Supplementary files:

Quality Improvement for Maternal and Newborn Health in Malawi and Uganda: A cross-country analysis of learning from the Saving Newborn Lives Project

Full report available online at:

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

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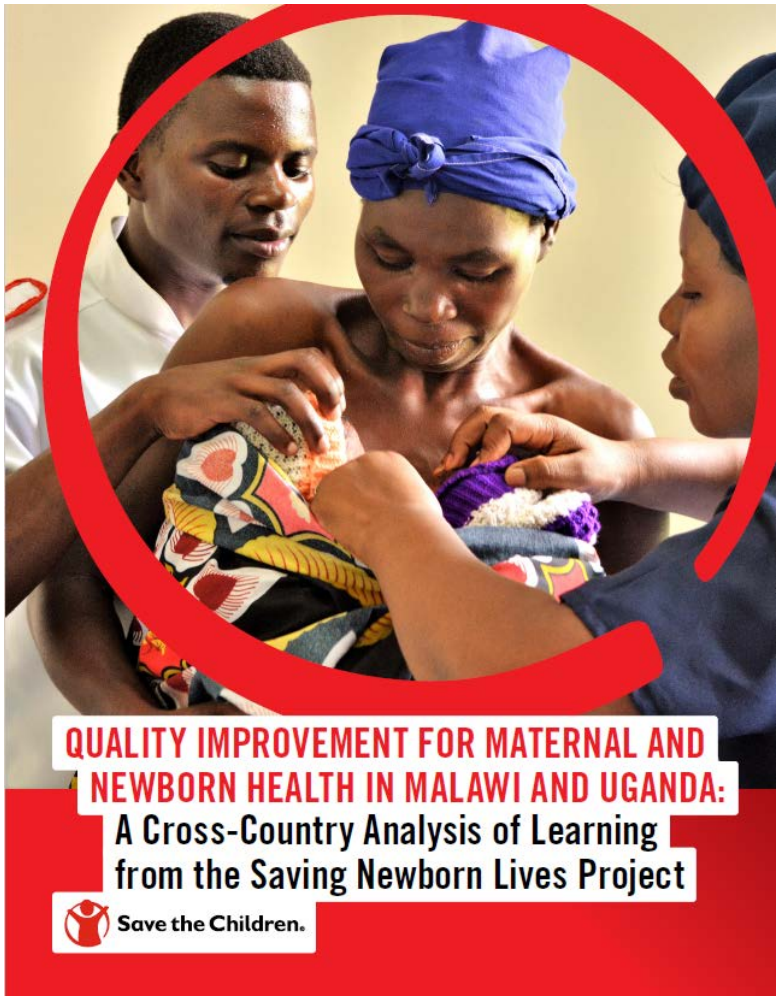

1. Review of implementation frameworks

Framework	Characteristic	Considerations for this work
Context and Implementation of Complex Intervention - CICI Framework (Pfadenhauer)	Comprises three dimensions which interact: Context (i.e., geographical, epidemiological, socio-cultural, socio-economic, ethical, legal, political); implementation (i.e., implementation theory, process, strategies, agents and outcomes); setting (specific physical location).	New framework. Rather complex and does not focus enough on elements of the intervention itself. Not appropriate to use
Dynamic sustainability framework (Chambers)	Consideration of the intervention, the context and the broader ecological system over time	Used for examining implementation of an intervention overtime. Not appropriate to use
Integrated Promoting Action on Research Implementation in Health Services - iPARiHS (Kitson)	Considers the success or otherwise of implementation upon the ability of the facilitator and the facilitation process to manage the interaction between recipients, context and innovation	Proposes four clear constructs including intervention used. Emphasizes facilitation element which both QI efforts focused on (network building, mentorship). Appropriate to use.
Consolidated Framework for Implementation Research - CFIR (Damschroder)	Comprises five major domains (the intervention, inner and outer setting, the individuals involved, and the process by which implementation is accomplished). And shows how these interact in rich and complex ways to influence implementation effectiveness	Proposes five clear constructs with many sub-constructs under each. Allows for consideration of interaction between levels (individual, facility, subnational, national). Appropriate to use

2. Detailed mapping of case studies

Quality Improvement Innovations				
1) Establishing Enabling Environment				
Intervention Elements	**Malawi**	**Country-Specific Definition**	**Uganda**	**Country-Specific Definition**
Infrastructure	Refurbishment	Minor renovations were conducted in one district hospital to establish functional neonatal units (nursery and KMC units) with basic and essential equipment and supplies for their functionality.	Develop Skills Lab	The RLN established a Skills Lab at Hoima RRH, providing opportunities for practical, hands-on in-service and pre-service training of health workers to build their clinical knowledge, skills and confidence in providing maternal and newborn care. First a space was identified for the lab and then it was equipped.
Procurement	Procurement	Essential basic supplies were identified and procured for the newborn unit. At one facility the number of beds in the newborn care unit grew from 3 to 40. Partners helped ensure improved access to equipment and supplies	Procurement	Save the Children procured and supplied an assortment of equipment, mannequins, supplies and stationery that are used to conduct practical training sessions.
Staffing	Reallocated current staff	Health facility staff assigned to the newborn unit were designated non-rotating staff, present 24 hours a day. Dedicated staff thus increased from 0 to 6.	Hired new people	A team of three local clinicians were hired by URC and based in Hoima Regional Referral Hospital to serve as the quality improvement and clinical mentors and coaches for all 14 facilities in the RLN.
Protocols Guidelines	Developing guidelines	SNL and partners developed guidance and tools for implementation around the mentorship component of the QI initiative, which later became finalized and approved as an official Ministry of Health guideline	New standards and guidelines	The Government of Uganda has committed to ending preventable maternal and child deaths through their endorsement of the SDGs and by developing national policies and strategies, such as the National Roadmap for Maternal and Newborn Survival, the National Child Survival Strategy, and National Newborn Standards.
2) Facilitating Learning				
Intervention Elements	**Malawi**	**Definition**	**Uganda**	**Definition**

Mentorship	On-site and	**On-Site Mentorship:** Lead mentor conducts on-site mentorship visits at each hospital every 2 weeks, including ward rounds, case discussions with NB care team	Clinical Coaching and Mentorship	**Mentorship visits** were conducted every 2 weeks (or at least 4-6 times per quarter) to 13 of the 14 facilities in the RLN (excluding the Hoima Regional Referral Hospital). During the visits, mentors attended the QI team meetings. The mentors worked to build a new cadre of mentors native to the public health system in Uganda, consisting of ***district coaches*** and ***mentor midwives***. Coaches and these newly identified mentors traveled and worked together, mentoring providers in the health centers and simultaneously building capacity for mentorship.
Skills Development	Off-site Training (Attachment)	**Attachment Mentorship:** Groups of 2-3 staff at all levels from district hospitals come to a central hospital for 2 weeks of intensive on-the-job training. Building capacity for clinical mentorship	Skills Lab	A simulation and practice lab based at Hoima RRH provided hands-on, supervised practice with the following: management of labor and delivery, identification of fetal skull landmarks, conducting obstetric examinations, newborn resuscitation, facilitating Kangaroo Mother Care (KMC), monitoring fetal heart rate, provision of essential newborn care, nasogastric tube insertion, supporting breastfeeding, conducting maternal-perinatal death surveillance reviews, and accurate recording in registers and partographs. Five training sessions in total were conducted by the URC/Save the Children staff. Clinical instructors were key midwives who had completed the clinical training, and were able to organize ward sessions by identifying patients and demonstrating practical aspects of knowledge learned in the training. A curriculum was developed, trainers and trainees were selected and trainings were conducted and evaluated.
			Learning Sessions	Learners attended quarterly learning sessions bringing together key staff from all 14 facilities to share data, learning, experiences, and best practices. These were also an important opportunity to network and build personal and professional relationships. Many providers were able to nurture relationships during these sessions,

				leading to greater comfort in communicating and contacting each other for referrals and clinical guidance.
Documentation and Data Improvements	Quality of Care Audits	QI teams were established in the district and monthly QoC and neonatal death audits were conducted. These audits were focused on better documentation and use of data.	MPDSR	Save the Children partnered with districts and MOH to train health facility staff conducting deliveries in MPDSR. A five-day training was completed in HC III, IV and hospitals in 4 districts. After reports were shared with DHO for facility-level improvement.
	Use of standardized monitoring forms	Initial mentorship visits also included teaching staff to use and maintain monitoring forms for newborns. The forms ensure standardized data on and monitoring of each newborn, enabling staff to assess treatment needed for each case, and informing discussion of patients during mentorship visits.	Data Quality Assessments (DQA)	Save the Children worked with the regional performance monitoring team to download six key MNH indicators from DHIS at the end of each quarter and conduct verification of the data by examining registers and recording and documenting processes in the facility. Feedback was given to facilities after the DQA.
			RMNCH Scorecards	Save the Children partnered with the six districts and MOH to orient key district personnel including district political leaders and district health team members on the development and use of the RMNCAH Scorecard - to monitor district performances in the selected RMNCAH indicators. The health workers were trained on how to use the scorecard so that they can monitor their performance at facility level.
3) Fostering Partnership and Collaboration				
Intervention Elements	**Malawi**	**Definition**	**Uganda**	**Definition**

Partnerships	DMT – District Management Teams	Leveraging the support of district management team, health care providers, and partners are critical in strengthening quality of newborn care. District leadership and ownership coordinated partner support in the district and led to sustainable programming.	District Coordination Meetings	These quarterly meetings brought together all health partners to discuss and coordinate activities in each district. The meetings provided a platform for district leaders and implementing partners of health programs in the district to undertake joint planning, share reports on progress of implementation various health programs/projects in the districts. This contributed to harmonization of activities, creation of synergies, leveraging of existing resources, and minimization of wasteful duplication of interventions.
	Partnership with Maikhanda and PACHA	Partnership with Maikhanda and PACHA emphasized alignment with their protocols and ensured other partners taking forward capacity building, mentorship and equipment procurement. Partners also leveraged each other's expertise and capacity to effectively support the district i.e. Maikhanda's expertise in quality improvement, Save the Children's expertise in mentorship and PACHA's capacity to procure additional equipment and supplies and expertise in coordinating newborn care partners.	Partnerships	Relationship between SC and URC Partnership helped ensure that resources could be leveraged
Knowledge Translation	Sharing QI Work	Shared with QI Committee and MNH steering committee	Media and Parliament Engagement	Save the Children conducted media engagement training workshops with the purpose of strengthening media advocacy and ability to report on MNH issues in a responsible and technically accurate manner using timely facility- and district-level data. Journalists & media houses operating in the RLN were equipped with information, knowledge, and key messages on MNH for consumption by the public via media dialogues, mentoring, and sharing of data.

				Parliament was also briefed and engaged on QI initiative.
			Exchange Learning Visit Sessions	In addition to the learning sessions, an exchange learning visit, across regions, was conducted for health workers from 8 facilities under the RLN to Jinja Regional Referral Hospital and Busesa HC IV in Eastern Uganda to facilitate practical learning and sharing of experiences on maternal and newborn care. The visiting health workers were able to identify good practices from the host facilities, and have adopted some of them in their respective home facilities in Hoima region.

3. Detailed findings of cross-country comparison and implications

Constructs (& sub)		Cross country learning	Summarized cross-country learning	Implications
Facilitation	Participation and ownership	National and sub-national buy in and ownership, tailored to local context, essential before implementation begins; with consistent feedback to keep stakeholders engaged. Local, respected leader supported (i.e. paid) to oversee implementation.	National and sub-national buy in Continuous feedback to stakeholders	Intentional efforts are required to ensure national and sub-national buy in, integration, and ownership including tailoring QI initiative to the local context and continuous feedback. QI work and projects do not just happen; the importance of facilitation, in the form of partnership, ownership and integration, cannot be underscored enough and is, in fact, vital to achieving desired outcomes.
	Integration and Empowerment	Coaching and mentoring activities integrate skills meaningfully into daily practice which in turn boosts provider confidence.	Coaching and mentoring activities	
Recipients	Motivation, Values and Beliefs	Improved skills and confidence increased health workers' motivation to apply skills and improve quality, and sharing lessons learned, at various levels, may result in positive attitude shifts.	Culture of sharing and collaboration	Embedding a culture of sharing and collaboration via clear communication channels (both existing and new), will increase team cohesion and improve outcomes. Ownership and support directly impact recipients' capacity and authority to implement QI learning. Investment in coaching and mentoring activities strengthens skills as well as boosts provider confidence.
	Time, Resources, and Support	Both time and transport were identified as barriers to implementing what was learned through QI process. Providers believed equipment provision during start-up activities was great support in helping them achieve improvements.	Staff time and transport remain challenges Equipment provision during start-up activities supported QI	
	Collaboration and Teamwork	Both QI approaches worked on embedding a culture of sharing as a principle in the process. Clear definition and understanding of communication channels and expectation of collaboration promotes teamwork functions.	Clear communication channels	
	Power, Authority and Presence of Boundaries	The agency of health care workers to advocate for necessary resources and changes increased when supported from higher levels, including mentorship and subnational management.	Health worker agency linked to supportive management	
Innovati	Clarity	Clear objectives and workplans creates an institutionalized mechanism for shared learning and documents learning and best practices hospital-based quality of care	Clear objectives, workplans, guidelines and staff expectations	Objectives should align with MOH policies and plans as well as consider the unique needs of the health workers and clients in the context.

		Clarity of guidelines and expectations of staff in the QI process essential for implementation of QI initiative		Ideally, health workers should perceive QI tasks as part of their existing work or at least aligned with it and should feel supported to achieve outcomes. Built-in systems of continuous documentation and review enables the identification of gaps, areas for improvement and solutions.
	Degree of fit with existing practice and values	Both QI initiatives were found to fit with national policies and standards.	Align QI initiative with national policies and standards	
	Degree of novelty	It is critical to identify gaps unique to context using audit; dedicated staff and/or space had a positive impact on quality of care provided to newborns.	Dedicated staff and/or space for newborn care	
	Relative advantage	Documentation helped enhance quality of care and patient experience by identifying gaps and areas for improvement. Yet improving client services was recognized as often overlooked.	Standardized monitoring and use of data	
	Observable results	Observed improvements to system readiness were linked to health care worker perceptions	System readiness and health care worker perceptions	
Context	Experience of Innovation and Change	Difficult to see change in coverage or behavior in limited time span. Involvement of other partners who can take initiative forward is essential.	Embedding QI innovation takes time.	Longer term investment and support of the wider health system (encouraging staff retention and data literacy initiatives) is required for quality improvement and sustained change. Approaches which involve different partners can be beneficial since resources and expertise can be leveraged to provide sustained support. Ministry needs continued feedback and documentation from the QI initiative in order to harness lessons learned and create sustainable and scalable initiative.
	Absorptive Capacity	Importance of feedback to MOH and other stakeholders cannot be overstated; to improve MNH country-wide need to cascade learning. Not sufficient to encourage data collection alone; focus needs to be on quality of data and improving data literacy overall to impact data use.	Cascade learning through MOH Prioritize data literacy along with data collection	
	Governance	Instability in the wider health system can negatively impact outcomes. Ministry needs documentation to provide ongoing oversight and ensure project activities continue; clear guidelines needed. The maturity of the quality improvement department within the Ministry of Health influenced approach SNL used for engagement.	Continuous feedback, stability in wider health system and maturity of system influence quality of governance	