midwives went through a five-day face-to-face training that introduced them to L+M+G practices. By the end of the project, 99 participants completed the program.

In the training, the midwifery participants reflected on challenges they were facing in their communities and health facilities, and then used the Challenge Model tool to develop an action plan to address the priority root causes of their challenges. The Challenge Model is a powerful MSH-developed tool that enables teams to work together using leading and managing practices to address real challenges and achieve results (see Appendix 1).

Following the five-day training, each midwife participant used existing resources within his or her facility to take the action plan designed around their challenge and implement it as a six-month quality improvement (QI) project. Each midwife was assigned one of their in-country trainers to support them throughout the QI project period. The trainees were also encouraged to apply the resource mobilization skills gained during the course to fundraise for resources when necessary. During implementation of the projects, participants provided self-reported data to track and document individual progress towards targets set in their action plans.

The ten countries included in the project (Figure 1) were selected because of country-wide low MNCH indicators: Ethiopia, Kenya Lesotho, Malawi, Rwanda, South Sudan, Tanzania, Uganda, Zambia and Zimbabwe. Five countries participated in the first cohort (June 2014 - April 2015) and the other five were part of the second cohort (April 2015 - December 2015).

Figure 1: Countries who participated in the LMG for Midwifery Managers Certificate Course



Methodology

An endline evaluation of the course was conducted in June and July of 2016. The evaluation intended to collect information to answer two main questions:

1. What were the effects of the LMG for Midwifery Managers Certificate Course?
2. What were key facilitators or barriers to successful implementation of the LMG for Midwifery Managers Certificate Course on L+M+G competencies?

Evaluation Design and Data Collection

This evaluation collected endline data using a one-group post-test only design. Study data was collected using both qualitative and quantitative methods. Quantitative methods included a follow-up survey and a document review of the midwives' action plans and QI project data. The follow-up survey collected information on knowledge and skills acquired through the program, long-term use of key competencies and barriers and facilitators affecting the QI projects. Qualitative data was collected using key informant interviews (KIIs) with selected midwives; focus group discussions (FGDs) with trainers and Facility Managers; and KIIs with trainers. Qualitative data focused on collecting additional information on how the course affected the midwives' daily work environments. Each method, qualitative and quantitative, is discussed briefly below, with more detail found in Appendix 2.

Quantitative Data Sampling and Analysis

For the quantitative data collection, all 99 midwives who participated in the LMG for Midwifery

Managers Certificate Course were sent the Midwives Follow-up Survey electronically. The trainers from each country followed up with the midwife participants to ensure that they completed the survey and sent them to AMREF School of Nursing. It was determined that the minimum sample size necessary for the evaluation was 78[6] participants (only 59 surveys were obtained, see Results section). Analysis of the surveys was done using SPSS statistical software.

For the document review, all 87 action plans[7] and QI project data (see Appendix 4) of the teams who participated in the LMG for Midwifery Managers Certificate Course were reviewed. Data had been submitted monthly for the duration of the QI projects, therefore it was a secondary data source to be analyzed as part of this evaluation. Basic descriptive statistics were performed on the quality improvement projects; categorizing them as complete[8], incomplete or lost to follow-up.

Qualitative Data Sampling and Analysis

The qualitative data was collected via KIIs with selected midwives; FGDs with trainers and Facility Managers; and KIIs with only trainers. For the qualitative data collected, countries were clustered by cohort and then two countries from each cohort were randomly selected. The countries selected for inclusion were Uganda (Cohort 1), Malawi (Cohort 1), Lesotho (Cohort 2) and Zimbabwe (Cohort 2).

Simple random sampling was used to select two midwives per randomly selected country to participate in KIIs. All trainers in each of the randomly selected countries were interviewed.

The qualitative data from KII interviews and FGDs was recorded and transcribed. The interviews were re-read multiple times to acquire a sense of key themes, which were then triangulated across qualitative and quantitative sources.

Results

Sample Characteristics

Of the 99 midwives trained, a total of 59 (59.6%) completed and returned the Midwives Follow-Up Survey Questionnaire (see Table 1). The evaluator had aimed for a sample size of 78 participants. For the site visits, AMREF offices in all four randomly selected countries agreed to participate in evaluation-related activities.

Across the ten countries, survey response rates varied, with the highest response rate in Lesotho and Zimbabwe where all ten of the trained midwives responded and submitted the survey. Ethiopia and Zambia had the lowest response rates. Table 1 shows the number of respondents by country. Seventy-eight percent of respondents were female, which mirrors the breakdown of 86% of midwives trained were female (Table 1). The mean age of the respondents was 39.2 (±1.28) years, and ranged from 26 to 63 years.

[6] Used Fisher et al. formula, 1998 ($p \leq 0.05$ and CI= 95%; $n=Z^2pq/d^2$

Where; $Z^2=1.96^2$, $p=0.5$, $q = 0.5$ (1-p), $d^2=0.05^2$. Therefore, $n = 1.96^2 \times (0.5 \times 0.5) / (0.05)^2 = 384$. Since the total number of LMG Project trained were 98 then $384/[1+(384/98)] = 78$ respondents

[7] Note that 99 midwives were trained, but some worked in pairs; thus 88 action plans were completed.

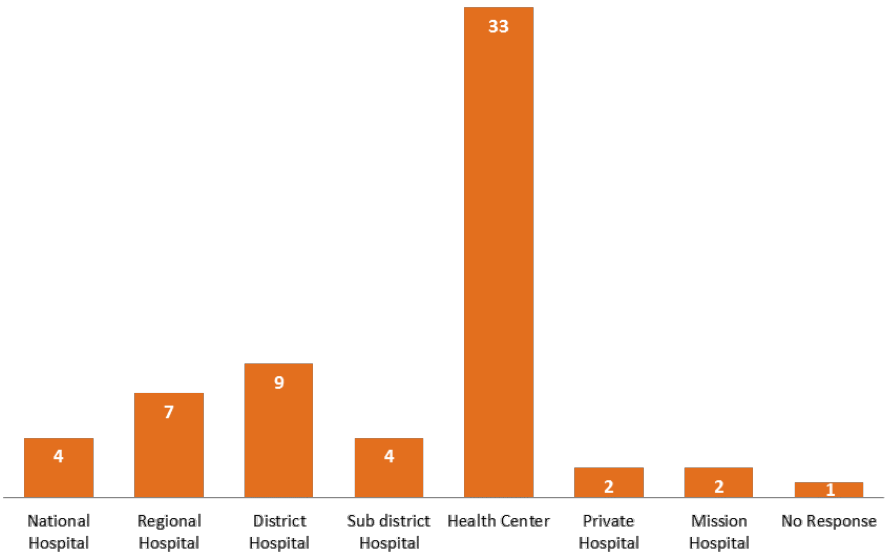
[8] A completed action plan was defined as 80% or more of the target results was met at the final data point

Table 1: Midwives follow-up survey respondents from each country

Country	Number trained	Number of survey respondents	Percentage response (%)	Sex distribution		
				Female	Male	Prefer not to answer
Zimbabwe	10	10	100.0%	9	1	-
Lesotho	10	10	100.0%	5	5	-
Tanzania	10	9	90.0%	8	1	-
Uganda	10	6	60.0%	5	1	-
Rwanda	10	6	60.0%	5	1	-
Kenya	10	6	60.0%	4	2	-
South Sudan	9	5	55.6%	5	-	-
Malawi	10	4	40.0%	4	-	-
Zambia	10	3	30.0%	1	1	1
Ethiopia	10	0	0.0%	-	-	-
Total	**99**	**59**	**59.6**	**46**	**12**	**1**

Many of the survey respondents worked at health centers (n=32, 54.2%), with a few working at district (n=9, 15.3%) and regional (n=7, 11.9%) hospitals. The majority (81.4%, n=48) of the respondents were currently working in the same facilities as when they went through the training, however 18.6% (n=11), had been transferred to other facilities at the time of evaluation.

Figure 2: Facility Distribution of Survey Participants



In the randomly selected countries, a total of eighteen interviews were conducted. Interviews were conducted independently or in groups of two. There were nine KIIs with trained midwives (13 total participants), four with facility managers (four participants), and five KIIs with trainers (seven participants). The number of participants interview in each country can be found in Table 2 below. The FGDs were held with a combination of trainers and facility managers (FM). One focus group was held per country.

Table 2: KII and FGD Participants by Country

Country	# Midwife KIIs participants	# Trainer KII participants	# Facility Manager KII participants	# FGD participants
Lesotho	3	1	1	5 (2 TOT, 3 FM)
Malawi	3	2	1	4 (2 TOT, 2 FM)
Uganda	4	2	1	4 (2 TOT, 2 FM)
Zimbabwe	3	2	1	5 (2 TOT, 3 FM)
Total	**13**	**7**	4	**18**

Summary of Findings of Endline Evaluation

The summary of findings from the interviews and focus group respondents are presented below as organized by evaluation question.

Evaluation Question #1: What were the effects of the LMG for Midwifery Managers Certificate Course?

Knowledge and Skills Acquired

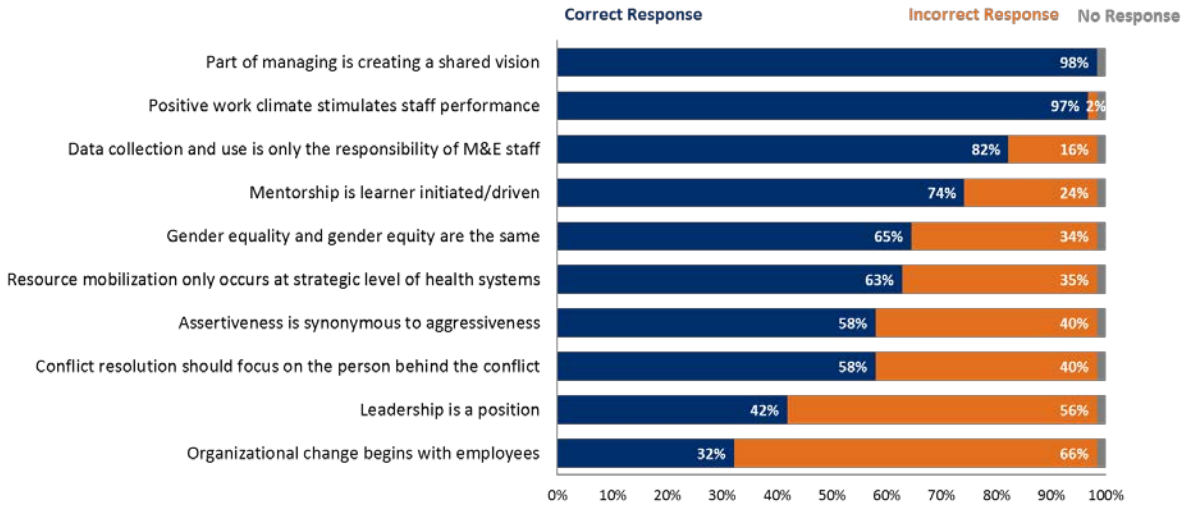
The Midwives Follow-Up Survey asked a series of questions to evaluate the retention of key concepts included in the curriculum. The survey asked additional questions related to how midwives applied skills and translated them into different behaviors in their work environments.

Ten questions were asked to assess the knowledge acquired by the midwives (Figure 3). Each question had a correct response linking to a foundational concept covered in the course content. Respondents agreed or disagreed with each question and responses were subsequently scored. Overall, 60% (n=37) of respondents correctly answered seven or more of the questions.

The respondents correctly recalled the importance of creating a shared vision (98%). Similarly, the majority of the survey respondents correctly agreed that a positive work environment is important for staff performance (97%). Most also correctly identified that data collection is not only the responsibility of M&E staff (82%,) and that the mentorship relationship should be driven by the mentee (74%).

The two lowest scoring questions were that leadership is not just a position (correct response 42%) and that organizational change begins with employees (correct response 32%).

Figure 2: Summary Responses of Course Knowledge Acquired



Translation and Application of Skills

Survey respondents were asked to identify key skills from the course that they applied in their work. For each selected response examples were provided. The most applied skills from the course were techniques to motivate coworkers (85%, n=50) followed by using data to make decisions (71%, n=42). Most survey respondents did not report applying advocacy messages, strategies learned in the course or the application of gender analysis in their workplace. Table 3 provides an overview of the skills midwives identified as most useful in their day-to-day work.

Table 3: Most Useful Skills Identified by Midwives

Applied Skill	Total Number of Respondents		Select Examples of Skill Application
	n	%	
Techniques to motivate co-workers	50	85%	Providing positive feedback; public praise; staff appraisals; acknowledgement of champions; selection for trainings
Using data for decision making	42	71%	Funding/budget forecasting; analysis of monthly unit statistics; maternal and perinatal death audits
Conflict management/ resolution	40	68%	Improved interpersonal communication and negotiation skills; active listening; listening to subordinates and democratically problem solving; providing resources for counseling
Mentorship for junior midwives	40	68%	Improved coaching techniques; CME allocation; training for key skills such as partograph use and newborn resuscitation
Techniques to engage stakeholders	38	64%	Engagement in planning meetings; consistent engagement for daily activities; engagement for proposal writing; community meetings and outreach activities
Developing action plans	37	63%	
Using root cause analyses for challenges	36	61%	Useful for facility-level priority setting and improve key MNCH outcomes (neonatal asphyxia and facility births)
Coaching techniques with unit staff	35	59%	Co-teaching key skills during staff meetings (responses overlap with mentorship of junior midwives)

Table 3: Most Useful Skills Identified by Midwives (cont.)

Applied Skill	Total Number of Respondents		Select Examples of Skill Application
	n	%	
Performance monitoring	34	58%	Improved evaluation and feedback of staff; daily supervision; introduction of checklists for junior midwives; review of job descriptions; review of monthly reports
Identification of key indicators for services	25	42%	Establishing the scope of maternity and priority activities for solving the problems and improving quality services; development of high risk patient protocols; monitoring of supportive supervision
Conducting gender analysis for health care	20	34%	Clear information and updates to policies for staff; male involvement in maternal health
Drafting advocacy messages	17	29%	Development of community messaging of priority health challenges (including breastfeeding, facility delivery, ANC)
Other	7	12%	Use of the Challenge Model; improved critical thinking; use of WhatsApp for group communication

The following sections discuss more in-depth the skills most midwives reported utilizing in their workplaces following the training.

1. Improved skills to motivate coworkers and foster interpersonal relationships

Of the respondents, 85% cited improved emotional intelligence from taking the course and they also felt that they could improve interpersonal relationships with their subordinates and other coworkers as well. Many survey respondents stated they felt better able to motivate coworkers during staff appraisals and also to empower staff to act on professional goals. Others provided more general examples, such as showing public appreciation and integrating positive feedback and encouragement into their daily professional interactions.

Similarly, during the KIIs, the midwives noted that creating strong organizational systems, knowing the importance of transparent communication, and facilitating strong communication with coworkers were all skills they implemented when they returned to their facilities. In Zimbabwe, a midwife described applying her skills from the course after receiving a promotion to Assistant Nurse of the hospital, "After the training, I was promoted. In this position, I put all things in order, I was transparent and I let all the other people know how to run the hospital too so that even if I was not there, the hospital could run." A trainer in Uganda commented on the changes in interpersonal skills with those he coached: "Their interpersonal skills improved significantly. In one hospital, the trainee taught her colleagues these skills and now the interpersonal skills of the staff have improved. Even the people at the gate now have decorum." Here, the trainer highlighted the cascading effects from the training, impacting the not only the health facility staff but also the atmosphere at the facility for patients seeking services.

2. Use of Data in for Decision-Making

Use of data for decision-making was selected by 71% (n=42) of the midwives who participated in the survey and KIIs as a key skill they learned in the course that they used in their day-to-day lives. The midwives interviewed recalled this as a foundational skill applied early in the program in order to select the focus area for the QI projects. They then collected and used the data to monitor the progress of

their projects. Most survey respondents mentioned using data in meetings and reports. These included regular unit meetings where specific indicators, such as maternal or neonatal death audits, would be reviewed and discussed in plenary.

Among all the midwives interviewed, it was clear that the continued use of data for facility decision making and support from their managers was integral to the success of their QI projects. A midwife in Uganda said: "After the training, we now have a meeting with our managers twice a week to discuss the progress of the department." In Lesotho, one midwife said that now that the QI project has ended, she still meets with the facility managers to review unit data and discuss the progress of the facility for key MNCH priorities.

3. Conflict Resolution

Forty (68%) survey respondents mentioned improved conflict resolution skills as a result of taking the LMG for Midwifery Managers Certificate Course. Many of the responses cited that skills like active listening, promoting open dialogue, and negotiation helped the midwives to navigate conflict more productively, which allowed them to suggest solutions between the two parties while maintaining their composure.

4. Mentorship and Coaching skills

Mentorship and coaching were reported as skills 68% of midwives continued to use daily after the training. A common mentoring strategy that the midwives used was to assist in skills building for the junior staff, where newer staff members shadowed senior team members. This involved pairing senior and junior midwives to train on key skills such as partograph use and newborn resuscitation. Strategic allocation of continuing medical education (CMEs) was also mentioned by survey respondents as a way to foster growth of junior midwives.

Self-Reported Behavior Change

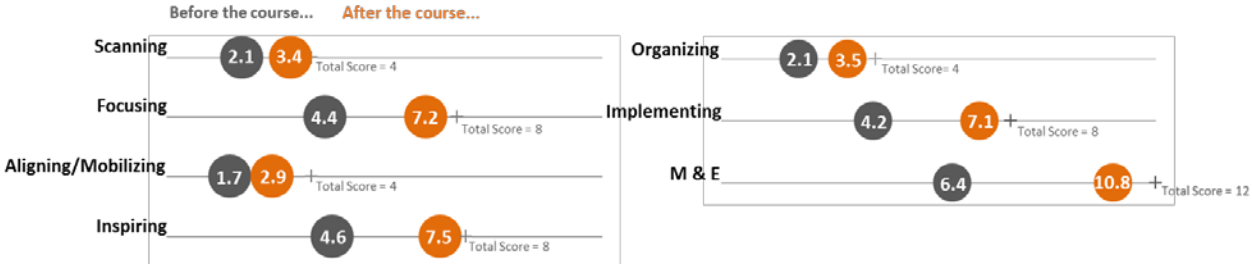
The survey respondents were also asked a series of questions to assess self-reported changes in foundational leading and managing practices from the course (see Appendix 3). The findings from the behavioral self-assessment questions dovetail with the skills midwives reported using most frequently. There were 12 leading and managing practice questions and respondents were asked to reflect on their practice before and after completing the LMG for Midwifery Managers Certificate Course. A total leading score and a total managing score was calculated across all respondents. In aggregate, the midwives who responded to the survey self-reported an increase in both overall leading and managing practices after completion of the course (Figure 4).

Figure 4: Overall Leading and Managing Scores

Individual practices were also assessed for both the leadership and management domains. The leadership domain consists of scanning, focusing, aligning/mobilizing and inspiring. Large gains were self-reported for focusing, including things like developing organizational strategy and priorities; and inspiring, which

included key themes such as fostering interpersonal relationships, mentorship and teamwork. The management domain consists of: planning, organizing, implementing and monitoring and evaluation. Here, the largest improvement was seen in area of M&E and also in incorporating data into decision-making processes. (Figure 5)

Figure 5: Leading and Managing Individual Practice Scores



QI Projects

As the course was structured, all midwives (working individually or in teams of two) implemented a QI project of their choice (see Appendix 4) after completing the course content. Of the 99 midwives trained, there were 87 action plans implemented. For each quality improvement project, the midwives selected a unique challenge in their facility, developed a desired measurable result and targeted and collected six months of data to monitor the progress of their QI initiative against their established goal[9]. The QI projects are the main link between the course content and improvements seen in service delivery.

Of the 87 quality improvement projects, 51% (n=44) achieved the set target, and 36% (n=31) did not meet the target. The remaining 12 quality improvement projects (14%) were missing data or did not submit it to the LMG Project. Below in Table 4 is a summary of the completion rates by cohort. Cohort 1 had significantly more QI projects with missing data. After the first cohort, the LMG Project revised the curriculum to include more material on the importance of data collection and data-driven decision making. Subsequently, the second cohort saw only three QI projects without complete data. The second cohort also saw an increase in the number of QI projects completed successfully, with 63% (n=30) QI projects meeting their target in the second cohort compared to only 36% (n=14) in Cohort 1.

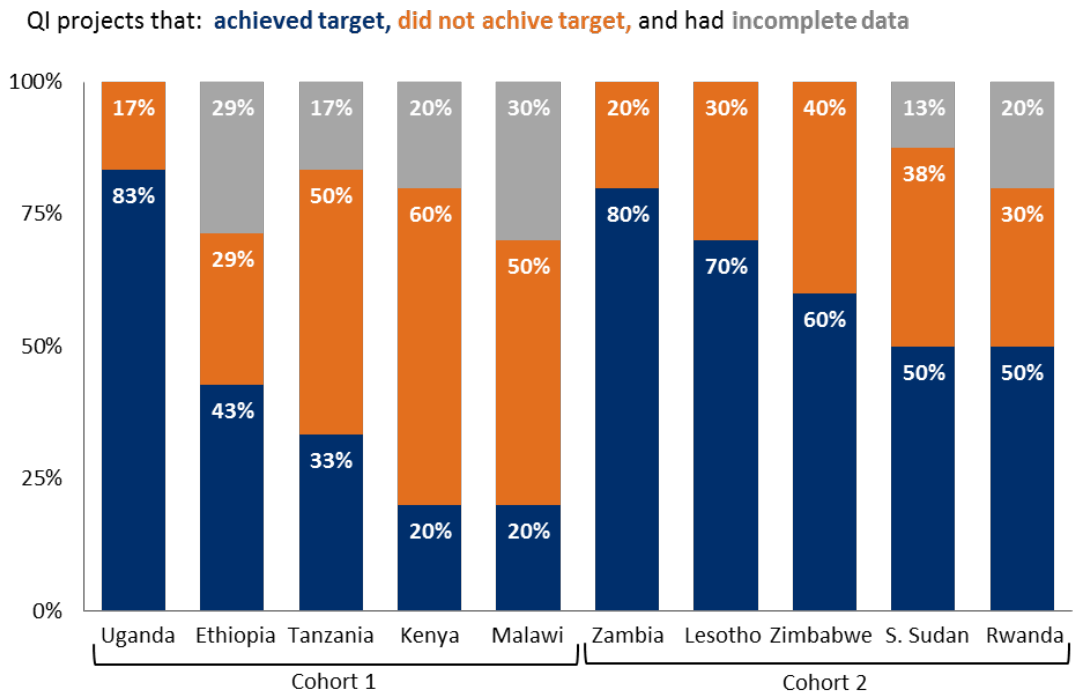
Table 4: LMG for Midwifery Managers Certificate Course QI Project Status

	Cohort 1 QI Projects		Cohort 2 QI Projects	
	#	**%**	**#**	**%**
Target Achieved ***≥80% target***	14	36	30	63
Target Not Achieved ***≤80% target***	16	41	15	31
Missing Data	9	23	3	6%
Total	**39**	**100**	**48**	**100**

[9] Target achievement is defined as ≥80% of the target set at baseline.

There was also variation in the QI project completion rates by country. Uganda (83%, n=5/6) and Zambia (80%, n=8/10) had the highest proportion of those who met the target. Kenya and Malawi had the lowest number of completed projects, with only 20% (2/10) achieving the goal.

Figure 6: QI Project Completion Rates by Country



The QI projects were meant to highlight a contextually specific challenge for each midwife and facility, who then used a root cause analysis to determine a plausible solution. Since the projects were meant to identify contextually specific solutions, the midwives participating in this course often picked different challenges and metrics to assess their personal progress. Despite the variation in desired measurable results, targets, and indicators, each QI project had been tagged with a health system building block and a health area to assess the focus areas of the QI projects undertaken.

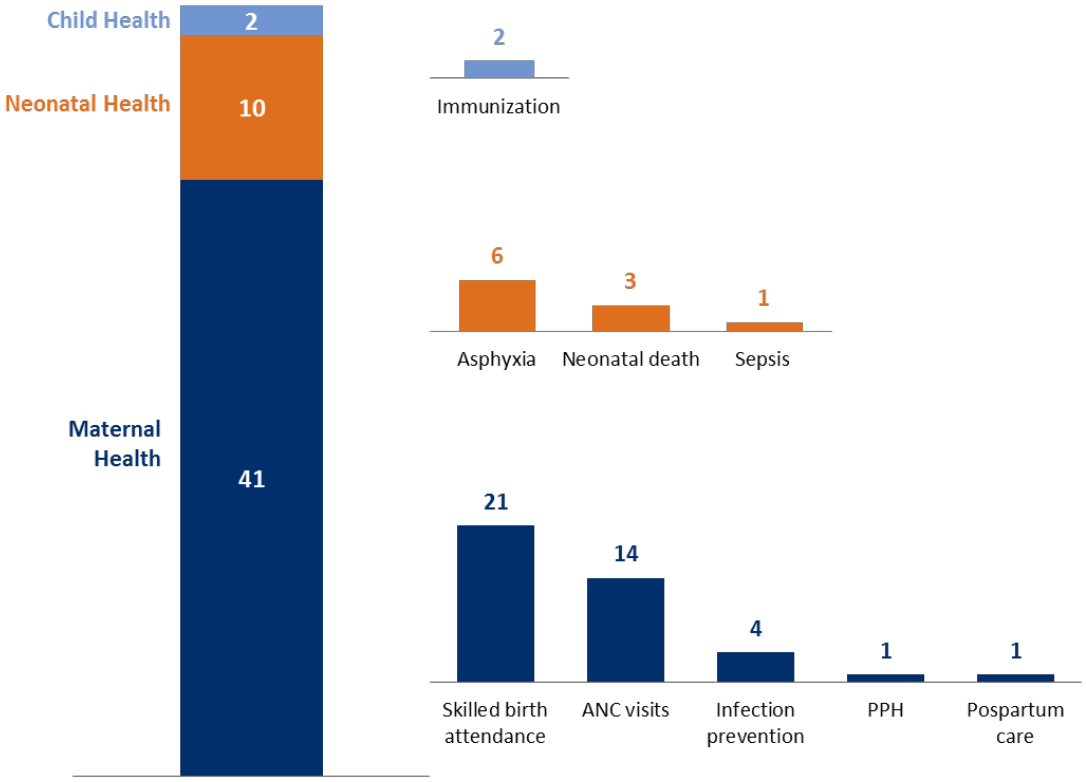
The vast majority of QI projects were service delivery oriented and focused on MNCH related challenges (n=59, 68%) with another seven service delivery QI projects focusing on sexual and reproductive health (SRH). There were no projects that explicitly focused on L+M+G or healthcare financing.

Table 5: Health System Building Block and Health Areas of QI Projects

Health System Building Blocks	Health Areas								
	HIV/AIDs	TB	SRH	MNCH	Malaria	Infectious Disease	Chronic Disease	Other	N/A
L+M+G									
HRH			✓ n=2						
Healthcare Financing									
Medical Products & Technologies								✓ n=1	
Health Information	✓ n=1							✓ n=3	
Health Service Delivery	✓ n=4		✓ n=7	✓ n=59		✓ n=1	✓ n=3	✓ n=2	
N/A									✓ n=4

Since the vast majority of projects undertaken by the midwives were MNCH oriented, further analysis was done to assess the specific focus areas within MNCH (Figure 7). Of the 59 QI projects that were MNCH focused, the majority (n=41) concentrated on maternal health, including areas like increasing the number of births where a skilled attendant was present, increasing the client volume for ANC, and a few focused on infection prevention during delivery. Ten QI projects focused on neonatal health, including decreasing facility rates of birth asphyxia and neonatal sepsis.

Figure 7: QI Projects focused on MNCH



Additional analysis of the QI projects was undertaken to identify if there were trends in the focal areas of successful QI projects. In aggregate, there were no clear trends related to the focus areas for successful projects. For maternal, neonatal and HIV-focused projects, the success rate was about 50%.

Evaluation Question #2: **Barriers and Facilitators to Successful QI Project Implementation**

The endline evaluation was also interested in capturing barriers and facilitators affecting the QI projects undertaken by the midwives as part of the LMG for Midwifery Managers Certificate Course. Both the Midwives Follow-Up Survey and the KIIs provided information on barriers and facilitators faced by the midwives when implementing the QI Projects. The two most frequently cited barriers were workloads (57%, n=35) and resource allocation (62%, n=38). The most commonly indicated facilitators included internal communication (87%, n=53) and availability of information (85%, n=52). Below in Table 6 is a summary of survey responses. The subsequent sections include detailed information on the two more commonly mentioned barriers and facilitators.

Table 6: Facilitators and Barriers to QI Project Implementation

		Total	
		n	%
Organizational culture and work climate	Facilitated		
	Barrier	18	29.5%
	N/A	5	8.2%
Organizational structure or context	Facilitator	33	54.1%
	Barrier	20	32.8%
	N/A	8	13.1%
Staffing	Facilitator	32	52.5%
	Barrier	28	45.9%
	N/A	1	1.6%
Personnel workloads	Facilitator	17	27.9%
	Barrier	**35**	**57.4%**
	N/A	9	14.8%
Allocation of resources	Facilitator	17	27.9%
	Barrier	**38**	**62.3%**
	N/A	6	9.8%
Attitudes and beliefs of personnel in the facility	Facilitator	33	54.1%
	Barrier	20	32.8%
	N/A	8	13.1%
Organizational policies/directives	Facilitator	43	70.5%
	Barrier	8	13.1%
	N/A	10	16.4%
Internal communication	Facilitator	**53**	**86.9%**
	Barrier	3	4.9%
	N/A	5	8.2%
Availability of information	Facilitator	**52**	**85.2%**
	Barrier	2	3.3%
	N/A	7	11.5%
Strategic planning/goal setting	Facilitator	42	68.9%
	Barrier	8	13.1%
	N/A	11	18.0%

Barrier: Staffing, Time and Workloads

Fifty-seven percent of survey respondents noted that personnel workloads were a barrier, which was also a strong theme in the interviews. Respondents overwhelmingly felt that most health facilities were understaffed and thus the additional work was being required of already overworked healthcare personnel.

Among the midwives, understaffed departments and overworked personnel resulted in the need for more time to complete the QI projects. For this evaluation, the six months of QI data were used to determine if the QI project achieved their targets. Additional anecdotal information indicates a few more midwives were ultimately able to achieve their target but required more than six months to do so.

Another theme related to time mentioned in the interviews was that particular types of challenges selected for the QI projects simply require more than six months to see documentable results. The need for additional manpower and time was especially pronounced for those who chose QI projects that included a community mobilization component. As a midwife in Zimbabwe stated, "When you are alone you cannot leave the facility and go to the field for community mobilization, participant follow-up, and data collection."

The trainers reported difficulty finding time to meet individually with midwives to provide follow-up and coaching because of incompatible schedules and intense workloads. One trainer mentioned: "At times you visit the midwife and find that she is alone in the facility. It was hard to sit with the nurse and discuss the project for long when there is a long queue of patients waiting or a mother is in labor...it was easier to communicate via phone as compared to physical visit."

High workloads also hindered the training of additional midwives in the course content which, in the initial design of the program, was to be delivered as a step-down style training. One trainer recalled: "We were expecting the trained midwives to train others (in their facilities), but where there was a shortage of staff, so this was difficult." Midwives in the survey and interviews also mentioned it was difficult to provide services at the clinic while also setting aside enough time to train additional staff.

In the few clinics where staff shortages were less of an issue, midwives reported success in training other health officers who could assist them with data collection. For example, in Lesotho, a midwife trained seven staff members who assisted him in the community mobilization efforts as well as with data collection, helping him to achieve his QI project target and continue to collect data after the QI project ended.

The final staffing related issue that was highlighted in the interviews was the challenge of staff transfers which meant that some midwives had to abandon the project or try to work on the project part-time. Staff transfers affected Malawi more than any other country visited where some of the trainees were to report to school and others were transferred.

Barrier: Allocation of Resources

Thirty-eight midwives (62%) reported that the lack of funding for the QI projects was a major barrier. The midwives were expected to start the QI projects soon after completing the course content. In most countries, the course delivery was not aligned with the annual budget development so most midwives did not receive institutional funding for their initiatives[10] and reported personally funding parts of their projects in order to achieve their goal: "Everything you want to do you have to go through so many bureaucratic ranks; say like four to six ranks, with so many questions to answer especially on the finance. At times I needed money to travel to remote and hard to reach areas so that I could follow up with my project participants. I was turned down about five or six times due to bureaucracy. I never got the money… the local authority refused, saying that the maternity services are free, so where did I want them to get the money from? I never gave up; I used my own money and went to those areas."

A few midwives were successful at getting small stipends for components of their projects, and in focus group discussions, facility managers explained how they assisted midwives to get small stipends for travel for outreach campaigns, printing costs and to buy partographs. One midwife in Kiswa, Uganda reported

[10] Funding of these initiatives by participant's organizations is common in the LDP+

leveraging her QI project for additional support. She focused her action plan on improving partograph completion within the labor and delivery ward, and after successfully completing the project, she was also able to advocate with the institutional leadership to fund a new structure for maternity services. This is a unique situation because few midwives were able to receive funding from their institutions due to the misalignment of the course and funding schedules.

Four other midwives (Table 7) applied the resource mobilization skills learned in the course to lobby for external funding for their QI projects.

Table 7: Use of External Funding Received by Midwives

Country (site)	Source of funding	Desired Measurable Result	Funding Use and QI Project Outcomes
Malawi (Mitindu)	NGO, Interaide	Reduce the percentage of neonatal death due to prematurity from 33.3% to <10% by June 2015 and improve KMC documentation	The funding was used to purchase incubators, heaters and power sockets. Throughout the project period, there was a decline in premature deaths from 46% to 19% by the end of the QI project. There was also an increase in the number of midwives who sought the kangaroo services for neonates, with midwives even traveling to the neighboring country, Mozambique.
Uganda (Jinja)	Private donation	Increase partograph utilization in monitoring mothers in labor from 30% - 90%	The funding secured at Jinja Referral Hospital was used to buy and hang curtains in the labor ward for increased privacy for women delivering in the facility. While not directly tied to the desired measurable result of improving partograph utilization, this was an important factor to increase the women-centered nature of the facility in hopes of increasing the number of women who delivered in the facility.
Uganda (Kawolo Hospital)	Business institution	Increase in partograph use in monitoring of mothers in labor from 15% to 90%	The funding was used to buy additional mattresses and beds for the maternity ward, in hopes of increasing the number of maternity patients utilizing the ward.
Zimbabwe	Private donation	To increase the average monthly essential supplies met need by 20% by November, 2015	Funding was used to buy equipment for pharmaceuticals.

Despite these few success stories, the majority of midwives found the lack of financial support to affect their ability to implement and sustain the QI projects.

Facilitator: Internal Communication, Availability of Information and Organizational Support

The most commonly indicated facilitators included strong internal communication (87%, n=53) and availability of information (85%, n=52). Midwives reported receiving strong support from their institutions for their projects. Many reported that their QI initiatives were widely disseminated by department heads so other staff members knew about their work and were able to assist them. In some instances this help was on a volunteer basis—for example, support in analyzing patient data to monitor the progress of the project—however, in other instances, the midwives could distribute tasks within their units for collective ownership of the projects.

Survey respondents mentioned leveraging existing internal protocols and guidance documents (such as kangaroo mother care protocols, ANC guidelines, and MTUHA books[11]) as key stepping stones for their projects. In many cases, the first step towards their QI goals involved enforcing already existing policies or guidelines so they could collect adequate baseline information and track progress.

In focus groups with the facility managers, they mentioned that they were very impressed with the changes in participants' communication styles and participants' ability to mobilize their units towards collective action. In addition, at two health facilities in Uganda and Lesotho, the managers mentioned that their facility received an award from the Ministry of Health because of the QI projects. In Lesotho, two trophies were given to the Botha Bothe District for being the best performing district in MNCH services, countrywide. When explaining this achievement, a facility manager said, "St. Peter's Health Care in Lesotho was also given a trophy for being the best Health Center in terms of service delivery, based on the challenges which the quality improvement project (focused on) …they have made us proud."

Limitations

There are four important limitations to acknowledge related to the findings presented in this endline evaluation: limitations of the evaluation design itself, biases associated with self-assessment, recall bias, and loss to follow-up.

Evaluation design: The endline evaluation of the LMG for Midwifery Managers Certificate Course was a one-group post-test only design, meaning the evaluation involved only endline data collection. This is a less robust study design because it does not allow for comparison across time or between groups. The collection of pre- and post-measures would allow for change to be assessed over time; however, this endline evaluation only collected endline data. There is also no comparison group, so this evaluation is unable to provide information on the added-value of this course for the midwives who went through the course compared to a control group.

Despite these limitations, this design is useful for exploratory evaluative work and to refine the curriculum for future rollout. Future evaluations should incorporate these findings into additional, more rigorous studies.

Social desirability: Another important limitation is the potential for respondents to provide socially desirable responses. This is a particular limitation for the self-assessment on the behavioral self-assessment questions. For the qualitative data collected as part of this evaluation, the LMG Project used an external evaluator in an attempt to encourage respondents to report actual practices instead of those most socially desirable.

Recall bias: Cohort 1 went through the LMG for Midwifery Managers Certificate Course between June, 2014-April, 2015 and Cohort 2 participated between April, 2015-December 2015. This evaluation was conducted from June to September 2016. It is possible that respondents were unable to report information on changes due to the training with full accuracy and completeness since they were

[11] MTUHA books are a series of registers and manuals for primary data collection within the Tanzanian national HIS system, known as Mfumo wa Taarifa za Uendeshaji Huduma za Afya (MTUHA). MTUHA books allow for aggregation of primary facility register data for reporting and aggregate calculations.

reporting experiences from the past. The evaluation team attempted to control for recall bias by asking survey respondents to provide examples for all questions. This was so that they were required to elaborate in their responses and also to provide specific examples in their work environments in which they applied leading and managing skills from the course.

Non-response: For the follow-up survey, loss to follow-up is a limitation of the survey results. Ethiopia had no midwives submit survey responses, Malawi had a 40% response rate (n=4) and Zambia had a 30% (n=3) response rate. A loss to follow-up analysis was completed, and can be found in Appendix 5.

Recommendations and Conclusion

Information gathered from the midwives, facility managers and trainers in this evaluation indicate that participants report increased capacity to lead and manage, which allowed them to address barriers and solve complex problems in their day-to-day work. Participants in the LMG for Midwifery Managers Certificate Course across all ten countries overwhelmingly reported improved teamwork, joint problem solving, documentation, and conflict resolution, which were also mentioned by the facility managers for whom they work. Furthermore, these improved skills were reportedly sustained for one to two years after the completion of the course when the endline Follow-Up Survey and interviews were conducted.

The LMG for Midwifery Managers Certificate Course was a new course that incorporated the key elements of the LDP/MSH signature program in its design. The LDP and its different adaptations have been implemented in a variety of developing countries by MSH over the past few decades. Similar reports of improved emotional intelligence have been documented, albeit mostly from similar endline evaluations. The LMG Project has also conducted a quasi-experimental mixed study to evaluate the added-value of the LDP+ in combination with a clinical training. Results show that the LDP+ intervention led to a statistically significant increase in the number of women who received counseling during antenatal care (0% to 57%) and postnatal care (17% to 80%) compared to the clinical training intervention alone. The collective body of evidence seems to indicate that improving leading and managing skills helps healthcare workers to navigate and solve complex service-delivery problems; however, further rigorously documented evaluation and research is needed to more clearly identify casual pathways.

Despite the self-reports that those who were trained applied these core skills and changed their personal behavior, only 51% (n=44) of the midwives achieved their QI project objective within the six month period, indicating a potential gap in the translation of these skills to service delivery improvement. The QI project low success rate could be attributable to many factors described below. One factor can be attributed to the data collection processes. Efforts to strengthen the M&E component of the curriculum after Cohort 1 seem to have been positive; Cohort 2 had 63% of projects successfully achieve their target; this cohort also reported a large decrease in the number of teams who did not submit six months of data. We hypothesize that the strengthening M&E component might have influenced the improvements in the number of teams reporting data. However, a review of the QI projects indicates that additional coaching and oversight on goal-setting, baseline data collection and indicator development would be useful to bolster the curriculum. A review of the QI projects indicates some midwives did not set realistic targets or erroneously estimated baseline data points, indicating

there might be a need to provide additional support to set realistic targets as part of the curriculum.

A common challenge mentioned by participants and trainers was the six-month timeframe for the QI projects. Some noted that QI projects with larger scopes—like those that involved community mobilization or required demand-side community change—were less likely to show documentable progress in such a short period of time. This again is important information to incorporate in future program delivery so that QI projects are permitted more than six months for implementation or so that coaches work with midwives to select projects that are achievable within the given timeframe.

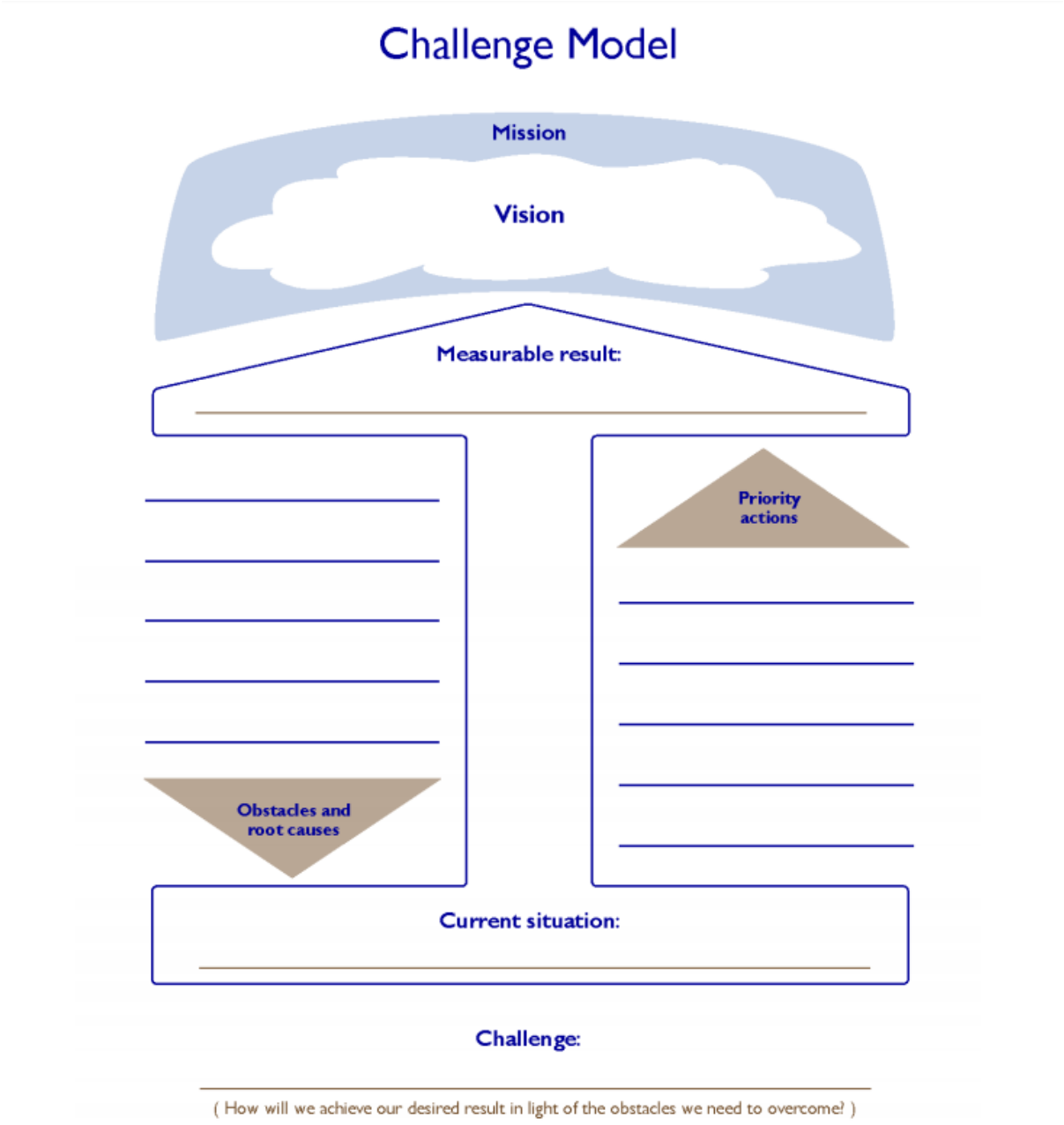
Another possible confounding factor that could have affected QI Project achievement is that, unlike the LDP+ which is a team-based experiential learning approach, the LMG for Midwifery Managers Certificate Course selected individual midwives from facilities who often worked independently (or maximum in teams of two) on selected QI projects. The qualitative data suggests that midwives who were most successful were those that returned to their facilities and assembled a team to plan and implement QI projects together; this indicates that collective action and team ownership might be an important success factor to address complex service delivery challenges.

A major hallmark of the LMG for Midwifery Managers Certificate Course is the adaptability of the course, which allowed participants to address specific needs within their own communities. However, without rigorous implementation documentation, we can only hypothesize mechanisms that would be needed to strengthen the curriculum, improve support to participants and increase the number of successful QI projects. The evaluation findings underscore the importance of continued efforts to strengthen how monitoring data is collected and used in real time to better understand how the course can support trainees as they translate their increased capacity to lead and manage into better services for their communities.

It is clear from endline evaluation that participants found the LMG for Midwifery Managers Certificate Course to be useful and reported that they were able to apply foundational concepts to improve their working environments and foster team-based problem-solving. Facility managers echoed these sentiments and underscored the added benefits of the training, like staff in units that were committed to evidence-based decision making, improving staff mentoring and motivation, and, in some cases, external recognition for the improvements.

Appendices

Appendix 1: Challenge Model



Appendix 2: Data Collection and Sampling Strategy

Evaluation Sub-Questions	Data Collection Method	Frequency	Source	Total Sample	Sampling Strategy
What knowledge and skills have been acquired by the midwives who participated in the LMG for Midwifery Managers Certificate Course?	Midwives Follow-Up Survey	Endline	Primary	99 midwives	• **All LMG Project participants** • **Hard copy distribution**
	Key Informant Interviews-Midwives	Endline	Primary	8 midwives	• **Randomly selection after cluster random selection of participating countries (n=2 per country)** • **LMG Project participants** • **In person interviews**
How did the midwives' behaviors and practices change in their daily work following the LMG for Midwifery Managers Certificate Course?	Midwives Follow-Up Survey	Endline	Primary	99 midwives	• **All LMG Project participants** • **Hard copy distribution**
	Key Informant Interviews-Midwives	Endline	Primary	8 midwives	• **Randomly selection after cluster random selection of participating countries (n=2 per country)** • **LMG Project participants** • **In-person interviews**
	Action Plans	6 months	Secondary	87 action plans	• **All LMG Project Teams**
What are the effects of service delivery improvement projects on service delivery and maternal, child, and newborn health at beneficiary sites?	Midwives Follow-Up Survey	Endline	Primary	99 midwives	• **All LMG Project participants** • **Hard copy distribution**
	Key Informant Interviews-Midwives	Endline	Primary	8 midwives	• **Randomly selection after cluster random selection of participating countries (n=2 per country)** • **LMG Project participants**
What are key facilitators or barriers to successful implementation of the Leadership, Management and Governance (LMG) for Midwifery Managers certificate course L+M+G competencies?	Midwives Follow-Up Survey	Endline	Primary	99 midwives	• **All LMG Project participants** • **Hard copy distribution**
	Focus Group Discussions	Endline	Primary	16 participants (8 TOT participants and 8 facility managers)	• **Purposeful selection of TOT participants from randomly selected countries (n=2 per country)** • **Purposeful selection of the facility manager in midwife facilities (n=2 per country)** • **In person interviews**
	Key Informant Interviews-Midwives	Endline	Primary	8 midwives	• **Random selection after cluster random selection of participating countries (n=2 per country)** • **LMG Project participants** • **In person interviews**

From the participant perspective, what are key factors that influenced uptake of the course content?	Midwives Follow-Up Survey	Endline	Primary	99 midwives	• **All LMG Project participants** • **Hard copy distribution**
	Key Informant Interviews-TOT Participants	Endline	Primary	8 TOT participants	• **Purposeful selection of TOT participants from randomly selected countries (n=2 per country)** • **In person interviews**
What were the facilitators and barriers to facilitating the training with the midwives?	Key Informant Interviews-Midwives	Endline	Primary	8 midwives	• **Randomly selection after cluster random selection of participating countries (n=2 per country)** • **LMG Project participants** • **In person interviews**
How does LMG for Midwifery Managers Certificate Course influence hospital leaders/managers' attitudes and practices within MNCH services?	Focus Group Discussions	Endline	Primary	2 TOT participants and 2 facility managers	• **Purposeful selection of TOT participants from randomly selected countries (n=2 per country)** • **Randomly sample facility manager in midwife facilities** • **In person FGD**
	Key Informant Interviews-Midwives	Endline	Primary	8 midwives	• **Random selection after cluster and random selection of participating countries (n=2 per country)** • **LMG Project participants** • **In person interviews**
What aspects of LMG Project training have been embraced at facility level (continuous education)? Where and how can LMG be integrated with existing programs to build midwives capacity? Which other scale up opportunities are there in each country?	Focus Group Discussions	Endline	Primary	2 TOT participants and 2 facility managers	• **Purposeful selection of TOT participants from randomly selected countries (n=2 per country)** • **Randomly sample facility manager in midwife facilities** • **In person FGD**
	Key Informant Interviews-Midwives	Endline	Primary	8 midwives	• **Random selection after cluster random selection of participating countries (n=2 per country)** • **LMG Project participants** • **In person interviews**
What, if anything, has been scaled up or institutionalized from the training at the facility level?	**Focus Group Discussions**	**Endline**	**Primary**	**2 TOT participants and 2 facility managers**	• **Purposeful selection of TOT participants from randomly selected countries (n=2 per country)** • **Randomly sample facility manager in midwife facilities** • **In person FGD**

Appendix 3: Leading and Managing Practices

Leading

SCANNING

- Identify client and stakeholder needs and priorities
- Recognize trends, opportunities and risks that affect the organization
- Look for best practices
- Identify staff capacities and constraints
- Know yourself, your staff, and your organization: values, strengths, and weaknesses

ORGANIZATIONAL OUTCOME: *Managers have up-to-date, valid knowledge of their clients, the organization, and its context; they know how their behavior affects others.*

FOCUSING

- Articulate the organization's mission and strategy
- Identify critical challenges
- Link goals with the overall organizational strategy
- Determine key priorities for action
- Create a common picture of desired results

ORGANIZATIONAL OUTCOME: *Organization's work is directed by well-defined mission, strategy and priorities.*

ALIGNING / MOBILIZING

- Ensure congruence of values, mission, strategy, structure, systems, and daily actions
- Facilitate teamwork
- Unite key stakeholders around an inspiring vision
- Link goals with rewards and recognition
- Enlist stakeholders to commit resources

ORGANIZATIONAL OUTCOME: *Internal and external stakeholders understand and support the organization's goals and have mobilized resources to reach these goals.*

INSPIRING

- Match deeds to words
- Demonstrate honesty in interactions
- Show trust and confidence in staff, acknowledge the contributions of others
- Provide staff with challenges, feedback and support
- Be a model of creativity, innovation and learning

ORGANIZATIONAL OUTCOME: *Organization displays a climate of continuous learning and staff show commitment, even when setbacks occur.*

Managing

PLANNING

- Set short-term organizational goals and performance objectives
- Develop multi-year and annual plans
- Allocate adequate resources (money, people and materials)
- Anticipate and reduce risks

ORGANIZATIONAL OUTCOME: *Organization has defined results, assigned resources and an operational plan.*

ORGANIZING

- Ensure a structure that provides accountability and delineates authority
- Ensure that systems for human resource management, finance, logistics, quality assurance, operations, information and marketing effectively support the plan
- Strengthen work processes to implement the plan
- Align staff capacities with planned activities

ORGANIZATIONAL OUTCOME: *Organization has functional structures, systems, and processes for efficient operations; staff are organized and aware of job responsibilities and expectations.*

IMPLEMENTING

- Integrate systems and coordinate work flow
- Balance competing demands
- Routinely use data for decision making
- Coordinate activities with other programs and sectors
- Adjust plans and resources as circumstances change

ORGANIZATIONAL OUTCOME: *Activities are carried out efficiently, effectively and responsively.*

MONITORING and EVALUATING

- Monitor and reflect on progress against plans
- Provide feedback
- Identify needed changes
- Improve work processes, procedures and tools

ORGANIZATIONAL OUTCOME: *Organization continuously updates information about the status of achievements and results and applies ongoing learning and knowledge.*

Appendix 4: Summary of QI Project Status

Country	Team Name	Desired Measurable Result	Target Achieved
Kenya	Kaia Dispensary	To increase the number of deliveries by skilled birth attendants from 2 to 6 per month by December 2014.	No
Kenya	Kaiti Sub County	To increase safe delivery by skilled birth attendant in Kaiti sub-county from 27% to 60% by December 2014.	Missing Data
Kenya	Kilala Health Center	To increase the number of women screened for cervical cancer from 2 to 10 per month by December 2014.	Yes
Kenya	Kilungu Sub County Hospital	To increase the number of deliveries by skilled birth attendants from 34 to 47 per month from July 1 through December 31, 2014.	Yes
Kenya	Kyenzeni Dispensary	To increase the number of Antenatal Care mothers attending fourth visit from 1 to 5 per month by December 2014 at the Engavu sub-location.	No
Kenya	Kyuasini Health Centre	To increase the number of deliveries by skilled birth attendants from 4 to 10 per month by December 2014.	Missing Data
Kenya	Mbuini Dispensary	To increase the number of deliveries by skilled birth attendants from 6 to 12 per month by December 31, 2014.	No
Kenya	Mukuyuni Health Centre	To increase the number of women screened for cervical cancer at Mukuyuni heath center from 2 to 20 per month by the end of December 2014.	No
Kenya	Musalala Dispensary	To increase the number of deliveries by skilled birth attendants from 1 to 10 per month by December 31, 2014.	No
Kenya	Iuani Health Centre	To increase the number of deliveries by skilled birth attendants from 4 to 10 per month by December 2014.	No
Tanzania	Ligula Hospital Group 1	To reduce perinatal deaths due to birth asphyxia from 48% to 41% per six months by the end of July 2015.	No
Tanzania	Ligula Hospital Group 2	To reduce sepsis to antenatal and postnatal mothers from 5% to 4% by the end of June 2015 at Ligula referral hospital Mtwara Regional.	No
Tanzania	Likombe Health Center	To reduce the number of early neonatal death from 5 to 1 every month by end of June 2015.	Missing data
Tanzania	Newala District Hospital	To reduce the number of early neonatal death due to asphyxia from 13 to 10 per quarter by June 2015.	Yes
Tanzania	Mangaka Health Center	To reduce the number of neonates admitted monthly due to neonatal sepsis from 4 to 0 by the end of June 2015.	No
Tanzania	Mikindani Healthy Center	To increase the number of male involvements at RCH clinics during first visits from 2 males to 8 males per month at Mikindani H/C by the end of July 2015.	Yes
Malawi	Daeyang Luke Hospital	To increase the number of premature babies initiated on Kangaroo Mother Care by 90%.	Yes
Malawi	Kamuzu Central Hospital	To reduce the cases of women registered in the admission book with unknown HIV status to 5%.	No
Malawi	Kabudula Community Hospital	Increase the number of pregnant women utilizing antenatal services during the first trimester from 8% to 15%.	Yes
Malawi	Kasungu District Hospital	Increase the number of pregnant mothers attending ANC in their first trimester by 20% by December 2014.	No

Malawi	Kasungu District Hospital	To reduce number of puerperal sepsis cases from 19% to 5%.	Yes
Malawi	Kawale	Reduce the proportion of PPH in relation to total obstetric complications by 20% by January 2015.	No
Malawi	Mitundu Community Hospital	Reduce the percentage of neonatal death due to prematurity from 33.3% to <10% by June 2015 and improve KMC documentation.	Yes
Malawi	St Gabriels' Hospital	Increase number of pregnant women starting antenatal care during first trimester by 15%.	No
Malawi	Chileka Health Centre	Increase the number of deliveries by 10% to an average of 10 clients per month by the end of 6 months.	Missing data
Malawi	Kamuzu Central Hospital	Health education and number of postnatal check-ups increased by 30% by September 2014.	Missing data
Uganda	Jinja Referral Hospital	Increase partograph utilization in monitoring mothers in labor from 30 % to 90%.	Yes
Uganda	Kawolo Hospital	Improving the punctuality of midwives on duty from 30% to 90%.	Yes
Uganda	Kiswa H. Center	Increase in partograph use in monitoring of mothers in labor from 15% to 90%.	Yes
Uganda	Paragon Hospital	Capacity building in nursing documentation from 5% to 90%.	Yes
Uganda	Domiciliary Home	Capacity building among midwives on partograph utilization in monitoring labor from 50% to 85%.	No
Uganda	Entebbe Hospital	Capacity building in nursing documentation from 5% to 90%.	Yes
Ethiopia	Yeka Kifle Woreda 8 Health Center: Delivery Unit	To increase the average number of deliveries with skilled birth attendants per month from 6 to 12 at the end of Yekatit 2007 EC (2015) in our health center.	Yes
Ethiopia	Guta Meda Health Center	Increase the number of first visit ANC follow up from 4.9% to 9.8%.	Yes
Ethiopia	Addis Ketema Health Center-Millennium Health Center	Increase ANC care/skilled birth "package" in health center from 2 to 3 deliveries/month to 12 to 19.	No
Ethiopia	Kolfe Keraniyo Health Center	To increase delivery service by skilled birth attendant from 6.7% to 13.4%.	Yes
Ethiopia	Nifase Silk Lafte	To increase delivery service by skilled birth attendant from 27% to 47% by March 14, 2014.	No
Ethiopia	Gulele	Increase the number of first ANC visit follow-ups from 20% to 40% within six months.	Missing data
South Sudan	Nyokuron PHCC	Increase the number of women attending ANC with male partners from 6 to 30 per month from May-October, 2015.	Yes
South Sudan	MOH Ross Health Center	Increase the number of deliveries from 4 to X at health facility from May-November, 2015.	Missing data
South Sudan	Munuki Health Center	Train midwives in infection prevention from 0-100% of midwifery staff from May-October, 2015.	Missing data
South Sudan	Juba Teaching Hospital	Increase the number of deliveries in the hospital from 634 to 1268 normal deliveries per month from May-October 16, 2015.	Missing data
South Sudan	Malkia PHCC	Increase the percentage of clients reporting that they received “very good service” from 26.7% to 80%.	Yes

South Sudan	Gurei Primary Health Center	Increase the proportion of women attending ANC with male involvement from 1% to 10% from May-October, 2015.	Yes
South Sudan	St. Kizito Health Center	Increase the number of males who accompany their wives to the first ANC visit by 10%.	Yes
South Sudan	MOH	Increase the percentage of clinic managers completing all 4 required forms from 50% to 100% by October, 2015.	No
Zimbabwe	Birchenough Bridge Hospital	Increase the skilled birth attendant skills of junior midwives from basic to advanced level in 6 months.	No
Zimbabwe	Chimanimani Hospital	Increase infant HIV/AIDS testing uptake at 6 weeks post-delivery by 66.6% from 100% at Chimanimani Hospital, Zimbabwe by November, 2015.	No
Zimbabwe	Ndamga District Hospital	To increase the monthly average of essential supplies by 20% to meet communities' need and stop stock outs by November, 2015.	Yes
Zimbabwe	Nyanyadzi Rural Hospital	Increase the use of postnatal care services by 20% at Nyanyadzi Rural Hospital, Zimbabwe by November, 2015.	Yes
Zimbabwe	Masvingo Provincial Hospital	Increase eligible male involvement in perinatal services from 20 to 40% by November 2015.	Yes
Zimbabwe	Mucheke Community Health Centre	Reducing EMTCT defaulters from 22.6% to 2% in 6 months at Mucheke Community Health Centre.	Yes
Zimbabwe	Biriiri Rural Hospital	Increase male uptake in EMTCT by 50% by October 2015.	No
Zimbabwe	Nyahode Community	Increase early first ANC booking visits from 33% to 60%.	No
Zimbabwe	Nyajena Rural Hospital	Increase first antenatal visit before 14 weeks' gestation by 25% within 6 months.	Yes
Zimbabwe	Morgenster Mission Hospital	Eliminate neonatal deaths in 6 months.	Yes
Zambia	Batoka RHC	Increase the percentage of male involvement in ANC from 29% to 50% by end of October, 2015.	Yes
Zambia	Kamwanu HC	Increase the percentage of pregnant women delivering at health facilities from 36% to 50% within 6 months.	Yes
Zambia	Popota RHC	Increase the percentage of facility delivering from 47.8% to 60% within 6 months.	Yes
Zambia	Shapande HC	To increase ANC bookings <14 weeks gestation from 4% to 30% within 6 months.	Yes
Zambia	Sikalongo RHC	Increase the percentage of fully immunized children from 40% to 60% within 6 months.	Yes
Zambia	Sibanyati RHC	Increase the percentage of skilled delivering from 30% to 60% within 6 months.	Yes
Zambia	Mang'unza RHC	Increase the percentage of first ANC attendees from 59% to 70% by end of October 2015.	Yes
Zambia	Mapanza RHC	Increase the percentage of first ANC attendees before 14 weeks' gestation from 6% to 30% by end of October, 2015.	Yes

Zambia	Mbabala RHC	Increase percentage of fully immunized children from 34% to 60% by end of October, 2015.	No
Zambia	Railway Surgery	Increase the percentage of institutional deliveries from 56% to 70% by end of October 2015.	No
Rwanda	Ruhengeri District Hospital North province	To reduce the rate of post-operative infection to less than 1% in 6 months.	No
Rwanda	Butare Teaching Hospital North province	To reduce the rate of neonatal asphyxia in normal neonates by 4% in 6 months.	Missing data
Rwanda	Bushenge District Hospital West province	To reduce post-caesarian section infection by 2% in 6 months.	Missing data
Rwanda	Kibuye District Hospital West province	To reduce post-caesarian section infection by 4% in six months	Yes
Rwanda	Gisenyi Districy Hospital West province	To eliminate post-operative infection in 6 months.	Yes
Rwanda	Nyagatare District Hospital East province	To reduce rate of neonatal asphyxia from 21.9% to 1% in 6 months.	No
Rwanda	Byumba District Hospital North province	To reduce neonatal asphyxia from 4.7% to 1%.	No
Rwanda	Kibungo District Hospital East province	To eliminate post-caesarian infection in 6 months.	Yes
Rwanda	Kibagabaga District Hospital Kigali	To increase the percentage of mothers tested for HIV during labor by 30% within six months.	Yes
Rwanda	Rwamagana District Hospital East province	To reduce the rate of neonatal asphyxia in normal neonates from 6.4% to 1% in maternity.	Yes
Lesotho	Muela Health Center	Increase percentage of pregnant women attending first ANC from 36% to 50% within 6 months.	Yes
Lesotho	Ngoajane Health Center	By October 2015, the number of ANC attendees will increase from 30% to 60%.	No
Lesotho	St. Paul Health Center	Increase the percentage of pregnant women delivering at St. Paul Hospital Health Center from 7% to 15%.	Yes
Lesotho	Tsime Health Center	By October 31, 2015, the percentage of pregnant women attending ANC within the first trimester in our catchment area will be increased from 14% to 25%.	Yes
Lesotho	St. Peters Health Center	By October 2015, the number of facility-based deliveries by skilled personnel will have increased by 25%.	Yes
Lesotho	Ts'akholo Health Center	By the end of October 2015, there will be increase of facility deliveries by skilled personnel from 4.5% to 10% within the Ts'akholo catchment area.	Yes
Lesotho	Kolo Health Center	By October 31, 2015 there will be an increase in number of deliveries conducted by skilled personnel from 10% to 30% within the Kolo catchment area.	Yes
Lesotho	Malealea Health Center	By November 2015, 20% to 85.7% deliveries shall be conducted by skilled personnel at health center.	No

Lesotho	Lehloop Health Center	To increase the number of HIV positive pregnant mothers attending ANC at first trimester from 19% to 20% by October, 2015.	No
Lesotho	Mafeteng Masemouse Health Center	By November 2015, increase from 28% to 50% the number of deliveries conducted by skilled personnel in the health center.	Yes

Appendix 5: Loss to Follow-Up Analysis

Of the 99 midwives trained, a total of 59 (59.6%) completed and returned the midwives follow-up survey questionnaire. Setting the confidence level of 95% (the probability that the responses received accurately reflect the true mean for the universe of 99 midwives), and setting the margin of error or confidence interval (percentage describing how close the mean of received responses is to the "true value" in the universe of 99 midwives) at p ±.05p, or 5%, the sample size is 79. **The evaluator was right in aiming for a sample size of 78 survey responses.**

Across the ten countries, survey response rates varied, with the highest response rate in Lesotho and Zimbabwe where all ten of the trained midwives responded and submitted the survey. Three countries had a survey response rate of less than 50% (Malawi 40%, Zambia 30%, and Ethiopia 0%). Ethiopia and Zambia had the lowest response rates. There was not a single survey response from Ethiopia, and only three out of ten from Zambia. **The survey findings will clearly not be applicable to Ethiopia since we have no survey response from Ethiopia.**

Gender-wise, 46 female midwives and 12 male midwives responded to the survey. Seventy-eight percent of respondents thus were female. In all, 85 female midwives were trained (86% of the total 99 trained) and 14 male midwives were trained (14% of the total 99 trained). The response rate among female midwives is 54.11% whereas among male midwives is 85.71%. Clearly, there is lower survey response rate among female midwives. **Specifically, the probable reasons for lower response rate from female midwives in comparison to male midwives, and lower response rate from Malawi, Zambia, and Ethiopia in comparison to the rest of the seven countries should be clearly recorded in the evaluation report.**

Non-response bias impact assessment: Recently, Baruch, Yehuda, and Holtom (2008) examined response rates in organizational studies, and updated the evidence on the subject.[12] They analyzed 1607 organizational studies published in the years 2000 and 2005, and identified 490 different studies that utilized surveys. They examined the response rates in these studies, which covered more than 100,000 organizations and 400,000 individual respondents. **The average response rate for studies that utilized data collected from individuals was 52.7 percent with a standard deviation of 20.4**, while the average response rate for studies that utilized data collected from organizations was 35.7 percent with a standard deviation of 18.8. They suggest the benchmark or norm should be within one standard deviation of the average. **Going by this benchmark, a 60% response rate in the midwives' evaluation is acceptable.**

Worst-case scenario analysis: An option to determine if loss to follow-up can seriously affect results and if the respondents are different from the non-respondents in ways that might threaten the generalizability of the findings is to assume a worst-case scenario with the missing data and see how the results change. Our worst case would be those who did not respond to the survey had very poor outcomes, e.g. very poor retention of key concepts included in the curriculum, and a very low level of acquisition of skills.

In the survey, ten questions were asked to assess the knowledge acquired by the midwives. Overall, 37 respondents correctly answered seven or more of the questions. In the worst case, we have to assume

[12] Baruch, Yehuda, and Brooks C. Holtom. "Survey response rate levels and trends in organizational research." Human relations 61, no. 8 (2008): 1139-1160.

none of the non-respondents correctly answered any of the ten questions. In this worst-case scenario, we can claim 37% - 37 out of 99 (and not 60% - 37 out of 59) of respondents retained key concepts included in the curriculum. Likewise, indicators of improvements in the skills might stand downgraded in the worst-case scenario.

www.LMGforHealth.org