



**QUALITY IMPROVEMENT FOR MATERNAL AND
NEWBORN HEALTH IN MALAWI AND UGANDA:
A Cross-Country Analysis of Learning
from the Saving Newborn Lives Project**



Save the Children®

ACKNOWLEDGEMENTS

Authors:

Mary Kinney, Save the Children
Erica Corbett, Consultant
Steve Wall, Save the Children

In producing this brief, we have drawn upon documentation and evaluation data that have been collated for the purposes of a range of unpublished project reports. Those who have kindly contributed to the research, interpretation, writing, and processes that have informed this documentation include:

- The Center for Human Services/University Research Co., LLC team: Jorge Hermida, Richard Kagimu-Musoke, Juliet Namukasa, Hussein Kato, and Anjali Chowfla;
- SCI Uganda SNL team: Berina Kamahoro, Richard Mayanja, Sam Ongom, Patricia Pirio;
- SCI Malawi SNL team: Gedesi Banda, Kondwani Chavula, Lydia Chitembo, Victoria Lweshu;
- Save the Children (United States) team: Lauren DuComb, Etienne Franca, Samantha Herrera, Elaine Scudder, Bina Valsangkar, Lara Vaz, Lyndsey Wilson-Williams;
- Consultants: Queen Dube, Jolly Beyeza-Kashesya, Tom Ediamu.

Cover Photo: Alicia Adler/Save the Children

Credits:

This work has been made possible and supported by a grant made that was generously made available by the Bill and Melinda Gates Foundation to the Save the Children Federation for the “Saving Newborn Lives” project. It is important to note that the funder has had no role in the study design, the data collection and analysis, our decision to publish, or the preparation of the manuscript.

For almost two decades, Save the Children’s “Saving Newborn Lives” (SNL) program — a globally-recognized leader in newborn health and a respected voice across many different countries — has sought to reach the world’s most vulnerable newborns in order to help them to survive their first month of life. SNL seeks to reduce global neonatal mortality by providing catalytic inputs to develop packages of effective, evidence-based newborn care interventions and to implement these innovations at scale.

ABBREVIATIONS

DHIS2	District Health Information Software
DHO	District Health Officer
DQA	Data Quality Assessments
FGD	Focus Group Discussion
IDI	In-Depth Interview
KMC	Kangaroo Mother Care
MMR	Maternal Mortality Ratio
MNH	Maternal and Newborn Health
MOH	Ministry of Health
MPDSR	Maternal and Perinatal Death Surveillance and Response
NMR	Neonatal Mortality Rate
PACHA	Paediatric and Child Health Association
QECH	Queen Elizabeth Central Hospital
QI	Quality Improvement
RLN	Regional Learning Network
RMNCH	Reproductive, Maternal, Newborn, and Child Health
RRH	Regional Referral Hospital
SBR	Stillbirth Rate
SNL	“Saving Newborn Lives”
URC	University Research Company
WHO	World Health Organization

TABLE OF CONTENTS

EXECUTIVE SUMMARY	5
Background	5
Country Case Studies	5
Cross-Country Analysis	6
Conclusion.....	7
SECTION 1: BACKGROUND	8
SECTION 2: COUNTRY CASE STUDIES	10
Data sources and analysis	10
Country Case Study: Malawi.....	11
Country Case Study: Uganda	17
SECTION 3: CROSS-COUNTRY COMPARISON.....	23
Analytical Approach: Applying an Implementation Framework	23
Findings of Cross-Country Comparison	26
Facilitation.....	27
Recipients	28
Innovation.....	30
Context.....	33
SECTION 4: DISCUSSION AND CONCLUSION	35
Limitations.....	37
Lessons Learned	37
Conclusion.....	38
SUPPLEMENTARY FILES	39
REFERENCES	40



EXECUTIVE SUMMARY

Background

Save the Children’s “Saving Newborn Lives” (SNL) program is a globally-recognized leader in newborn health.¹ From 2013-2018, SNL operated in seven countries across two regions with the aim of identifying the necessary steps that would need to be taken in order to deliver evidence-based services at a national level so as to achieve high rates of effective coverage within existing public health systems.

Recognizing the need to focus on the quality of care,² two SNL country programs supported governments and implementation partners in their efforts to improve and sustain quality maternal and newborn health (MNH) services. Malawi implemented a locally-driven quality improvement (QI) and mentorship model in four districts³ while Uganda piloted a regional learning network (RLN) in one region.⁴

Using a multiple case study design,⁵ in this report, we describe how these two QI initiatives, supported by SNL, were established and operated, and identify the cross-cutting lessons that have been learned in their implementation. The data was obtained from existing SNL reports, process documentation, evaluations, and datasets. Secondary analyses were conducted as needed in order to explore health workers’ levels of knowledge as well as their experiences of the QI activities.

Country Case Studies

In Malawi, the aim of the district-led QI and mentorship approach — led by the Ministry of Health (MOH) with support from multiple partners — was to improve the hospital-based quality of newborn care and to create an institutionalized mechanism to facilitate shared learning in central and district hospitals. By adopting a phased approach, SNL supported implementation efforts from February 2014 to April 2017 in four districts.

Central to this model was the establishment of a mentorship program through which the clinical capacity for newborn care could be strengthened. Using both attachment (intense training sessions at a higher-level facility) and on-site mentorship (bi-monthly visits from mentors to local facilities), the QI initiative used clinical teaching, training, and capacity-building strategies in order to address any healthcare provision gaps that they had identified. Other activities included the implementation of audits to assess the quality of care for newborns, efforts to improve data collection and use, and knowledge exchange across hospitals and with partners.

In Uganda, a Regional Learning Network initiative (RLN) was piloted in the Hoima Region by the MOH with support from Save the Children and the University Research Company. Conceptualization and start up activities began in December 2014, and implementation of the QI activities took place between April 2016 to June 2017. The MOH worked with 14 health facilities and the existing referral system — including the Hoima Regional Referral Hospital — to establish the RLN initiative in an effort to improve the survival rates and health of mothers and their babies.

The initiative employed QI methodology, including a training lab, on-site mentorship, learning sessions, and data quality assessment to improve health worker performance. QI teams were established at all of the participating facilities, and district coaches trained with skills for long-term coaching. The RLN oriented and trained district leaders in the use a scorecard to track progress, and trained local media on how to report on MNH using accurate information and data.

Cross-Country Analysis

To understand the implementation, uptake, and sustainability of these two QI initiatives, we employed the use of the integrated “Promoting Action on Research Implementation in Health Services” framework (i-PARIHS framework).^{6,7} The components of this framework include facilitation, recipients, innovation and context. The framework was mapped to the processes of establishing and conducting the QI initiatives, including consideration of the setting (context); planning and stakeholder buy-in (facilitation and recipients); the creation of an enabling environment with start-up activities (innovation and recipients); ongoing implementation processes (facilitation, innovation and recipients); and monitoring, evaluation, and scale-up (facilitation, innovation and recipients).

Both initiatives were contextualized in such a way as to reflect the needs and realities of the settings in which they were being undertaken. The intervention packages were multifaceted and included various intervention strategies — such as the targeting of infrastructure, supervision, and other management techniques as well as in-service training. The variety of the QI approaches that were employed reflected the needs and priorities of the different national health systems as well as the specific forms of support that had been requested from the MOH and implementation partners.

Facilitation — in the forms of partnership, ownership, and integration — was vital to the generation of local buy-in and in encouraging the uptake of the interventions. Local leadership and ownership were identified as being important factors in ensuring the uptake and sustainability of the QI approaches. Likewise, continuous engagement with the community and sub-national stakeholders were key components of establishing local ownership of the process.

The success of the mentorship activities was largely dependent on individual mentor-mentee relationships and the amount of time that each of the mentors was able to devote; many of them were engaged in a variety of different projects and played several roles. Individuals involved with these projects valued the provision of a dedicated space for newborn care as well as the standardization of monitoring systems. However, such

individuals also reported having experienced a number of challenges in relation to staffing. For example, respondents in Malawi felt that staff rotation functioned as a barrier to effective implementation. Health workers in Uganda, meanwhile, lamented both staff shortages and a lack of skills overall.

The health workers felt that the QI initiatives fit within their existing national policies and standards of care. In terms of absorption and sustainability, intentional collaboration with other implementation partners proved to be beneficial — especially in Malawi where the other parties who were involved were able to step in and to offer support when SNL was not in a position to do so. In Uganda, by contrast, the pilot was exclusively funded by SNL, thereby rendering it less desirable for partners to step in; a longer-term investment would have been required so as to ensure its sustainability.

Key lessons that were learned include the importance of investing in national and sub-national buy-in, integration, and ownership throughout the process (facilitation). Continuous partner engagement enables sustained support in terms of resources and expertise; however, changes in district and facility level leadership may influence the continuity of projects and have the potential to hinder their implementation. Intentional efforts are required in order to guarantee national and sub-national buy-in and ownership, including the completion of preparatory work. Such preparation includes the development of an understanding of the particular context and the establishment of an enabling environment as well as tailoring QI initiatives to the local context, and providing continuous feedback.

Investments in coaching and mentoring activities serve to strengthen skills as well as give healthcare providers more confidence in their skills (recipients). Creating a culture of sharing and collaboration by means of clear communication channels — both existing and new ones — increases the levels of team cohesion and improves outcomes. QI initiatives thrive in cultures and settings that support innovation and change at both local and organizational levels (innovation).^{8,9}

Purposeful alignment with existing guidelines and health systems facilitates the integration and success of QI initiatives (innovation). Longer-term investment into and support of the wider health system is essential if quality improvement and sustained change are to be achieved (context). This includes the implementation of innovations that encourage staff retention and data literacy (innovation). It is not enough to simply collect data; programs need to teach people about — and support them in — the interpretation of data as well as offering them guidance regarding the ways in which data quality may be improved. Built-in systems of continuous documentation and review enable the identification of areas for improvement and context-specific solutions (context) — but do require continuous oversight.

Conclusion

The cross-country comparison of QI initiatives for newborn care supported by SNL in two African countries between 2014–2017 has demonstrated the importance of local buy-in and ownership, contextualized approaches to the setting, the facilitation of teamwork, continued learning through mentorship, and sub-national and facility levels of engagement. The MOH and the implementation partners need to ensure that sustained investments in QI initiatives are made beyond the conclusion of pilot schemes in order to secure continued feedback and documentation. In doing so, they will also be able to make the most of the lessons that have been learned in order to create sustainable and scalable initiatives. The work of SNL — in collaboration with its partners — has contributed to the prioritization and careful enhancement of quality improvement for maternal and newborn health.



Photo credit: Martina Bacigalupo/Save the Children

SECTION 1: BACKGROUND

Save the Children’s “Saving Newborn Lives” (SNL) program is a globally-recognized leader in newborn health.¹ Considered to be a *catalytic* partner, SNL collaborated with governments and other implementation partners in their activities in order to facilitate the large-scale effective coverage of key interventions for newborns.¹⁰ SNL focused on seeking to understand how newborn interventions could be implemented at national scale. The documentation and sharing of these insights were undertaken with the aim of supporting national institutions that are leading the efforts to ensure high-quality of care for newborns in the future. The improvement of the quality of maternal and newborn health (MNH) service delivery and care was among the priorities that SNL identified and that were reflected in their activities at both global and national levels (Box 1).

Between 2013-2018, SNL operated in seven countries across two regions with the aim of establishing which steps would need to be taken in order to deliver evidence-based services at national levels in order to achieve high rates of effective coverage within existing public health systems. Each country office worked with their respective Ministry of Health (MOH) to identify priority interventions or packages of interventions. Two SNL country programs prioritized supporting the Ministries of Health in their quality improvement (QI) activities. In Malawi, the Ministry of Health — with the support of SNL — implemented a locally-driven QI and mentorship model in four districts.^{3,11} In Uganda, the Ministry of Health — again with the support of SNL — piloted a regional learning network (RLN): an initiative to improve MNH outcomes by providing high-quality care at health facilities.⁴

In this report, we present these two case studies and a cross-country comparison in order to document the work that has been accomplished as well as the lessons that have been learned from these country-focused QI programs. As both countries were among the first to be part of the World Health Organization’s (WHO’s) Network for Improving Quality of Care for Maternal, Newborn and Child Health,¹² lessons from these QI initiatives aim to inform their respective national programs as well as cross-country learning.



BOX 1: SNL'S ROLE IN THE QUALITY OF CARE FOR NEWBORN HEALTH

SNL identified the quality of care for MNH as being a clear priority in 2013² — especially as many countries were not yielding the expected reductions in the morbidity and mortality rates of mothers and newborns, despite improvements having been made in relation to service availability and accessibility. By 2013, the global rate of skilled care during childbirth had increased to 73% from 58% in 1990.¹³ However, maternal and newborn mortality and stillbirth rates remained high with 295,000 women dying as a result of complications during pregnancy and childbirth in 2017;¹⁴ 2 million babies were stillborn and 2.4 million babies died during their first month of life in 2019.¹⁵

The work of SNL — in collaboration with its partners — helped raised awareness of the fact that the increasing availability and coverage of such healthcare services does not necessarily equate to improved health outcomes without commensurate attention being afforded to the matter of the quality of service provision. Between 2013 to 2017, SNL led or contributed as a key partner in many of the global MNH reports and meetings including the Global Newborn Health Conference (2013), the Every Newborn Action Plan (2014),¹⁶ a technical consultative meeting “Integration of Maternal and Newborn Health Care: In Pursuit of Quality” (2014), the Ending Preventable Maternal Mortality Strategy (2015)¹⁷, as well as, the Global Maternal and Newborn Health Conference (2015) — among many other publications and events.

By 2016, national demand — together with the decisions of leadership at a global level — led to the quality of care for MNH becoming a priority in the Global Strategy for Women’s, Children’s and Adolescents’ Health (2015).¹⁸ In 2017, WHO launched new standards for improving the quality of maternal and newborn care in healthcare facilities and established of the Network for Improving Quality of Care.^{12,19}

SECTION 2:

COUNTRY CASE STUDIES

In this section, we present the two case studies: one on the QI initiative in Malawi and one on the QI initiative in Uganda. Each case study presents details about the background of the QI process, an explanation of the QI approach, a timeline of activities, and a description of activities.

Data sources and analysis

Using a case study design,⁵ we drew data for the two case studies from existing SNL reports, process documentation, evaluations, and datasets (Table 1).^{3,4} The various studies and the evaluations received the appropriate ethical approvals. We conducted secondary analyses of the in-depth interviews (IDI) with key informant and focus group discussions (FGD) in order to explore health worker’s levels of knowledge and their individual experiences of the QI activities. Colleagues who were involved with the implementation and evaluation processes verified the results.

Table 1: Data Sources, Sampling and Analyses, By Country

	MALAWI	UGANDA
Data sources	Documentation review; Routine health information system (DHIS2); FGD with national and district mentors and mentees; IDI with district leadership.	Self-administered health worker survey; Facility assessment: IDI, observations, document review; Routine health information system (DHIS2); FGD with MNH care providers; IDI with district management staff.
Sampling	Purposive sample of healthcare workers engaged with mentorship program: 5 FGD (24 total participants); 4 IDI.	Purposive sample of healthcare workers and district management engaged in RLN: 4 FGD (21 total participants); 11 IDI. Questionnaire: health workers (58 baseline, 50 endline). Facility assessments: 14/14 facilities (baseline); 11-14/14 facilities (endline).
Analysis	Quantitative — descriptive; Qualitative — inductive and deductive thematic coding.	Quantitative — descriptive; Qualitative — inductive and deductive thematic coding.

COUNTRY CASE STUDY: MALAWI

CONTEXT

Neonatal Mortality Rate: 24 (2014) and 21 (2017) per 1000 live births.¹⁵

Maternal Mortality Ratio: 370 (2015) and 349 (2017) per 100,000 live births.¹⁴

Stillbirth Rate: 18 (2014) and 17 (2017) per 1000 live births.¹⁵

Facility deliveries: 91% (2016).²⁰

Policy: Malawi Every Newborn Action Plan (2015).²¹



BACKGROUND TO QI APPROACH

In 2012, Malawi had the highest estimated rate of preterm birth worldwide, with 18.1% of live births in the country occurring before expectant mothers had reached 37 weeks of gestation.²² Despite the introduction of Kangaroo Mother Care (KMC) in 1999, the levels of uptake of this intervention remained variable and slow at the start of SNL's third phase with wide variation in quality of implementation.^{23,24}

These findings led to discussions with the Malawi MOH regarding how SNL could support the implementation of an approach whereby KMC service improvement could occur simultaneously with analyses of and improvements to other MNH services. In 2014, SNL and its implementation partners — including Maikhandu, the Paediatric and Child Health Association (PACHA), and others — convened in order to align their approaches and to begin to implement a district-led QI and mentorship approach so as to support the MOH in the improvement of care for newborns.

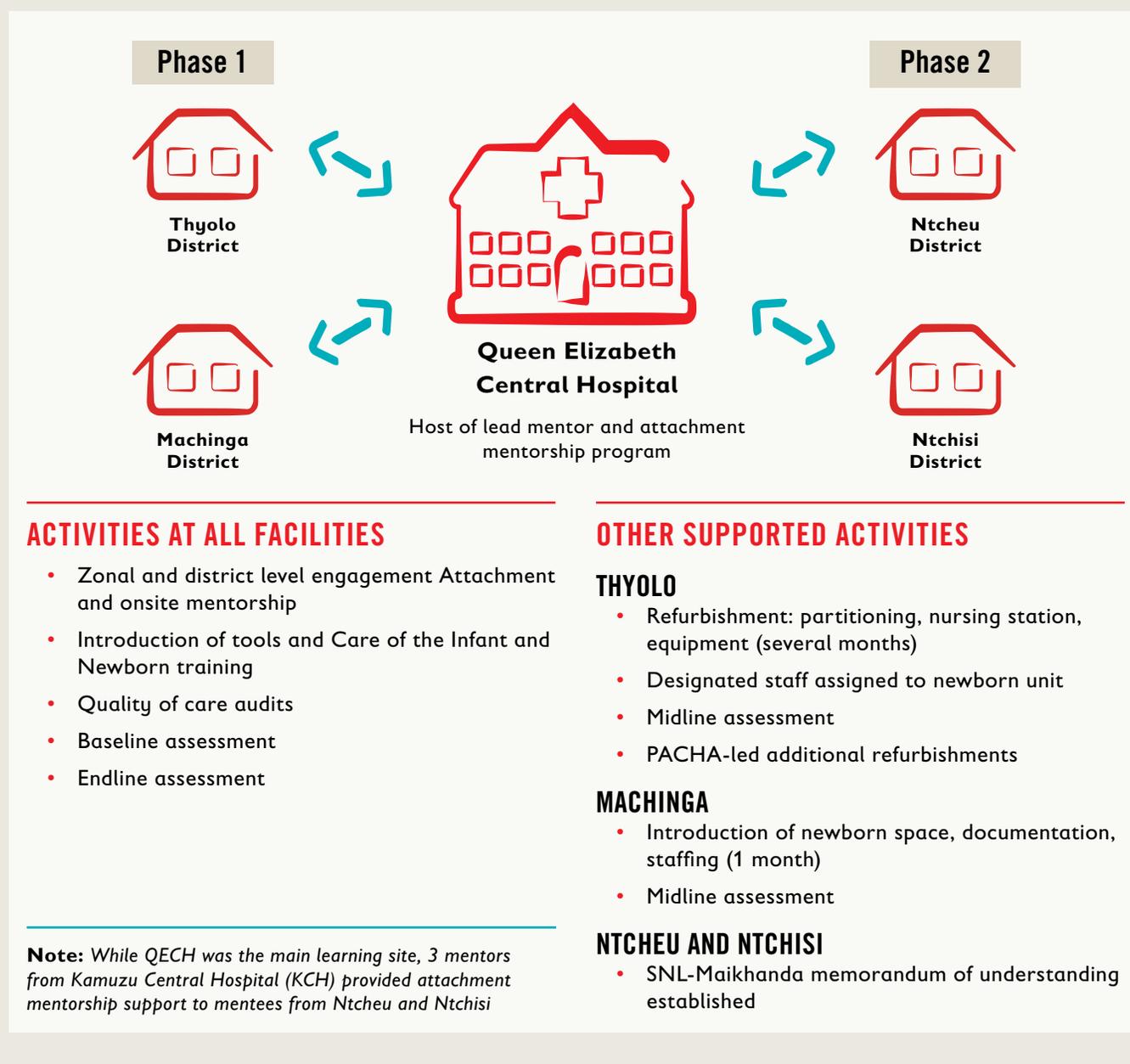
THE APPROACH: DISTRICT-LED QUALITY IMPROVEMENT AND MENTORSHIP FOR NEWBORN CARE

The aim of the district-led QI and mentorship approach was to improve the quality of hospital-based care that is provided to newborns and to create an institutionalized mechanism that would facilitate shared learning in central and district hospitals in Malawi. Central to this model was the establishment of a mentorship program to strengthen clinical capacity for newborn care. Using both attachment (intense training sessions at a higher-level facility) and on-site mentorship (bi-monthly visits from mentors to local facilities), clinical expertise and mentorship were shown to be important resources with which to address the gaps that had been identified in clinical teaching, training, and capacity building. Other objectives included supporting the implementation of newborn quality of care audits, taking steps to ensure the timely and accurate collection of data collection and its use, so as to improve the quality of care for newborns, and documenting and sharing all insights that were acquired across hospitals and with project partners.¹¹

SNL's specific role within the QI initiative included piloting this model in one central and four district hospitals in Malawi's Southern Region (Figure 1). Utilizing a phased approach, activities were initially undertaken in two districts (Phase 1 — Thyolo and Machinga) before being extended to two more districts (Phase 2 — Ntcheu and Ntchisi) at the request of the MOH, making use of the insights that had been gained in Phase 1. The Queen Elizabeth Central Hospital (QECH) was used as a learning site for the attachment mentoring for mentees.

The process of establishing and undertaking the QI activities included planning and stakeholder buy-in, the creation of an enabling environment with the provision of start-up activities, and supporting ongoing implementation processes as well as monitoring, evaluation, and scale-up. In the second phase, concerted efforts were made to work in collaboration with other implementation partners so as to ensure sustainability. Figure 2 presents a timeline of the activities that were undertaken in Malawi, followed by a brief summary of each of the main activities.

Figure 1: Malawi Phased QI Approach



ACTIVITIES AT ALL FACILITIES

- Zonal and district level engagement Attachment and onsite mentorship
- Introduction of tools and Care of the Infant and Newborn training
- Quality of care audits
- Baseline assessment
- Endline assessment

Note: While QECH was the main learning site, 3 mentors from Kamuzu Central Hospital (KCH) provided attachment mentorship support to mentees from Ntcheu and Ntchisi

OTHER SUPPORTED ACTIVITIES

THYOLO

- Refurbishment: partitioning, nursing station, equipment (several months)
- Designated staff assigned to newborn unit
- Midline assessment
- PACHA-led additional refurbishments

MACHINGA

- Introduction of newborn space, documentation, staffing (1 month)
- Midline assessment

NTCHEU AND NTCHISI

- SNL-Maikhanda memorandum of understanding established

Figure 2: Timeline for Establishing District-Led Quality Improvement and Mentorship Approach



ACTIVITIES TO ESTABLISH AN ENABLING ENVIRONMENT

Partnership/Collaboration

- SNL engaged with the MOH and facilitated **national and sub-national level meetings** so as to establish **stakeholder support for the adoption of a phased approach** (2014–2017) at healthcare facilities in 4 districts of Malawi: Thyolo, Machinga, Ntcheu, and Ntchisi.
- SNL leveraged support for **district management teams**; district leadership and ownership facilitated the coordination of partner support in an effort to establish sustainable programming.
- **SNL partnered with Maikhandanda and PACHA** to align protocols and to share their experiences of capacity-building, mentorship, and equipment procurement. Partners also made the most of each other's expertise and capacities so as to effectively support the districts.

Infrastructure, Commodities, and Staffing

- With the support of the MOH, SNL and another Save the Children Malawi-based project conducted minor **renovations** in one district hospital (Thyolo) in order to **establish functional neonatal units** (nursery and KMC units) with basic and essential equipment and supplies.
- SNL identified and recruited a **respected local focal point** to serve as a primary contact — a lead coordinator and mentor — and to provide technical oversight; MOH, facility staff, and partners saw her as being an **institutionalized authority** who could lead, effect changes in hospitals, and mentor key members of staff.
- The four lead mentors were identified by MOH and SNL through consultations with the QI lead mentor.
- The district hospital management teams assigned health facility staff — clinical officers and midwives — to the newborn unit as **designated non-rotating staff** who would be present 24 hours a day. This designation was implemented successfully in the Thyolo District before being extended to include other districts.

Skills Development (Mentorship and Data)

- The lead mentor conducted **initial mentorship visits**. These involved visiting wards with staff in order to discuss cases and to arrange the delivery of tailored teaching on a case-by-case basis as well as the identification of primary issues and advocating to make any necessary initial changes.
- SNL and partners developed **new protocols, tools, and standardized monitoring forms**, including the Care of the Infant and Newborn in Malawi guidance with a training manual.²⁵
- SNL and partners **trained existing district QI teams** in essential and specialized newborn care.

Other

- **Baseline data was collected** to enable cross-hospital learning to take place. This process was facilitated by the lead mentor; select staff from other facilities were invited to participate in assessments.

ACTIVITIES TO ENABLE ONGOING PROCESSES

Partnership/Collaboration

- The lead mentor initiated **management feedback loops** by meeting with district officials after each hospital visit in order to provide updates on their progress and to discuss any areas that were in need of attention. Audit results were also presented at zonal review meetings; these were opportunities to discuss challenges and improvements as well as to sustain levels of buy-in from zonal officials.

- **Consistent feedback** from the lead mentor **kept the stakeholders engaged** and informed regarding the future spread of the initiative and institutionalization efforts. Issues that required government attention were addressed directly to the MOH officials who would then advocate for change.

Infrastructure, Commodities, and Staffing

- SNL and its partners helped to ensure **improved levels of access to equipment and supplies**.

Skills Development (Mentorship and Data)

- Groups of 2–3 staff from all levels of seniority at four district hospitals relocated to the central hospital (QECH) for two weeks of intensive on-the-job training (**attachment mentorship**); the purpose of which was to orient staff in quality healthcare procedures for newborns.
- The lead mentor conducted regular **on-site mentorship** visits at each hospital. Regular visits were scheduled to take place every two weeks over a three-month period in order to establish a relationship between the mentor and the health facility staff; the visits included ward rounds and case discussions with newborn care team staff. Initial mentorship visits included **staff being shown how to use and maintain monitoring forms** for newborns. By the end of the three months, mentees had gained confidence and valuable skills with which they could implement what they had learned at their attachment sessions. They had also developed their capacities to mentor others. Mentees were able to continue to contact their mentor by means of WhatsApp or phone calls as needed.
- **Four master mentors (two pediatricians and two clinical nurse midwives), 24 district mentors, and 16 mentees** were selected by the lead mentor to receive training.
- SNL provided support and supervision by means of conducting **monthly quality of care and neonatal death audits** as well as by encouraging better **documentation, analyses, and use of data**. Both the QI and the neonatal death audit teams comprised service providers and master mentors; mentors chaired these meetings in their respective districts. The case notes for all of the neonatal deaths and the fresh stillbirths were discussed to generate data that was used to determine areas of success as well as challenge. Staff prioritized issues, identifying five action points to be enacted over the course of the following month, resulting in practice changes.
- Existing MOH facility-based **QI teams used “plan-do-study-act” cycles** to assess and to identify gaps in care. They then implemented solutions to improve the quality of essential care for small babies: namely, the early identification of small babies, KMC initiation, and adequate feeding and infection prevention procedures.
- SNL — in partnership with master mentors and technical officers from the MOH Reproductive Health Directorate and the Clinical Services Directorate — taught staff how to use and to maintain **standardized monitoring forms** for newborns. These forms helped staff to systematize the data for and the monitoring of each newborn, thereby enabling staff to assess the treatment that was needed for each case — as well as informing the discussions that took place with patients during mentorship visits.

Other

- **Endline assessments** conducted by SNL included interviews and focus group discussions with mentors and select staff from four of the facilities.

RESULTS AND OUTCOMES

Thyolo District Hospital*³

- The number of newborn beds increased from three to 40 beds between 2014 and 2016.
- The number of designated, non-rotating staff in the newborn care unit increased from zero to six health facility staff (clinical officers and midwives) between 2014 and 2016.
- Hospital staff reported that the capture and use of data on the management of small and sick newborns and health outcomes improved. Observations of registers confirmed this finding. For example, the availability of low birthweight data increased from 24% to 64% in two years (2014–2016).
- The improvements to quality of care led to changed attitudes towards neonates and their value. As noted by a health facility staff member: “The culture is slowly changing because we have this unit. Just to have this newborn unit means the lives are being counted. We are changing the perception of every other health worker and even the people in the villages saying these ones matter and they have their own ward specifically designated for them.” (IDI, Health facility staff, Malawi).
- Routine data indicated a reduction in mortality among admitted newborns from 15.5% to 9.5% in one year (2015–2016).



Photo credit: Alicia Adler/Save the Children

* Outcome data is only available for Thyolo District Hospital. More details and results are available at <https://www.healthynewbornnetwork.org/resource/from-invisibility-to-value-improving-quality-of-care-for-small-and-sick-newborns/>

COUNTRY CASE STUDY: UGANDA

CONTEXT

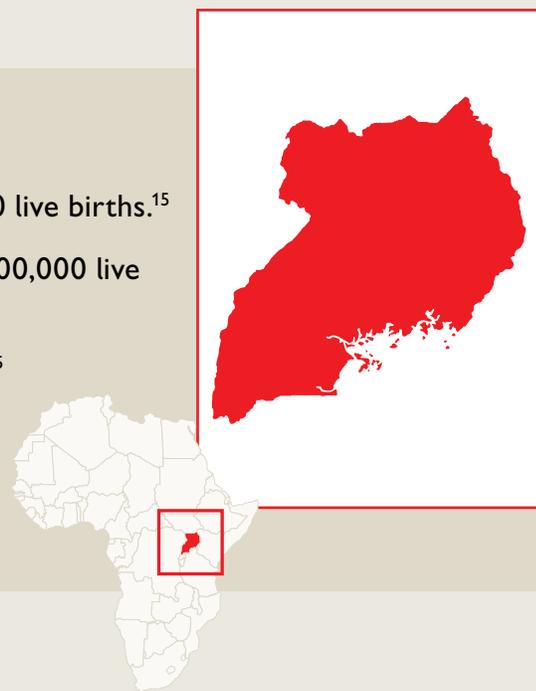
Neonatal Mortality Rate: 23 (2014) and 21 (2017) per 1000 live births.¹⁵

Maternal Mortality Ratio: 387 (2015) and 375 (2017) per 100,000 live births.¹⁴

Stillbirth Rate: 19 (2014) and 18 (2017) per 1000 live births.¹⁵

Facility deliveries: 73% (DHS 2016).²⁶

Policy: Sharpened Reproductive, Maternal, Newborn, and Child Health Plan (2013).²⁷



BACKGROUND TO QI APPROACH

In 2013, Uganda identified quality of healthcare for MNH as a priority after the Service Availability and Readiness Assessment (SARA-H) revealed that 80% of maternal and neonatal complications in the country were not being managed correctly and that only half of the facilities assessed had access to the necessary medications for treatment to be administered.²⁰ Additionally, a review to inform the revised Health Sector Quality Improvement Framework and Strategic Plan recommended strengthening the health system by means of district-level actions to improve the quality of MNH.

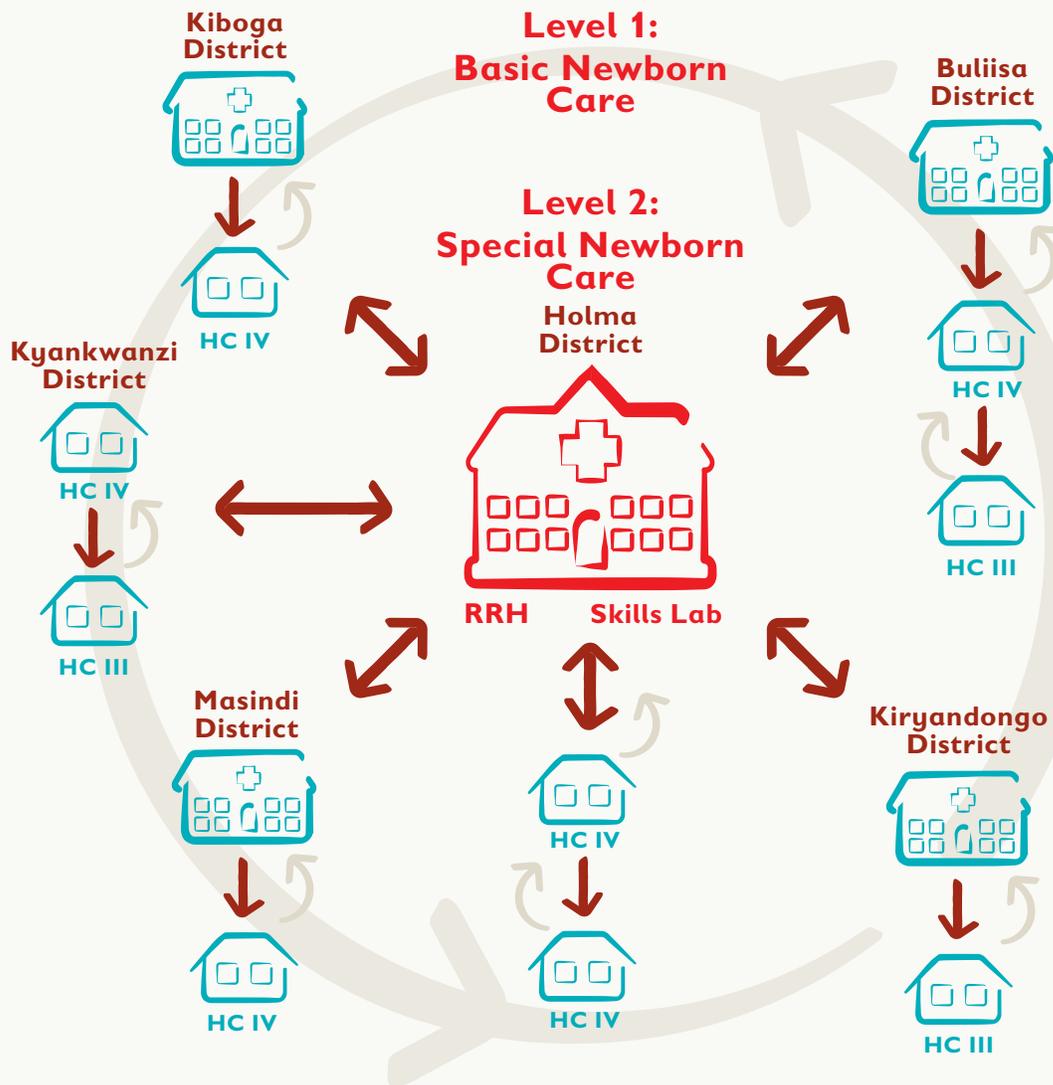
In order to take this work forward, Uganda's Ministry of Health expressed an interest in developing a Regional Learning Network (RLN) to focus on strengthening referral practices and district-level health services for MNH. SNL — in partnership with the University Research Corporation (URC), and with oversight from Uganda's MOH — piloted a RLN in the Hoima Regional Referral Hospital (RRH) catchment area between 2016 and 2017.

THE APPROACH: REGIONAL LEARNING NETWORK

The Hoima RLN initiative was a network of 14 MOH healthcare facilities that included those within the catchment of the Hoima RRH in Western Uganda. The facilities were linked together by a QI collaborative and referral system aiming to provide quality healthcare for mothers and newborns in accordance with national standards and guidelines (Figure 3).

The following steps were undertaken in order to establish and implement the RLN: activities to plan and introduce the RLN concept, the creation of an enabling environment with start-up activities, ongoing support in the context of implementation processes, and efforts to ensure high quality monitoring and evaluation. Figure 4 presents a timeline of the activities that were undertaken in Uganda, followed by a brief summary of each of the main activities.

Figure 3: Overview of the Regional Learning Network



A NETWORK OF

14 government facilities
in **6** Districts

- 1** Regional Referral Hospital (RRH)
- 4** District Hospitals
- 6** Health Center IV (HC IV)
- 3** Health Center III (HC III)

Referral and Top down support

QI COLLABORATIVE & LEARNING

Led by URC

- 16** MNH QI teams
- Bi-weekly coaching visits
 - Rapid PDSA cycles
 - Monitoring monthly indicators
 - Quarterly learning session
 - Training center/skills lab
 - Mentorship
 - National standards and guidelines

NETWORK-BUILDING

Led by Save the Children

- Maternal perinatal death surveillance and response
- RMNCH scorecards
- District coordination meetings
- Quarterly data quality assessments
- Media engagement

Figure 4: Timeline for Establishing the Regional Learning Network

December 2014–September 2015

- MOH expressed interest in RLN
- Conceptualization of RLN by SC and MOH
- Concept shared and vetted with partners
- SC and MOH partner with URC

October 2015–March 2016

- Lead consultant identified and recruited
- Contracts and MOUs finalized
- Partner engagement (national, regional and district level stakeholder meetings)

April 2016–August 2016

- Scoping visits
- Baseline assessment
- District Entry and Coordination meetings
- Formation of QI Teams
- Clinical Training
- Re-organization of maternity wards
- Partner and citizen engagement (midwife dialogue, media dialogue, open dialogue between women and health workers)
- Radio talk shows
- RMNCAH scorecard orientations and trainings
- Initiated data quality assessments

September 2016–January 2017

- 1st and 2nd Learning Sessions
- Quarterly mentorship visits
- Quarterly data quality assessments
- Quarterly RMNCAH Planning and Coordination meeting
- Radio talk shows
- RMNCAH scorecard orientations and trainings (continued)
- Engagement with members of parliament
- MPDSR training
- Exchange visits

February 2017–June 2017

- 3rd and 4th Learning Sessions
- Quarterly mentorship visits
- Quarterly data quality assessments
- Quarterly RMNCAH Planning and Coordination meeting
- RLN feedback and closeout district meetings
- Endline Assessments

ACTIVITIES TO ESTABLISH AN ENABLING ENVIRONMENT

Partnership/Collaboration

- **MOH approached SNL** — who then reached out to URC — to support a pilot RLN.
- **SNL cultivated stakeholder support** by holding **consultation meetings** with relevant individuals (i.e. district authorities and Members of Parliament) in order to share the goals and objectives of the RLN and to ensure that all of the parties were in agreement regarding the proposed process itself.

Infrastructure, Commodities, and Staffing

- Project staff conducted **scoping visits** to identify health facilities, map how services were organized, and profile the ways in which facilities were linked with one another.
- Hoima RRH and project staff conducted an **internal re-organization of the maternity wards** so as to ensure that there were designated spaces for KMC and newborn special care units as well as spaces for completing patient records.
- Project staff used baseline assessment data to inform the **procurement of equipment and supplies** for maternity wards and newborn special care units.
- Project staff set up a **skills laboratory** at Hoima RRH for hands-on, supervised, MNH practice as well as maternal and perinatal death surveillance and response (MPDSR) and data collection.
- **Project staff hired a team of three local clinicians** to act as quality improvement and clinical mentors and coaches for all 14 healthcare facilities; they were based in three separate districts.
- Project staff identified a **respected local leader to oversee the process**, to provide technical oversight, to act as the liaison between the RLN and the MOH, and to advocate for policy change.

Skills Development

- Project staff trained district leaders and health facility technical staff in relation to the **Reproductive, Maternal, Newborn, and Child Health (RMNCH) scorecard** and the Sharpened Plan for RMNCH in order to identify their areas of clinical weakness and to improve their performance.
- Project staff oriented **35 facility-based midwives** from all of the facilities on the RLN; they identified potential champions as well as any possible opportunities for advocacy.
- **Project staff identified and trained district coaches**, developing their long-term coaching skills, their abilities to use data collection tools and to report findings, and their clinical skills, thereby ensuring the continuity of activities after the completion of the training.
- Project staff formed **Quality Improvement teams** at all 14 of the participating facilities and oriented team members — midwives, medical and records officers, nurses, and laboratory technicians — in relation to elements of the RLN, their roles, and QI basic processes and details.

Other

- Project staff conducted a **formal baseline assessment** among selected health facilities in the Hoima Region. The facilities were found to have a low capacity to provide MNH services as well as limited supplies.
- Project staff used the newly-released **National Newborn Care Standards and Guidelines** to intentionally align QI activities and supported the MOH to disseminate the new standards and guidelines.

ACTIVITIES TO ENABLE ONGOING PROCESSES

Partnership/Collaboration

- Project staff facilitated **exchange learning visits** for health workers from eight RLN facilities to Jinja RRH and Busesa Health Center (HC) IV in Eastern Uganda, thereby encouraging practical learning and the sharing of experiences for maternal healthcare and care for newborns.
- Project staff facilitated and participated in **network-building activities** in order to build relationships between the leaders and providers of health facilities as well as reviewing data and creating a culture of knowledge-sharing. For example, they engaged with existing quarterly **district coordination meetings** to ensure that RLN facility reports were being shared between districts. These meetings enabled planning and problem-solving discussions to take place as well as for the details of various health programs in the districts to be shared.

Infrastructure, Commodities, and Staffing

- The new cadre of mentors — consisting of **district coaches and mentor midwives** — traveled and worked together with the project staff, mentoring the providers in the health centers and simultaneously building up a long-term capacity for ongoing mentorship.

Skills Development

- The project staff provided five **clinical skills-building training sessions with frontline health workers** from the RLN facilities to teach them how to manage the treatment of expectant women, deliveries, and newborn babies.
- The project staff conducted a **mentorship schematic** including **4–6/quarter visits** to the RLN facilities. During these visits, the mentors attended QI team meetings, reviewed plan-do-study-act project plans, coached staff about QI methodological approaches, and reviewed clinical concepts and cases as needed.
- The project staff facilitated **four learning sessions**, once each quarter, to bring together key staff from all 14 of the facilities to share data, learning, experiences, and best practices, as well as to build relationships between them. As a result, the staff felt more comfortable about the prospect of communicating with and contacting each other for referrals and clinical guidance.
- The project staff completed five-day training in **Maternal-Perinatal Death Surveillance Reviews** for staff at HC III, HC IV, and hospitals. Audit reports were shared with the District Health Officers in order to facilitate facility-level improvements
- The project staff oriented key personnel from six districts regarding the use of **RMNCH Scorecards** and how to monitor district-specific performance by means of selected RMNCH indicators. They facilitated quarterly training sessions with the in-charges of lower health units, religious and district executive leaders, and some implementation partners.
- The project staff helped the performance monitoring teams to download six key MNH indicators from the DHIS and to conduct **Quarterly Data Quality Assessments (DQA)**, namely, verifying data by examining registers and documenting processes in their facility. Following this process, feedback on data quality was given to facilities and extra mentoring was provided where needed.

Other

- The project staff conducted **formal endline assessments** among the selected health facilities in the Hoima Region.

RESULTS AND OUTCOMES†

- Start-up activities ensured key drugs and equipment were in place with increases across all items throughout the implementation period. Although, a critical challenge identified during the endline evaluation was the need for more supplies at lower level facilities to reduce unnecessary referrals.
- All facilities were reorganized to ensure designated space for neonatal resuscitation and KMC.
- The clinical training program trained 185 frontline health workers, drawn from different facilities within the RLN through clinical mentorship and skills building sessions.
- Midwives reported that the increased availability of up-to-date MNH information in the form of flip-charts, job aids and wall charts went a long way to increasing their confidence and thus, their ability to provide quality care.
- The health worker knowledge baseline and endline survey found mixed results across clinical MNH guidelines, management and the referral process.
- Record reviews revealed improved record keeping in the quality of care provided. For example, documentation on the case management of preterm deliveries increased from 8% to 82% from baseline to endline.
- Structured observations revealed marked increases in the coverage of essential newborn care practices. For example, from baseline to endline, the coverage of early initiation of breastfeeding went from 12% to 81% and the coverage of KMC initiation increased from 7% to 65%.
- Health workers and managers reported benefiting most from the skills lab and learning sessions.
- The district coordination committees were reported to help identify innovative solutions for addressing health system barriers.
- Outcome indicators, early institutional neonatal mortality and stillbirths, declined but the numbers were small, fluctuated during implementation and had huge variation between facilities. Between October 2016 and April 2017, the average early institutional NMR reduced from 1.0% to 0.5% and the stillbirth rate reduced from 3.0% to 1.4%.

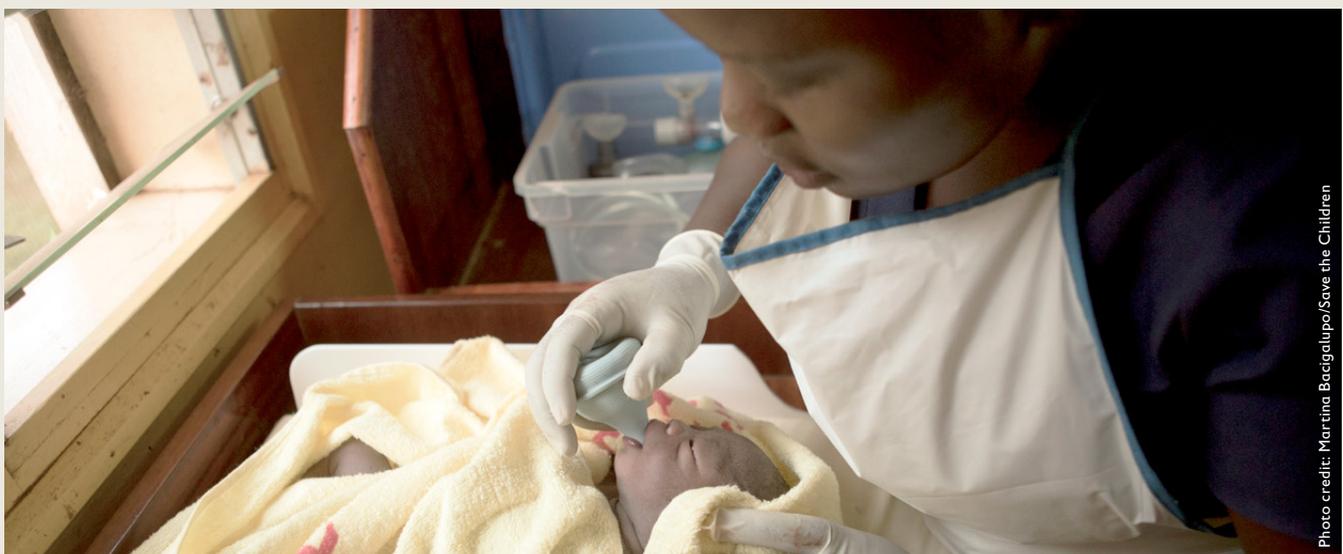


Photo credit: Martina Bacigalupo/Save the Children

† More details and results are available at www.healthynewbornnetwork.org/resource/uganda-rln/



SECTION 3: CROSS-COUNTRY COMPARISON

This section presents the methodology and results from the cross-country analysis. The study used a multiple case study design of the two case studies already presented.⁵ This approach was selected in order to identify common themes across the two QI initiatives.²⁸

Analytical Approach: Applying an Implementation Framework

Applying an implementation framework to cross-country analysis enables one to determine which factors influence outcomes as well as the interplay between these factors across different system levels.²⁹ The utilization of an implementation framework also complements the assessment of QI activities.⁷ Having conducted a mapping exercise of relevant implementation frameworks,²⁹ the integrated “Promoting Action on Research Implementation in Health Services” (iPARIHS) was selected because it allows researchers to evaluate implementation processes in such a way that includes the uptake and embedding of the intervention into practice, the motivation and ownership of the users of the intervention, and considerations of context.⁶ Unlike the other frameworks considered (Supplementary File 1), this one focuses at the meso level, and implementation factors are clearly determined by the constructs: facilitation, recipients, innovation and context.

For both of the QI initiatives, SNL adopted a similar process for establishing and conducting various activities, which included: planning and stakeholder buy-in; the creation of an enabling environment in which start-up activities could take place; supporting ongoing implementation processes, and; monitoring, evaluation, and scale-up. Figure 5 presents a schematic logic model, describing the components of the QI initiatives, and illustrating how the elements of the iPARIHS framework relate to the QI activities.

According to the iPARIHS framework, facilitation is at the core of implementation; it enables the people who are engaged with the process to adopt and to apply the innovation by tailoring their intervention

appropriately within their particular context. Table 2 provides the definitions of the constituent parts as well as the sub-constructs of the framework.

In order to assess the cross-country comparison, the study team conducted a thematic analysis of the iPARIHS constructs so as to assess the similarities and the differences between the QI initiatives.

Figure 5: Schematic Logic Model of the QI initiatives Linked to the iPARIHS Framework

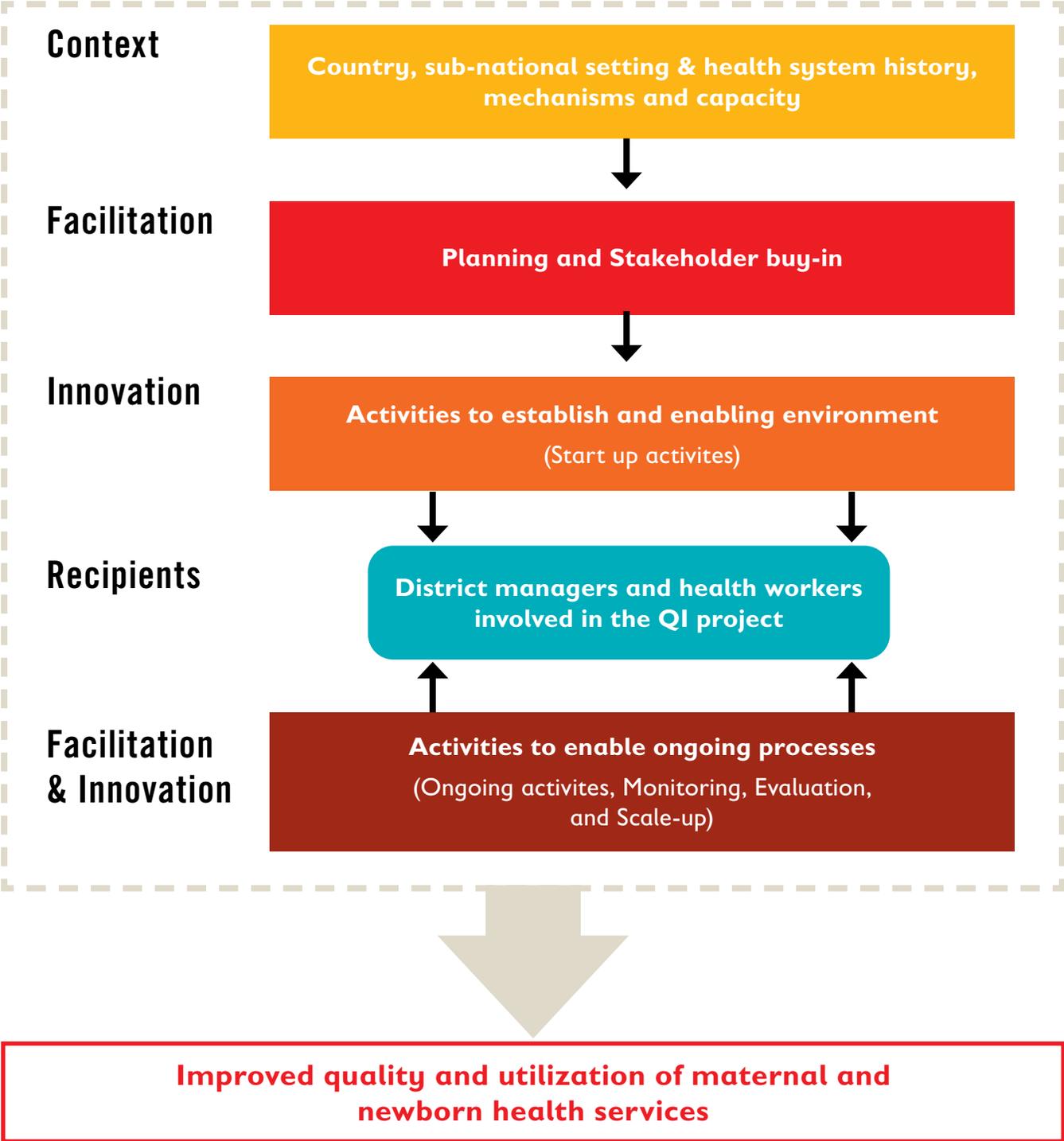


Table 2: Definitions of iPARIHS Framework Components

CONSTRUCTS AND SUB-CONSTRUCTS	DEFINITIONS^{S*}
FACILITATION	
The process of enabling, helping, or making something easier; considered to activate implementation through its interaction with the other three constructs.	
<ul style="list-style-type: none"> Participation and Ownership 	<p>People whose support is needed to implement are identified and engaged in discussing and planning implementation. Leaders create a facilitative context by creating a vision and reinforcing the change process.</p>
<ul style="list-style-type: none"> Integration and Empowerment 	<p>People involved in implementation have the necessary authority to carry out the proposed changes.</p>
INNOVATION	
The focus or content of the implementation effort; innovation(s) implemented.	
<ul style="list-style-type: none"> Clarity 	<p>People engaged in the intervention are able to easily and clearly see what is proposed in terms of clinical practice and the process of patient care.</p>
<ul style="list-style-type: none"> Degree of fit with existing practice and values 	<p>The proposed initiative “fits” with the existing practices and values in the local setting.</p>
<ul style="list-style-type: none"> Degree of novelty and relative advantage 	<p>The initiative introduces novelty to practice and learning. The initiative offers advantages over the current way of doing things (i.e. enhances patient experience or introduces greater efficiency; removing bottlenecks in the provision of care).</p>
<ul style="list-style-type: none"> Observable results 	<p>Results from the pilot initiative can be observed and tested.</p>
RECIPIENTS	
Staff, support services, and patients involved in and/or affected by the implementation and their responses to the changes required to implement.	
<ul style="list-style-type: none"> Motivation, Values, and Beliefs 	<p>People on the team want to apply the change in practice and the change is consistent with their existing values and beliefs.</p>
<ul style="list-style-type: none"> Time, Resources, and Support 	<p>Resources are available to support the implementation process, for example, time and/or financial support for new skills development, new equipment, expert support, and advice.</p>
<ul style="list-style-type: none"> Collaboration and Teamwork 	<p>Effective interprofessional collaboration and teamwork evident between clinical staff and managers.</p>
<ul style="list-style-type: none"> Power, Authority, and Presence of Boundaries 	<p>People involved in the intervention have the necessary power and authority to carry out the proposed initiative.</p>
CONTEXT	
Conditions in which the innovation is introduced — not just geographical but also other factors, their potential impact on implementation, and how best to handle them	
<ul style="list-style-type: none"> Experience of Innovation and Change 	<p>There is a culture that supports innovation and change at both local and organizational levels.</p>
<ul style="list-style-type: none"> Absorptive Capacity 	<p>Mechanisms are in place for embedding changes in routine practice (e.g. formal policies).</p>
<ul style="list-style-type: none"> Governance 	<p>Degree of stability/instability in the wider health system. Mechanisms are available to provide oversight and management of the implementation of the intervention.</p>

* From Baker et al. 2018⁷ & Harvey, G and Kitson, A. Implementing Evidence-Based Practice in Healthcare: A facilitation guide. Abingdon, Oxon: Routledge, 2015.⁶

Findings of Cross-Country Comparison

Table 3 presents simplified details of the cross-country insights that were gained by means of analyses of each of the i-PARIHS sub-constructs. A brief summary for each construct is provided. Further descriptions that relate to each of the themes are available in Supplementary Files 2 and 3 for this report.

Table 3: Cross-Country Insights into the i-PARIHS Sub-Constructs

CONSTRUCTS AND SUB-CONSTRUCTS		SUMMARIZED CROSS-COUNTRY INSIGHTS
Facilitation	Participation and ownership	National and sub-national buy-in. Continuous feedback to stakeholders. Strong and enabled leadership.
	Integration and Empowerment	Coaching and mentoring activities.
Recipients	Motivation, Values, and Beliefs	Culture of sharing and collaboration.
	Time, Resources, and Support	Staff time and transportation remain challenges. Equipment provision during start-up activities supported QI.
	Collaboration and Teamwork	Clear communication channels.
	Power, Authority, and Presence of Boundaries	Health worker agency linked to supportive management.
Innovation	Clarity	Clear objectives, work plans, guidelines, and staff expectations.
	Degree of fit with existing practice and values	Align the QI initiative with national policies and standards.
	Degree of novelty/ Relative advantage	Dedicated staff and/or spaces for care for newborns.
	Observable results	Standardized monitoring and use of data. System readiness and healthcare worker perceptions.
Context	Experience of Innovation and Change	Embedding QI innovation takes time.
	Absorptive Capacity	Cascade learning through MOH. Prioritize data literacy together with data collection.
	Governance	Continuous feedback, the stability of the wider health system, and the maturity of the system influence the quality of governance.

Facilitation

PARTICIPATION AND OWNERSHIP

SNL identified a strong and respected local leader for each of the QI initiatives who could serve as a champion of the cause and oversee the process of implementation. These two individuals were institutional authorities regarding the healthcare of newborns and were well-positioned to be able to lead the QI and mentorship processes, to secure buy-in from stakeholders, to effect systematic changes, and to ensure that meaningful feedback was received and used at all levels. These individuals were supported by the SNL country and home office technical teams — as well as by local partner agencies — and were paid consultants of SNL for the duration of the implementation process.

Both initiatives also identified and trained local mentors and coaches at sub-national levels in order to support the implementation processes. Some form of incentive, like *per diem* payment for training or related travel, was provided.

Securing local, sub-national ownership was a key component of the planning process in both of these case studies, and was mostly achieved through national and district level buy-in meetings. In Malawi, buy-in from the District Management Officer and the other key staff was essential because QI issues were identified at the district level. Different districts demonstrated different levels of ownership from management teams. One district, that had a strong District Health Officer (DHO) in place who was committed to the project, made rapid progress; another district, meanwhile, experienced high-turnover in the role of DHO, resulting in slower progress:

“We need to highlight how critical leadership is... if you remember [district] how they kept changing the DHO...every year, there was a new person, so you needed to restart the discussions. By the time they understand what you are up to, there is a new guy who comes... When people are making decisions at a council level, they need to understand that, when you frequently change leadership on an annual basis, it is very difficult to maintain programs at the same quality.”

—IDI, Mentor, Malawi

In Uganda, the RLN was officially mandated by the MOH by means of a more top-down approach. However, those who were involved with the QI initiative regularly provided reports at the District Coordination meetings, ensuring that local leaders were aware of what was happening in the health facilities and were actively engaged in the process of determining priorities:

“Now, the leaders — our leaders — know what is happening in the health facilities and, when they are discussing there and doing their other things, they know really what is happening in the health facilities. And they also go out, they tell people to utilize their facilities because services are improving, they are better than they were before.”

—IDI, District health staff, Uganda

INTEGRATION AND EMPOWERMENT



In the contexts of each of the countries, new mentors and coaches felt more empowered and confident in their own clinical and mentorship skills when other people expected them to act as clinical leaders. Training alone, though, was not enough in terms of helping them to develop and to consolidate their skills and to boost the levels of provider confidence. Facility-level providers required ongoing follow-up support by means of coaching and mentoring activities in order to integrate their skills into daily practice and to remain empowered:

“Ya so much so for the first time I felt like I will be the clinical in charge... ya so that such kind of a feeling is what has to be extended to the mentees.”

–FGD, Mentor, Malawi

“We heard like we have changed levels comparing to where we were that we could approach the matron asking how we can do things which we were not able to do previously, we saw that we were empowered, sort of. We can go to management to negotiate for other things.”

–FGD, Mentor, Malawi

Recipients

MOTIVATION, VALUES, AND BELIEFS

In Malawi, the attachment and onsite mentorship were seen as being most beneficial — by both mentors and mentees. Mentees felt that their levels of motivation increased when they saw mentors practicing what they had taught. Mentors reported that the main factors that seemed to lead to changes in practice among their mentees were their individual attitudes and sources of motivation:

“You see the foundation that we had laid in training, those people [mentoring] in placing the value of the newborn on the people on the ground, you still find that up until today.”

–IDI, Mentor, Malawi

“Another barrier to being a strong mentor was difficult mentees...you teach them the right way to do things but they resist and want to do things the old way.”

–FGD, Mentor, Malawi

In Uganda, health workers and managers reported having benefitted the most from the learning sessions. These sessions helped them greatly in terms of effecting changes in the attitudes of health workers. Staff would see something — that they previously deemed to be impossible — working elsewhere, and this motivated them to change things in their own facilities:

“The learning sessions have helped us greatly in [terms of the] attitude change of the health workers. There are some things which we used to think are very impossible — they cannot happen. But, when you go and find it working elsewhere, you greatly change your attitude as a health worker.”

—IDI, District health staff, Uganda

TIME, RESOURCES, AND SUPPORT



In Malawi, the district leadership and coordination of multiple partner engagements meant that the procurement of necessary resources and support could be staggered over time and shared among the partners. In Uganda, the respondents reported a lack of resources — specifically, transportation for referrals — as a barrier to them being able to achieve the project outcomes. Stakeholders in Uganda who held sub-national positions identified the fact that sustained investments in resources would serve to help quality improvement efforts.

They recognized that quality improvement is not meant to be a one-off or intermittent activity; longer-term investment is needed:

“You cannot fuel that ambulance — or, even where there are cries, not even the regional referral has enough fuel. So it’s the fuel. So the problem is fuel.

—FGD, Health facility staff, Uganda

COLLABORATION AND TEAMWORK

In Malawi, guided on-the-job learning — both onsite and by means of attachment mentorship, combined with teaching and audit sessions — was an effective way in which the knowledge and skills of staff could be developed, thereby enabling them to provide quality care to newborns. Working side-by-side, they were in a stronger position to be able to understand the particular environment in which they were working and to directly improve activities and outcomes.

In Uganda, some thought that the RLN activities improved the quality of the communication between healthcare facilities regarding referrals — though it ought to be noted that this viewpoint was not uniformly shared among health workers across the network. For some respondents, clarification was needed with regard to channels of communication.

POWER, AUTHORITY, AND THE PRESENCE OF BOUNDARIES



In Malawi, mentors and other service providers reported that mentorship gave them the courage and confidence that they needed in order to negotiate with management to secure the necessary staff and resources for the high-quality running of the neonatal unit. In Uganda, mentorship and relationship-building were seen as increasing the midwives' levels of knowledge and authority regarding where and when to refer:

“With the coming of mentorship, the mentors and some service providers...they had the courage to go and negotiate with management so that we should have [a] neonatal unit.”

–FGD, Mentor, Malawi

“So, now the midwives know how to refer, where to refer, and when to refer — and it is in good timing. So, knowledge of the health workers is very paramount; it can reduce all unnecessary referrals.”

–IDI, Health facility staff, Uganda

Innovation

CLARITY

In Uganda, the participants expressed a desire for more clarity with regard to referral guidelines and processes. In Malawi, meanwhile, both mentors and mentees reported their wish for further clarity about the expectations of staff with respect to how mentorship should roll out.

DEGREE OF FIT WITH EXISTING PRACTICES AND VALUES

The health workers who were interviewed in each of the settings felt that the QI initiatives complemented the existing policies and standards and aligned well with what they were trying to achieve at health facilities and at a systems level.

DEGREE OF NOVELTY / RELATIVE ADVANTAGE

In Malawi, the presence of non-rotating staff who were dedicated to the provision of care for newborns — and who were skilled and knowledgeable about the ways in which this care ought to be provided — was identified as being essential to the continual improvement of standards of healthcare. SNL supported this effort in one district to ensure success before introducing and applying their approach to other districts in order to demonstrate the impact of doing so.

It also helped that the dedicated space for newborns — in the form of a neonatal ward — aligned with the national milestone from the Every Newborn Action Plan: to ensure that all district-level hospitals had a newborn unit by 2017.²¹ One mentor asserted that:

“We can say we have improved...Now the clinician is there full time, and the nurses, with the assistance of the auxiliary nurse...the auxiliary nurse also plays a great role like [the] checking of the vital signs, so at least now we have improved on the care and we have the resources.”

—FGD, Mentor, Malawi



In Uganda, dedicated spaces for the special care of newborns were established across all of the districts and were reviewed regularly by means of the supportive supervision process. The efforts that were made to build relationships and to strengthen the referral network led to mixed results, though. Many members of staff at the health facilities asserted that poor referral practices and a lack of clear guidelines constituted barriers to the achievement of ideal outcomes in the endline evaluation. The levels of dissemination and/or uptake of the new national

standards and guidelines had, they reported, been poor.

Furthermore, health staff cited the critical understaffing in the Hoima region as a hindrance to optimum patient management, including in-patient care and referrals. For example, the multiple, short-interval drugs that need to be administered to newborns mandate the need for enough staff to be available to cover all of the shifts in a single day. Skills-building exercises were not, as such, sufficient for addressing the gaps in care when there were not enough trained staff available:

“The referral process can be improved... if there is an ambulance or a government vehicle, to take the client so that you can escort them, but now you find, where there is again a challenge of not escorting because you are alone on duty. You find when you cannot now, the referral has come, and there is no one else to escort the other one, yet you are alone on duty.”

—FGD, Health facility staff, Uganda

OBSERVABLE RESULTS

In order to ensure that the results were observable ones, standardized monitoring and support for the collection and use of data were provided in both settings under the supervision of the project teams. In general, the recipients felt that, by improving the quality of data collection and its use, one could effectively improve the quality of the care provided for newborns.

“Before, we had data in our departments but we didn’t know how to interpret it...now, we are able to know our data...and we are able to analyze that data and have actions; we can track it and interpret it.”

–FGD, Mentor, Malawi



In Malawi, standardized monitoring forms were used to ensure that data was being collected in a consistent way. Critical thinking was also promoted among the staff. All of the forms and data collection processes were integrated into the existing processes — including some indicators in the DHIS2.³⁰ Since SNL did not collect data outside of the system, observable results were limited to the data from the DHIS2; too many data gaps and issues were identified by the analysis team to be able to reliably use the information for decision-making purposes

or to track progress across districts. Only one district was able to collate data that was reliable enough to signpost a definite reduction in the mortality rates of newborns who were admitted to the neonatal unit (Thyolo District Hospital).³

The process indicators that were identified in Malawi as being critical to the improvement of the quality of healthcare for newborns included: support — and enabling environments — being provided by management teams; dedicated staff to treat newborns; dedicated spaces for newborns (separate neonatal care units); improved documentation of patient care; the provision of mentorship to increase skills and knowledge; data analysis to understand the improvements that may be needed; and functional systems that provide supplies, staffing, and funding for essential needs.

In Uganda, DQAs helped to highlight and to guide improvements in data management, thereby strengthening the system overall; facility staff reported that their performance had improved. Project staff maintained a separate tracking system to measure observable outcomes — including the improvements in the quality and the coverage of the health services — through enhanced documentation and service delivery:

“So, this program of quality data assessments has improved us, really, improving our performance, being able to monitor our activities, and also producing data that can be presented.”

–IDI, Health facility staff, Uganda

Respondents perceived the RLN to be effective at improving communication, strengthening the knowledge of health workers, and fostering a culture of learning that embraced the use of data in order to ensure accountability:

“A lot has changed...many facilities did not have equipment for the newborn...health workers lacked knowledge on how to care for these babies. And I think that has change[d] a lot. We have received equipment and now the health workers know how to use them [it].”

—IDI, Health facility staff, Uganda

Context

EXPERIENCE OF INNOVATION AND CHANGE



In both settings, the recipients were the most receptive to innovation and change when they had observed others successfully adapt to and implement change. In Uganda, it was evident that a healthcare culture that supports quality improvement, innovation, and change was in its infancy stage in the region; learning sessions were used to introduce the possibilities of areas of improvement. In contrast, the phased and partnership-focused approach of Malawi’s QI initiative slowly introduced these ideas and created more champions for change.

ABSORPTIVE CAPACITY

Malawi’s phased and collaborative approach — with different partners playing similar roles in different districts — enabled partners to leverage each other’s expertise and capacity to

effectively support districts. SNL started supporting QI activities in Thyolo and Machinga in the first phase, testing different models in each. When they presented their efforts to the national committee for roll-out with partners in other districts, they further revised and contextualized the piloted models in collaboration with their partners when scaling up to other districts.

Furthermore, in Malawi, the continuous monitoring of and reporting on progress kept stakeholders engaged in the QI and mentorship process. This approach increased buy-in from stakeholders nationwide. In contrast, Uganda’s approach was intense in that it was concentrated on one region — and was rolled out to all of the constituent districts in that single region; as such, the project was limited in both time and scope.

GOVERNANCE



The instability of the wider health system can have a negative impact on outcomes and implementation efforts. The Hoima Region of Uganda — where the RLN was implemented — experienced an increase in the number of refugees during the period of implementation. The effect of this on the QI initiative was not measured. None of the districts in Malawi experienced instability during the period of implementation.

Both countries had made political commitments to ending preventable maternal and newborn deaths through the Sustainable Development Goals and put in place national plans for implementation. In Uganda, the RLN was designed to support the roll-out of the new National Newborn Standards and referral guidelines, using the new forms and tools that had been provided by the MOH. However, some of the frontline health workers reported that they did not know anything about these standards and guidelines by the time that the pilot phase concluded:

“National referral guidelines: me, I think they exist, although I have never seen them, but I know they exist — but I’ve never seen them — but me not seeing them doesn’t mean that they are not there. Probably they are there but I have not seen them.”

—IDI, District health staff, Uganda

In Malawi, these tools were not yet developed when the QI initiative began; therefore, the MOH with SNL and its partners developed guidance and tools for implementation in relation to the mentorship component of the QI initiative. These were later finalized and approved as official MOH guidelines and training.²⁵

The maturity of the quality improvement department within the Ministries of Health may have influenced the approach and implementation process. In Malawi, SNL initially engaged with the Reproductive Health Directorate of the MOH. The Malawi MOH established the Quality Management Directorate in 2016 after the QI initiative had been started. In Uganda, SNL engaged with the Maternal and Child Health Cluster of Uganda’s MOH for RLN planning as well as the Quality Management Department, which had long been established and functional.





Photo credit: University Research Co.

SECTION 4: DISCUSSION AND CONCLUSION

This report has described two different QI initiatives for newborn care supported by SNL between 2014–2017, including details of how they were established and how they operated. In both Uganda and Malawi, the QI initiatives were tailored to reflect the individual needs and realities of the country in question. The intervention packages took the form of multifaceted, impactful strategies such as targeting infrastructure, supervision, other management techniques, and in-service training.

The cross-country comparison shows that QI activities were implemented through the national health systems in an effort to support Ministries of Health and implementation partners to advance QI for MNH. Above all, this study demonstrates the importance of facilitation — by means of partnership, ownership, and integration — which is, as this report shows, vital to the achievement of desired outcomes.

The results corroborate and contribute to the existing knowledge about improving the quality of healthcare.^{8,19,31-33} Local leadership and ownership were important factors that were identified as improving both rates of uptake and sustainability. In both QI initiatives, the champions were local leaders who were passionate, respected, and had already proven themselves to be successful networkers and change-makers within their communities. The additional remuneration from SNL by way of payment for their time constituted a further incentive to those who were involved and afforded an accountability mechanism.

Continuous engagement with the community and sub-national stakeholders was also a key way in which local ownership of the process was guaranteed. Changes in the district- and facility-level leadership may have influenced the continuity of these projects and hindered their implementation.³⁴

Successful mentorship is another key component of effective QI.^{6,8,35} In these case studies, the success of the mentorship programs was largely contingent upon individual mentor-mentee relationships. Additionally, the

amount of time that the mentors were able to commit to their coaching role played a role in its success given many of them were engaged in a range of other activities at the same time.

Additionally, the health workers bought into the process because they felt that the QI initiatives complemented the existing policies and standards of care. From the perspectives of the recipients, by embedding a culture of sharing and collaboration by means of clear communication channels — both existing and new — one could increase the levels of team cohesion and improve outcomes. Investments in coaching and mentoring activities strengthened skills as well as boosting providers' levels of confidence; this is a finding that has also been reported in other, similar research.^{7,34,36}

The recipients in both projects valued having a dedicated space for newborn care and the fact that standardized monitoring systems had been put in place. However, they articulated different challenges around the subject of staffing. The respondents in Malawi felt that staff rotation was an implementation barrier — whereas health workers in Uganda lamented their staff shortages and these individuals' lack of skills overall.

QI initiatives thrive in cultures and settings that support innovation and change at both local and organizational levels.^{8,9} In Uganda, it was evident that longer-term investment would be needed to ensure the sustainability of the initiative and to address the gaps in perceptions of project goals and achievements between Ministry-level leadership and frontline workers. In contrast, the partnership-driven approach of Malawi's QI initiative meant that the experience of innovation and change was longer-lasting because the project's activities had been factored into the work plans of the various partners.

A link was found to exist between available resources and the quality of the partnership. In Malawi, many partners were engaged in broader QI efforts and were, therefore, more willing to step in and to offer their support when SNL was not able to do so. In Uganda, by contrast, the pilot was exclusively funded by SNL — who also funded the URC's engagement. In this particular context, it was less desirable for the partners to step in and to cover any gaps so as to ensure the sustainability of the initiative.

Longer-term forms of investment in and support for the wider health system are required in order to effect quality improvement and sustained change.³⁵ These include the implementation of innovations that encourage staff retention and data literacy. It is not enough to simply collect data; programs need to teach people and to support them with regard to the interpretation of data — as well as showing them how to improve data quality. This study has shown that built-in systems of continual documentation and review enable stakeholders to identify gaps in care as well as areas that require improvement and possible solutions to such challenges. Other studies have found that supervision and strong, standardized data collection mechanisms are necessary for the meaningful evaluation of the efficacy of mortality audits.^{37,38}

In terms of absorption and sustainability, intentional collaboration among implementation partners can be beneficial as resources and expertise can be leveraged in such a way as to provide sustained support.³⁵ However, as Baker and colleagues have found, it is important to recognize the potential pejorative influence of concurrent health programs and to minimize the risk of any confusion, duplication, or inefficiency transpiring.⁷

Finally, in the larger context, purposeful alignment with existing guidelines and health systems is necessary for the effective integration and success of QI initiatives. Project objectives must align with MOH policies and plans — and the unique needs of the health workers and the clients in any given setting must also be afforded due consideration.

Limitations

This study did not seek to test the impact of the QI initiatives on final outcomes. Rather, we set out to compare the approaches that SNL took in two African countries to improve quality of newborn care. Despite an attempt to capture the complex intervention processes that were utilized and implemented throughout the QI initiatives, some information may have been missed when documenting the process.

Given the qualitative nature of the cross-country comparison approach, the data abstraction, analysis, and interpretation findings are subjective ones. Those who were involved in the analytical and interpretative processes participated in regular meetings that were designed to facilitate shared understandings of the concepts explored so that agreements could be reached with regard to interpretation. The sustainability of these projects — beyond the period of SNL’s engagement — was not assessed.

Lessons Learned

Table 4 provides a list of the high-level key lessons drawn from SNL’s experience of implementing QI for MNH in Malawi and Uganda — as well as from the existing body of literature on QI for MNH.

Table 4: Key Lessons in relation to the Implementation of QI for MNH

Facilitation	<ul style="list-style-type: none"> Invest in national and sub-national buy-in, integration, and ownership throughout the process. Focus on partnership, ownership, and integration as vital components of implementation.
Recipients	<ul style="list-style-type: none"> Establish a culture of sharing and collaboration to bolster team cohesion and improve outcomes. Prioritize the implementation of coaching and mentoring activities so as to strengthen skills as well as to boost providers’ levels of confidence.
Innovation	<ul style="list-style-type: none"> Align objectives with MOH policies and plans — but still consider the unique needs of the health workers and clients in the specific context. Integrate QI tasks into existing health worker tasks and scopes of work. Built-in systems of continuous documentation and review enable the identification of gaps, areas for improvement, and possible solutions.
Context	<ul style="list-style-type: none"> Think and act with a vision for a longer-term investment in the broader health system (encouraging staff retention and data literacy initiatives). Leverage existing local resources and expertise by engaging with and enlisting the help of different partners throughout the process. Provide continuous feedback and documentation on the QI initiative to the MOH to harness the insights gained and to create a sustainable and scalable initiative.



Conclusion

The cross-country comparison between QI approaches in two African countries by SNL demonstrates the importance of local buy-in and ownership, the adoption of contextualized approaches, and the facilitation of teamwork and continued learning through mentorship and sub-national and facility-level engagement. Intentional efforts are required so as to secure national and sub-national buy-in and ownership, including the completion of preparatory work to design a program responsive to the specific context, and to establish a relationship that enables continuous feedback.

The Ministries of Health and the implementation partners need to ensure that there are sustained investments in QI initiatives for maternal and newborn health — beyond the duration of their pilot schemes — in order to facilitate the continual provision of feedback and documentation and so that insights may continue to be gained with regard to the creation of sustainable and scalable initiatives. The work of SNL — together with its partners — has contributed to the prioritization and careful enhancement of quality improvement in efforts to eliminate instances of preventable newborn deaths and to ensure that the best healthcare possible is provided for women and children alike.

SUPPLEMENTARY FILES

AVAILABLE ONLINE AT:

www.healthynewbornnetwork.org/resource/quality-improvement-for-maternal-and-newborn-health-in-malawi-and-uganda-a-cross-country-analysis-of-learning-from-the-saving-newborn-lives-project/

Supplementary file 1: Review of implementation frameworks.

Supplementary file 2: Detailed mapping of case studies.

Supplementary file 3: Detailed findings of cross-country comparison and implications.

REFERENCES

1. Shiffman J. Network advocacy and the emergence of global attention to newborn survival. *Health policy and planning* 2016; **31 Suppl 1**: i60-73.
2. Hodgins S. Achieving better maternal and newborn outcomes: coherent strategy and pragmatic, tailored implementation. *Global health, science and practice* 2013; 1(2): 146–53.
3. Save the Children. From invisibility to value: Improving quality of care for small and sick newborns. Lilongwe, Malawi: Save the Children, 2017. <https://www.healthynewbornnetwork.org/resource/from-invisibility-to-value-improving-quality-of-care-for-small-and-sick-newborns/>.
4. Save the Children. A Regional Learning Network: An approach to scaling up quality maternal and newborn care in Uganda. Washington, DC: Save the Children, 2020. <https://www.healthynewbornnetwork.org/resource/uganda-rln/>.
5. Yin RK. Case Study Research Design and Methods (5th ed.). Thousand Oaks, CA: Sage; 2014.
6. Kitson AL, Rycroft-Malone J, Harvey G, McCormack B, Seers K, Titchen A. Evaluating the successful implementation of evidence into practice using the PARIHS framework: theoretical and practical challenges. *Implement Sci* 2008; **3**: 1.
7. Baker U, Petro A, Marchant T, et al. Health workers' experiences of collaborative quality improvement for maternal and newborn care in rural Tanzanian health facilities: A process evaluation using the integrated 'Promoting Action on Research Implementation in Health Services' framework. *PLoS one* 2018; **13**(12): e0209092.
8. Das JK, Kumar R, Salam RA, Lassi ZS, Bhutta ZA. Evidence from facility level inputs to improve quality of care for maternal and newborn health: interventions and findings. *Reprod Health* 2014; **11 Suppl 2**: S4.
9. Salam RA, Lassi ZS, Das JK, Bhutta ZA. Evidence from district level inputs to improve quality of care for maternal and newborn health: interventions and findings. *Reprod Health* 2014; **11 Suppl 2**: S3.
10. Amouzou A, Leslie HH, Ram M, et al. Advances in the measurement of coverage for RMNCH and nutrition: from contact to effective coverage. *BMJ global health* 2019; **4**(Suppl 4): e001297.
11. Save the Children. District-led quality improvement and mentorship for newborn care in Malawi: Model for implementation. Lilongwe, Malawi: Save the Children, 2016. <https://www.healthynewbornnetwork.org/resource/district-led-quality-improvement-mentorship-newborn-care-malawi-model-implementation/>.
12. WHO. Quality, Equity, Dignity: A network for improving quality of care for maternal, newborn and child health. 2017. <http://qualityofcarenetwork.org/> (accessed 15 Feb 2019 2019).
13. WHO. Health in 2015: From MDGs to SDGs. Geneva: World Health Organization, 2015. <https://www.who.int/gho/publications/mdgs-sdgs/en/>.
14. WHO, UNICEF, UNFPA, World Bank Group, UNDP. Trends in maternal mortality: 2000-2017. Geneva: World Health Organization; 2019.
15. UN Inter-Agency Group for Child Mortality Estimation. Stillbirth and child mortality estimates. 2020. <https://childmortality.org/> (accessed 15 October 2020).
16. WHO. Every Newborn: An action plan to end preventable newborn deaths. Geneva: World Health Organization, 2014. http://www.healthynewbornnetwork.org/hnn-content/uploads/Every_Newborn_Action_Plan-ENGLISH_updated_July2014.pdf.
17. WHO. Strategies toward ending preventable maternal mortality (EPMM). Geneva: World Health Organization, 2015. http://who.int/reproductivehealth/topics/maternal_perinatal/epmm/en/.
18. Every Woman Every Child. The Global Strategy for Women's, Children's and Adolescents' Health. New York, NY: Every Woman Every Child, 2015. <http://globalstrategy.everywomaneverychild.org/>.
19. WHO. Standards for improving quality of maternal and newborn care in health facilities. Geneva: World Health Organization, 2016. http://www.who.int/maternal_child_adolescent/documents/improving-maternal-newborn-care-quality/en/.
20. National Statistic Office - NSO/Malawi, ICF. Malawi Demographic and Health Survey 2015–16. Zomba, Malawi: NSO and ICF, 2017. <https://dhsprogram.com/pubs/pdf/FR319/FR319.pdf>.

21. Government of Malawi. Every Newborn Action Plan: An action plan to end preventable neonatal deaths in Malawi. Lilongwe, Malawi: Government of Malawi, 2015. https://www.who.int/pmnch/media/events/2015/malawi_enap.pdf?ua=1.
22. Blencowe H, Cousens S, Oestergaard MZ, et al. National, regional, and worldwide estimates of preterm birth rates in the year 2010 with time trends since 1990 for selected countries: a systematic analysis and implications. *Lancet* 2012; **379**(9832): 2162–72.
23. Bergh AM, Banda L, Lipato T, Ngwira G, Luhanga R, Ligowe R. Evaluation of Kangaroo Mother Care Services in Malawi: Save the Children and the Maternal and Child Health Integrated Program, 2012. <http://www.mchip.net/sites/default/files/Malawi%20KMC%20Report.pdf>.
24. Chavula K, Likomwa D, Valsangkar B, et al. Readiness of hospitals to provide Kangaroo Mother Care (KMC) and documentation of KMC service delivery: Analysis of Malawi 2014 Emergency Obstetric and Newborn Care (EmONC) survey data. *Journal of global health* 2017; **7**(2): 020802.
25. Malawi MOH, Paediatrics and Child Health Association. Care of the Infant and Newborn in Malawi: The COIN Course Participants Manual. Lilongwe, Malawi: Ministry of Health, 2015. http://cms.medcol.mw/cms_uploaded_resources/48626_12.pdf.
26. Uganda Bureau of Statistics (UBOS) - UBOS, ICF. Uganda Demographic and Health Survey 2016. Kampala, Uganda and Rockville, Maryland, USA: UBOS and ICF, 2018. <https://dhsprogram.com/pubs/pdf/FR333/FR333.pdf>.
27. The Republic of Uganda. Reproductive, maternal, newborn, and child health sharpened plan for Uganda. Kampala: Government of Uganda, USAID, United Nations Uganda, Civil Society Coalition for Maternal, Neonatal, and Child Health 2013.
28. Walt G, Shiffman J, Schneider H, Murray SF, Brugha R, Gilson L. 'Doing' health policy analysis: methodological and conceptual reflections and challenges. *Health policy and planning* 2008; **23**(5): 308–17.
29. Nilsen P. Making sense of implementation theories, models and frameworks. *Implement Sci* 2015; **10**: 53.
30. Save the Children Malawi. BRIEF: Improving availability and quality of routine data for newborns: Malawi's experience with KMC. Blantyre, Malawi: Save the Children Malawi, 2018. www.healthynewbornnetwork.org/resource/improving-routine-data-for-newborns-malawi-experience.
31. Bhutta ZA, Salam RA, Lassi ZS, Austin A, Langer A. Approaches to improve quality of care (QoC) for women and newborns: conclusions, evidence gaps and research priorities. *Reprod Health* 2014; **11** Suppl 2: S5.
32. Magge H, Chilengi R, Jackson EF, Wagenaar BH, Kante AM, Collaborative APP. Tackling the hard problems: implementation experience and lessons learned in newborn health from the African Health Initiative. *BMC Health Serv Res* 2017; **17**(Suppl 3): 829.
33. Schneider H, George A, Mukinda F, Tabana H. District Governance and Improved Maternal, Neonatal and Child Health in South Africa: Pathways of Change. *Health Syst Reform* 2020; **6**(1): e1669943.
34. Werdenberg J, Biziyaremye F, Nyishime M, et al. Successful implementation of a combined learning collaborative and mentoring intervention to improve neonatal quality of care in rural Rwanda. *BMC Health Serv Res* 2018; **18**(1): 941.
35. Spicer N, Hamza YA, Berhanu D, et al. 'The development sector is a graveyard of pilot projects!' Six critical actions for externally funded implementers to foster scale-up of maternal and newborn health innovations in low and middle-income countries. *Globalization and health* 2018; **14**(1): 74.
36. Manzi A, Hirschhorn LR, Sherr K, et al. Mentorship and coaching to support strengthening healthcare systems: lessons learned across the five Population Health Implementation and Training partnership projects in sub-Saharan Africa. *BMC Health Serv Res* 2017; **17**(Suppl 3): 831.
37. Rhoda NR, Greenfield D, Muller M, et al. Experiences with perinatal death reviews in South Africa—the Perinatal Problem Identification Programme: scaling up from programme to province to country. *BJOG* 2014; **121** Suppl 4: 160-6.
38. Belizan M, Bergh AM, Cilliers C, Pattinson RC, Voce A, Synergy G. Stages of change: A qualitative study on the implementation of a perinatal audit programme in South Africa. *BMC Health Serv Res* 2011; **11**: 243.



Save the Children believes every child deserves a future. In the United States and around the world, we give children a healthy start in life, the opportunity to learn and protection from harm. We do whatever it takes for children — every day and in times of crisis — transforming their lives and the future we share.

501 Kings Highway East
Suite 400
Fairfield, CT 06825

899 North Capitol Street, NE
Suite 900
Washington, DC 20002

[savethechildren.org](https://www.savethechildren.org)
1-800 Save the Children

