50,000 Happy Birthdays programme

Ethiopia, Rwanda, Tanzania

Endline evaluation report

Submitted by Novametrics Ltd and associates

June 2020

Contents

Acknowledgements

The report was produced by the Novametrics team. Lead authors were Carolyn Blake, Andrea Nove and Martin Boyce. Additional material was provided by Oliva Bazirete, Luc de Bernis, Leah Bohle, Moke Magoma and Alula Teklu.

First and foremost, the authors wish to acknowledge all the national and global stakeholders who gave their time to provide qualitative and quantitative data for inclusion in this report. The qualitative evaluation data were provided by a wide range of stakeholders from organisations including the national midwife associations, ICM, Laerdal Global Health, national ministries of health, UN organisations and 50,000 Happy Birthdays implementation sites.

The monitoring data were meticulously gathered with great effort by the HMS/HBS master trainers in each country and collated by the programme managers: Tachawet Zeleke (EMwA), Angelique Mugirente, Angelique Uwineza and Fidele Nkurunziza (RAM) and Lucy Mabada (TAMA), with the support of Yeshitila Tesfaye (EMwA Executive Director), Josephine Murekezi (RAM President) and Feddy Mwanga (TAMA President), and the assistance of Belete Belgu and Wotaro Balta Dana (EMwA), Oliva Bazirete (RAM) and Mahad Farah (TAMA). The qualitative data collection was carried out in the three countries by: Alula Teklu and Luc de Bernis (Ethiopia), Oliva Bazirete and Andrea Nove (Rwanda), Moke Magoma and Leah Bohle (Tanzania).

Lead quantitative data analyst was Martin Boyce, and lead qualitative data analyst was Carolyn Blake.

Funding for the monitoring, evaluation and learning aspects of the programme was provided by Laerdal Global Health and the Latter-day Saint Charities.

None of the above would have been possible without the unending effort and support provided by the programme managers at ICM: Florence West, Martha Bokosi and Shantanu Garg.

Executive summary

This report provides the findings of the endline evaluation of the 50,000 Happy Birthdays programme in Ethiopia, Rwanda and Tanzania. The programme ran from 2018 to 2020, and aimed to train, equip and support midwife associations (MAs), midwives and other health care providers to enable more Happy Birthdays in these three countries. The programme consisted of four main strands of activity: (1) training of trainers, health workers and students, (2) low-dose high-frequency (LDHF) practice sessions at health facilities and education institutions, (3) supportive supervision of implementation sites, and (4) MA capacity building.

This is a mixed methods evaluation study which includes quantitative data from the programme's monitoring tools and national health management information systems (HMISs) as well as qualitative data collected from key informants within the three countries and at global level. The study used process evaluation criteria as an overall framework:

- **Acceptability**: perceived relevance and value of the programme
- **Dose/Exposure**: how much intervention was delivered?
- **Reach**: did the programme reach everyone it set out to reach?
- **Fidelity**: was the programme implemented according to the plan?
- **Mechanisms of impact**: how did the activities lead to the results?
- **Mediators**: intermediate processes which explain consequences
- **Contextual factors**: influences beyond the control of the implementation team
- **Recruitment and retention**: what keeps stakeholders engaged?

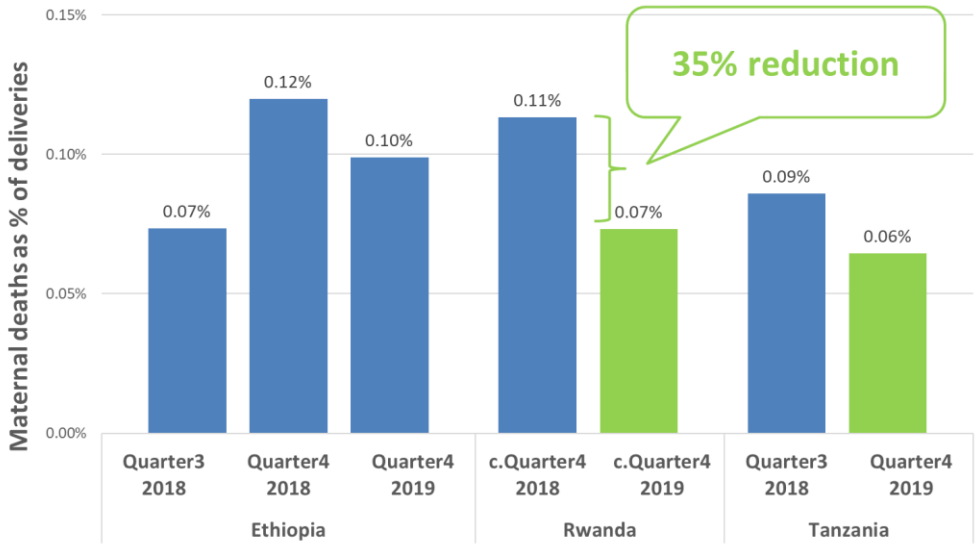
Impact on health outcomes

At the implementation sites in Rwanda and Tanzania, there were impressive reductions in maternal and neonatal mortality rates and stillbirth rates, and increases in the rate of referral to neonatal intensive care. These can be seen in the graphs overleaf. For example, between baseline in 2018 and endline in 2020, the maternal mortality rate fell by 35% in Rwanda and by 33% in the three implementation regions in Tanzania, the neonatal mortality rate fell by 57% in Rwanda and by 31% in Tanzania, and the stillbirth rate fell by 18% in Tanzania and 13% in Rwanda. Referrals to neonatal intensive care increased by 40% in Rwanda and 32% in Tanzania.

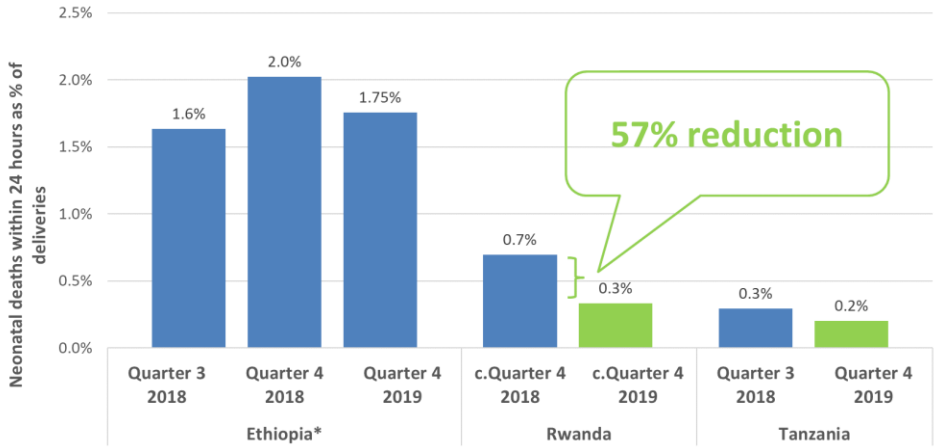
The impact in Ethiopia is less clear due to seasonal fluctuations in recorded mortality rates. If we take quarter 3 of 2018 as the baseline, there were slight *increases* in maternal and neonatal mortality rates between baseline and endline. If we take quarter 4 of 2018 as the baseline, however, maternal and neonatal mortality *decreased* between baseline and endline. Whichever period is used for the baseline, there was a reduction in the stillbirth rate at the implementation sites.

Whichever baseline period is used, the results from the 50KHB implementation sites compare well with the other sites in the Ethiopian intervention regions. If quarter 3 of 2018 is used as the baseline, although the maternal and neonatal mortality rates increased, they increased by a smaller amount at the 50KHB implementation sites than at the non-implementation sites. If quarter 4 of 2018 is used as the baseline, the maternal and neonatal mortality rates reduced at the implementation sites and increased at the non-intervention sites – in other words, the 50KHB sites bucked the overall trend of increased maternal and neonatal mortality. This indicates that the programme may have had a protective effect against whatever caused the overall increase in maternal and neonatal mortality in the five implementation regions.

Maternal mortality rate comparison, baseline to endline

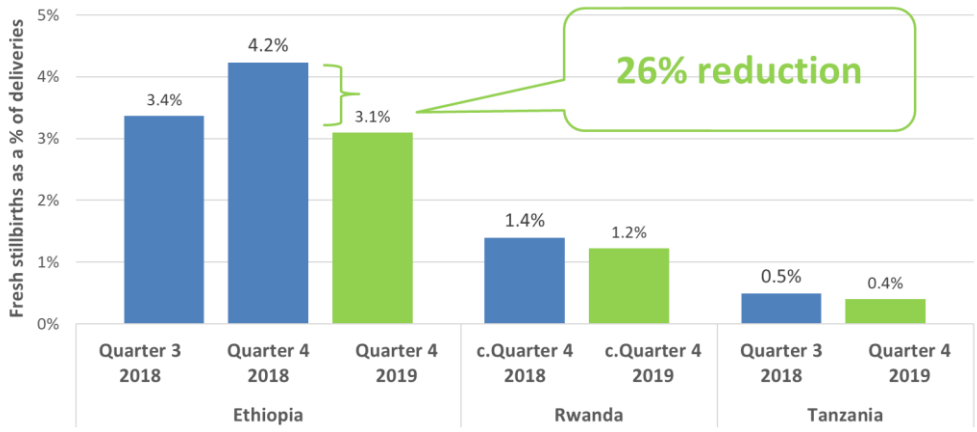


Neonatal mortality rate comparison, baseline to endline



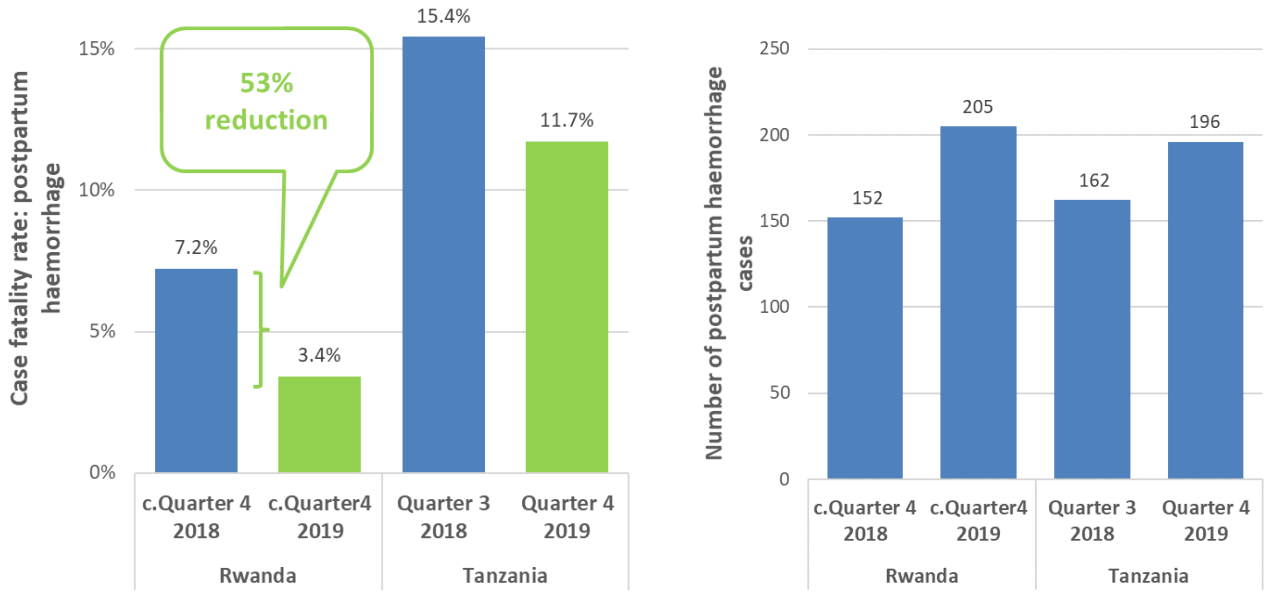
* The selected indicator for neonatal mortality was 'facility-based deaths at <24 hours old as a % of deliveries'. The Ethiopian HMIS did not record this information, so the indicator for Ethiopia is 'deaths at <7 days old as a % of deliveries'.

Stillbirth rates comparison, baseline to endline:

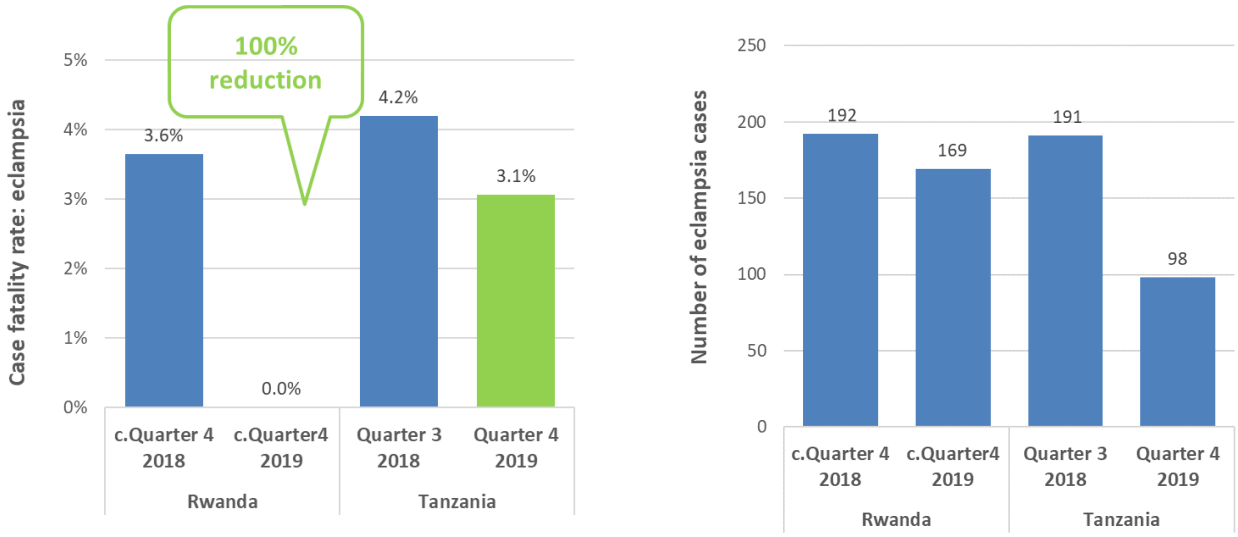


Case fatality rates for eclampsia and postpartum haemorrhage (PPH) also decreased significantly in Rwanda and Tanzania (these data were not collected in Ethiopia). The number of recorded cases of PPH increased, and the number of recorded cases of eclampsia decreased. It is likely that one or both of two things happened to produce these results: (1) improved accuracy of diagnosis of these two conditions occurred as a result of the training and/or (2) improved diagnosis and management of pre-eclampsia led to a lower incidence of progression of the condition to eclampsia.

Postpartum haemorrhage: case fatality rate and number of cases, baseline to endline comparison



Eclampsia: case fatality rate and number of cases, baseline to endline comparison



Although we cannot conclusively attribute the observed mortality rate reductions to the 50KHB programme, the results give many reasons to be encouraged. First, the results from all three countries are based on a very large sample of deliveries. A further sign of validity is the similarity between the patterns of results in Rwanda and Tanzania: this gives us confidence that the programme could have been a major contributory factor, especially considering that the two datasets came from different types of data source (the Rwanda results come from programme monitoring data and the Tanzania results from HMIS data).

Acceptability

Almost without exception, stakeholders viewed the training as highly relevant and valuable: the training met an important need for both improved education and improved quality of care. Support from national ministries of health in all three countries contributed greatly to the perceived acceptability of the programme at implementation sites. Despite this support, in Ethiopia there was resistance from some doctors: in places where deliveries are attended by obstetrician/gynaecologist residents as well as midwives, the new knowledge acquired by the 50KHB champions was different from the usual practice of the residents, which led to some conflict.

The low-dose high-frequency (LDHF) practice sessions were recognised to be similarly important and an appropriate way to consolidate learning, but there were several practical barriers to their successful delivery. Some stakeholders in Rwanda felt that the LDHF approach to practice sessions was less suitable for educational institutions than for health facilities, but this was not the case in Ethiopia and Tanzania.

The cascade approach used under the programme (master trainer facilitators train master trainers, who in turn train champions at implementation sites) was also generally perceived to be acceptable because it is a cost-efficient way to reach a large number of health workers. There were, however, a few concerns about whether the quality of the training can be maintained at all levels.

The following table summarises key informants' views about what the programme did well, and the locations of the informants:

Programme successes described by key informants	Country/ies
Working closely with government with alignment to country policies and strategies	Ethiopia, Rwanda, Tanzania, Global
The training content was perceived as high quality and relevant to their work/studies	Ethiopia, Rwanda, Tanzania
Training modules addressed real skills gaps that save lives	Ethiopia, Rwanda, Tanzania
Training all staff within a facility ensured consistency in clinical practice	Rwanda
The practical approach used during training and LDHF sessions was motivating	Ethiopia, Rwanda, Tanzania
The programme reached a wide range of health professionals (students, midwives, nurses, doctors, ambulance staff)	Rwanda, Tanzania
Excellent selection of master trainers (respected by trainees)	Ethiopia, Rwanda, Tanzania
Inclusion of private sector institutions was a welcome addition (usually not included in such training programmes)	Ethiopia, Rwanda
Supported a sense of pride in midwifery and MNH care	Ethiopia, Rwanda, Tanzania, Global
Increased MA visibility and esteem in country	Ethiopia, Rwanda, Tanzania, Global
Strong relationships between ICM and MAs	Ethiopia, Rwanda, Tanzania, Global
Increased presence of MAs in national working groups and international/ regional conferences	Ethiopia, Tanzania, Global

Note: The global-level key informants represented ICM and Laerdal Global Health.

Dose/exposure

The evaluation interviews provided numerous examples of how the programme has started to bring about institutionalised change in terms of improvements to: (a) the way practical skills are taught at

nurse and midwife educational institutions, (b) organisation of care in clinical settings (e.g. better preparation of delivery rooms), (c) improved quality of care and respectful maternity care and (d) improved teamwork and communication at health facilities. The level of ownership of the programme at schools and health facilities indicates that these changes could be sustained after the end of the programme, but to ensure this, there will need to be continued follow-up and support.

Reach

In all three countries, the programme was successful in reaching its intended beneficiaries (midwives, nurses and their colleagues, students) and also reached numerous other stakeholders such as national and regional government, health facility and educational institution leaders, other professional associations, UN agencies and NGOs. Engagement with the programme was strong due to good communications between stakeholders at global and national levels, and to the programme being perceived to meet a real and urgent need for improvements to the quality of maternal and newborn health care.

Fidelity

A large number of midwives, nurses, doctors and other health workers were trained under the programme. Although none of the three countries met their targets for the number of individuals trained, Rwanda came very close, and Ethiopia opted to train each individual in more modules (so even though the number of trainees was about half the target, the number of 'training episodes' was very high). Tanzania also achieved about half of its target, partly because the original target was not adjusted downwards after the ministry of health changed the implementation regions to include locations with fewer health workers and longer distances between regions. In all three countries, the delays in disbursement of funds and distribution of training equipment meant that the training of champions was slow to start, which decreased the amount of time available to reach the training targets.

The programme's monitoring, evaluation and learning (MEL) system did not have the resources to monitor systematically the quality of the training delivered under the programme, but the qualitative data shows that beneficiaries were very impressed with the quality of the training materials and the way the training was delivered.

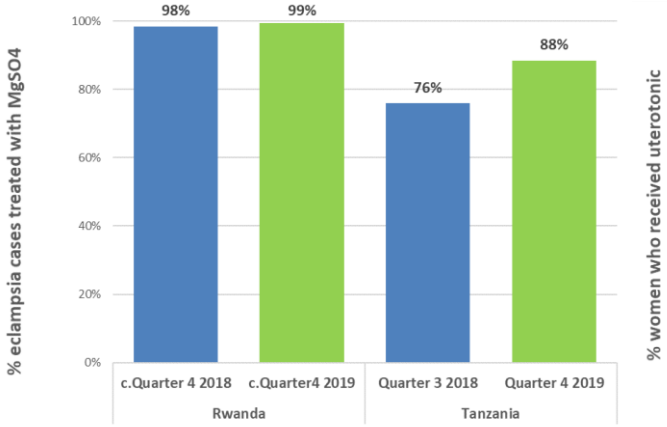
The MAs were successful in appointing highly motivated on-site master trainers to coordinate on-site training and LDHF practice sessions. However, the on-site trainers' task was made more difficult by insufficient training equipment being supplied and by workforce shortages which made it difficult for health workers to take time out of their working day to attend training and practice sessions. Many of the on-site trainers found creative solutions to these challenges, such as using real-life examples to illustrate learning points, and arranging training and practice sessions early in the morning to coincide with shift changes. However, the challenges muted the impact of the programme somewhat.

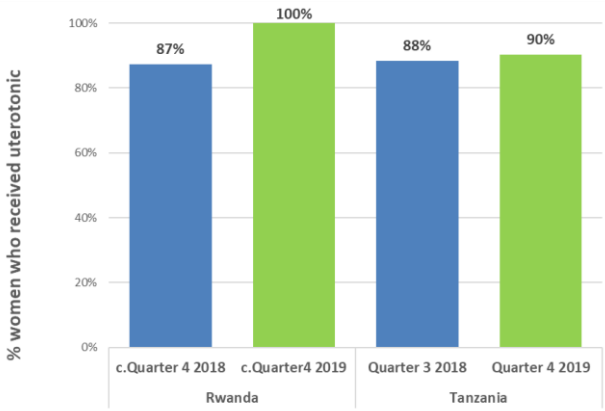
The supportive supervision element of the programme was not well understood at the outset, such that the MAs did not allow sufficient human and financial resources for it in their plans. It was universally acknowledged by evaluation interviewees as a vitally important element of the programme, and when it did take place it was greatly appreciated by those working at the implementation sites. Rwanda organised a system of regular supervision visits to a limited number of sites, and Tanzania also managed to organise several visits. Anecdotal reports from Ethiopia indicate that some supportive supervision visits took place, but there was no official record of them from the programme monitoring tools.

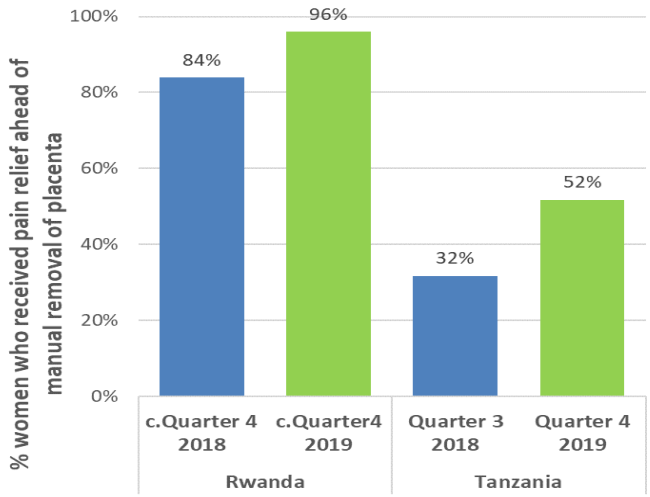
Mechanisms of impact

The evaluation explored the ways in which the programme may have led to the observed outcomes and impacts. The support provided by ICM and other programme partners to the MAs has built MA capacity, especially in relation to MA functions and financial resource management. The evaluation also provides some evidence that the training provided to the beneficiaries improved their capacity to provide high-quality and respectful maternity care. For example, in Rwanda and Tanzania there were increases in: the proportion of eclampsia cases treated with magnesium sulphate ($MgSO_4$), the proportion of deliveries after which the mother received a uterotonic, and the proportion of cases of manual removal of placenta for which the woman received pharmacological pain relief or a sedative in advance of the procedure.

Quality of care indicators







Mediators

Beneficiaries tended to report that the most technically challenging training material had the biggest impact on their practice, notably the HMS modules. High quality collaboration between global, national and sub-national stakeholders was also felt to contribute to successful implementation.

Contextual factors

The main contextual enablers were perceived to be: strong leadership and support from national stakeholders, the high quality of the training content and materials, low turnover of staff at implementation sites, passionate advocates for maternal and newborn health at implementation sites, and the training providing 'free' continuing professional development (CPD) points. Contextual challenges included: insufficient human resources at the MA level, staff shortages at implementation sites/lack of staff time to attend training and LDHF sessions, security threats, lack of space and supplies at health facilities, and poor internet connectivity.

Recruitment and retention

Stakeholder engagement in the programme was exceptionally high, thanks to the programme being a good fit with the three countries' strategic directions for maternal and newborn health, and to good communication and collaboration between stakeholders and effective leadership from the MAs and from national and sub-national ministries of health.

Conclusions

This evaluation provides evidence that the 50KHB programme works when solid implementation mechanisms are in place: more Happy Birthdays happened in the places where the programme was well implemented. In these places, the programme has contributed to a significant improvement in the way that SRMNAH workers are trained and supported to manage obstetric and neonatal emergencies. It thus has the potential to bring about widespread improvements to quality of care if the investment can be sustained and expanded. The impact of the programme was, however, muted somewhat by contextual challenges, insufficient human and financial resources and logistical challenges relating to the shipping and distribution of training equipment. Without these challenges, the impact would perhaps have been even greater. The impact could have been measured more reliably had the MEL aspects of the programme commenced earlier. Notwithstanding these challenges, the 50KHB programme has allowed the MAs in the three countries to lay a solid foundation on which to build in the future. Continuing support will be required to consolidate and expand the achievements and learning from the programme so the improvements can be institutionalised and thus sustained.

Recommendations

To replicate the successes of this programme and avoid the challenges, future programmes of this nature should ensure:

- Good coordination between programmes with similar aims, e.g. by conducting a thorough stakeholder mapping exercise at the outset and reviewing it regularly over the life of the programme, and engaging fully with all relevant stakeholders as they are identified to ensure effective coordination and efficient use of the available resources
- The involvement of doctors' groups/associations in steering and/or implementation of the programme in health facilities, to ensure the widespread acceptance and support which is necessary for institutionalisation of the changes made under the programme. Similarly, the involvement of the ministry of education, university leaders and teaching staff in programme steering and/or implementation will support institutionalisation in pre-service education institutions

- Programme targets are set strategically, taking into account issues such as the locations, number and type of facilities selected as implementation sites, the number of champions that a master trainer can realistically be expected to train, the number of health workers available to be trained, and whether it is better to train fewer people with more modules, or more people with fewer modules
- A high-quality supportive supervision system is built in from the outset, and that the MEL system is set up early
- Effective systems for planning and distribution of the necessary equipment before programme implementation begins (e.g. during an inception phase), so that the training can commence in all locations without delays
- Creative ways to overcome challenges relating to equipment availability, e.g. sharing the equipment between sites if there is not enough for all sites to have all the equipment
- Suitable systems exist for collecting data on the quality of the training, and the amount and quality of the LDHF practice sessions
- That as many as possible of the identified 'enablers' are in place before implementation commences: strong leadership and support from national and sub-national stakeholders, high quality training content and materials, low turnover of staff at implementation sites, passionate advocates for maternal and newborn health at implementation sites, and the training leading to benefits such as 'free' CPD points
- Anticipation and mitigation of contextual challenges such as: insufficient human resources and capacity within the MAs, staff shortages at implementation sites/lack of staff time to attend training and LDHF sessions, poor infrastructure, poor internet connectivity, and security threats. Provision should be made for more regular country visits from project management and consultants/experts to support the national implementation teams through such challenges

Abbreviations and acronyms

50KHB	50,000 Happy Birthdays
AGOTA	Association of Gynaecologists and Obstetricians
AMREF	African Medical and Research Foundation
AMTSL	Active Management of the Third Stage of Labour
BABC	Bleeding After Birth Complete
CPD	Continuing Professional Development
DHMT	District Health Management Team
ECEB	Essential Care for Every Baby
ECSB	Essential Care for Small Babies
EMwA	Ethiopian Midwives Association
ET	Ethiopia
FGD	Focus Group Discussion
HBB	Helping Babies Breathe
HBS	Helping Babies Survive
HMIS	Health Management Information System
HMS	Helping Mothers Survive
ICM	International Confederation of Midwives
KII	Key Informant Interview
LDHF	Low-Dose High-Frequency
LDSC	Latter-day Saint Charities
LGH	Laerdal Global Health
MA	Midwives Association
MACAT	Midwives' Association Capacity Assessment Tool
MEL	Monitoring, Evaluation and Learning
MoH	Ministry of Health
MT	Master Trainer
MTF	Master Trainer Facilitator
NICU	Neonatal Intensive Care Unit
PEE	Pre-eclampsia/Eclampsia
PO-RALG	President's Office Regional Administration and Local Government
PPH	Postpartum Haemorrhage
RAM	Rwanda Association of Midwives
RBC	Rwanda Biomedical Centre
RCPCH	Royal College of Paediatrics and Child Health
RHB	Regional Health Bureau
RMC	Respectful Maternity Care
RW	Rwanda
SS	Supportive Supervision
TAMA	Tanzanian Midwifery Association
TNMC	Tanzanian Nursing and Midwifery Council
TZ	Tanzania
UNFPA	United Nations Population Fund
UNICEF	United Nations Children Fund

1 Introduction

As part of its mission to represent and strengthen midwives and midwifery throughout the world, between 2018 and 2020 the International Confederation of Midwives (ICM) worked with partners to implement a programme to increase the professional capacity of midwives in three countries: Ethiopia, Rwanda and Tanzania. The programme is known as 50,000 Happy Birthdays[1] (50KHB).

The 50KHB programme was funded by Laerdal Global Health (LGH) and the Latter-day Saint Charities (LDSC). Its main objective was to train, equip and support midwives' associations (MAs), midwives and other health care providers to enable more Happy Birthdays in the programme countries. Within this overall objective, the programme aimed to:

- Strengthen pre-service teaching and learning in educational institutions to enable institutionalisation of the Helping Mothers Survive (HMS) and Helping Babies Survive (HBS) modules
- Support in-service continuing professional development (CPD) programmes in health facilities to implement the HMS and HBS modules
- Improve specific birth outcomes (related to the HMS and HBS module content) for women and newborns
- Strengthen the capacity of the MAs in the three countries

The programme aimed to train midwives and other health workers using modules from the HMS[2] and HBS[3] training programmes developed by Jhpiego and the American Academy of Pediatrics, based on World Health Organisation guidance. The programme involved two HMS modules (Bleeding After Birth Complete (BABC) and Pre-Eclampsia/Eclampsia (PEE)) and three HBS modules (Helping Babies Breathe (HBB2.0), Essential Care for Every Baby (ECEB) and Essential Care for Small Babies (ECSB)).

A cascade approach was employed, with an initial training of Master Trainer Facilitators (MTFs) at national or provincial level, who were then deployed to train institutional Master Trainers (MTs).[4] MTs were then tasked with training 50KHB Champions (health workers and students) to prevent, detect and manage the conditions that are the most common causes of maternal and newborn mortality in these three countries.

The training was designed to be consolidated by a series of low dose, high frequency (LDHF) practice sessions, i.e. short and frequent skills practice or quality improvement activities. It is competency-focused and therefore aligns well with ICM's recommended approach to midwifery education and practice. Programme implementation was the responsibility of the national MA, and ICM provided arms-length supportive supervision to the three MAs with a view to building their capacity to manage and deliver this type of programme and thus make a greater contribution to policy and practice.

In Ethiopia the programme targeted 5 of the country's 11 regions (Addis Ababa, Oromia, Amhara, SNNPR and Tigray). These 5 regions represent about 63% of the country's population. **In Rwanda** the programme was implemented across all five provinces. **In Tanzania** the programme initially targeted 3 regions: Geita, Kagera and Mara. However, early in the implementation period, the ministry of health decided to replace

[1] More on the programme: https://laerdalglobalhealth.com/partnerships-and-programs/50000-happy-birthdays/
[2] HMS module: https://hms.jhpiego.org/training-materials/
[3] HBS module: https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/helping-babies-survive/Pages/default.aspx
[4] The terminology used to describe the three levels of trainer was different in each country, but for the purposes of this report, these are the terms used for all countries.

Kagera and Mara regions with Katavi and Tanga regions. Katavi is more remote and less populous than the region it replaced, so there were fewer sites and health workers at which to implement the programme. Additional funding from UNFPA allowed the programme to expand into Simyu region plus some other UNFPA-supported sites, and some sites in Dar es Salaam were also added. Because these sites were added later and not included in the application for ethical approval for monitoring, evaluation and learning (MEL), the programme's MEL activities focused only on the sites in Geita, Katavi and Tanga.

Table 1.1 shows the number of programme implementation sites in each of the three countries, disaggregated by type. The MAs did not have the resources to conduct in-person supportive supervision visits to every site, so each selected a sample of sites to receive regular in-person visits, during which data were collected in support of several of the monitoring indicators. Many of the other sites were supported remotely by the programme managers, using mobile phones.

Table 1.1: Implementation sites and supportive supervision sites, by country

	Implementation sites				Supportive supervision sites		
			Tanzania				
	Ethiopia	Rwanda	Original sites	Additional sites	Ethiopia	Rwanda	Tanzania
Hospitals	100	31	13	29	35	21	11
Health centres	50	209	46	18	16	25	9
Dispensaries	0	0	312	1	0	0	0
Schools	33	6	5	19	14	6	0
Total	**183**	**246**	**376**	**67**	**65**	**52**	**20**

ICM commissioned Novametrics Ltd to support the programme's MEL by carrying out an independent external evaluation and working with ICM and the national implementation teams to design and implement a strong programme monitoring system. This is the Novametrics endline MEL report, which aims to provide detailed information about the programme's activities, outcomes and impacts.

2 Evaluation design

2.1 Overview

The monitoring and evaluation of the 50KHB programme combined both a qualitative study and the collection of routine quantitative data from implementation sites. During the small-scale midline evaluation study which took place in 2019, the main method of data collection for the qualitative arm was key informant interviews (KIIs), including programme beneficiaries, managers of implementation sites, and external stakeholders. For the endline evaluation, in depth case studies were carried out across a greater number of implementation sites in all three countries, and included KIIs, focus group discussions, and observations.

The objectives of the evaluation were to:

- Assess the effectiveness of the implementation of the programme;
- Identify how ICM has supported country-level stakeholders to engage with the programme;
- Identify the activities/processes ICM used which contributed to the sustainability of MAs implementing HMS/HBS training in each country;

- Assess the extent to which the programme achieved its objectives and report on any contributing factors to the successes/achievements of the programme;
- If relevant, identify reasons for failing to fully achieve the stated objectives;
- Based on the findings of the evaluation, provide concrete recommendations for future similar programmes;
- Provide programme evaluation reports and other deliverables which can be used to disseminate findings to donors and stakeholders.

The evaluation questions have been organised under process evaluation criteria[5]. A process evaluation study aims to understand the functioning of an intervention, by examining implementation, mechanisms of impact, and contextual factors. Key dimensions include:

- **Acceptability**: perceived relevance and value of the programme
- **Dose/Exposure**: how much intervention was delivered?
- **Reach**: did the programme reach everyone it set out to reach?
- **Fidelity**: was the programme implemented according to the plan?
- **Mechanisms of impact**: how did the activities lead to the results?
- **Mediators**: intermediate processes which explain consequences
- **Contextual factors**: influences beyond the control of the implementation team
- **Recruitment and retention**: what keeps stakeholders engaged?

Supported by programme monitoring data, the qualitative study supports establishing links between programme's activities and the observed changes at the outcome and impact level. The study design does not enable us to attribute all the observed changes to the programme, but has made it possible to ascertain the extent to which the programme has made a contribution.

In each country the study was carried out in the form of a case study; a method particularly useful for understanding how different elements (implementation, context and other factors) fit together and how different elements produced the observed effects. Country level studies build on three levels:

- Institutional level study: An in-depth study of pre-service educational institutions and health facilities. Data collection methods included interviews, focus group discussions (FGDs) and observation. The aim was to understand how 50KHB was received within institutions, and its potential for sustainability.
- The national level study: additional interviews with stakeholders from national level to gain a broader understanding of the context and the programme implementation process.
- Global level insights: KIIs were carried out with ICM and LGH to provide a broad understanding of the programme implementation process across the three settings.

2.2 Sampling strategy

In each country, data were collected at national level, and at district level (zonal level in Ethiopia). Stratified random sampling was used to select the sample of evaluation sites (see Annex A for details), and the selected sites are shown in Table 2.1. To better understand the strengths and weaknesses of the programme, we purposely selected both 'high-performing' sites and less well-performing sites in terms of programme implementation. We assumed that SS site status would act as an appropriate proxy for performance, on the basis that the SS sites should be performing better than the unsupervised sites.

[5] See MRC guidance: https://mrc.ukri.org/documents/pdf/mrc-phsrn-process-evaluation-guidance-final/

Table 2.1: Sample of evaluation sites

	Rwanda	Tanzania	Ethiopia
District/zone #1 (urban)	Kigali City	Geita (town)	Kirkos (sub-city), Addis Ababa
Education institution	Mount Kenya University*	Geita Nursing and Midwifery School	Addis Ababa University
Hospital	Polyfam Clinic (private)	Geita Regional Referral Hospital*	Zewditu Memorial Hospital; Ras Desta Damtew Memorial Hospital[6]
Primary health facilities	Remera (Gasabo) CS; Nyacyonga CS	Nyankumbu HC; Bungw'angoko dispensary	Kazanchis HCΨ
District/zone #2 (rural)	Kayonza, East province	Muheza, Tanga region	Hawassa, SNNPR
Education institution	Rwamagana Nursing School*ʃ	St Augustine School of Nursing and Midwifery	Hawassa University, Wolqite University
Hospital	Gahini hospital*	Muheza designated district hospital*	Hawassa Hospital
Primary health facilities	Mukarange CS*; Rukara CS	Mkuzi HC; Misozwe dispensary	Geda HC (Adama, Oromia region)Ψ

* = supportive supervision site. ʃ = Not in the sampled district/zone but the nearest education institution to this district, and *en route* between the two sampled districts/zones. Ψ = there is only one primary level implementation site in this zone.

At the global and national levels, purposive sampling was used to select interviewees, based on the evaluation team's knowledge of the key stakeholders within the selected organisations. At the sub-national level, the MAs supported the evaluation team by requesting the cooperation of the sampled sites. They worked together with the national MEL consultants to request:

1. An appointment with the health facility manager or education institution principal for a KII (or their nominated deputy)
2. An appointment with a Master Trainer/practice coordinator at that site
3. The recruitment of a group of 6-8 champions (at health facilities) or 6-8 students/recent graduates (schools) who received training under the programme

Table 2.2 summarises the number of informants, and full details are shown in Annex A. In total, 55 KIIs and 22 FGDs were carried out, involving a total of 157 informants.

[6] Initially, Gandi Memorial Hospital was selected as an evaluation site. EMwA informed Novametrics that it was no longer an implementation site, so it was replaced with Ras Desta Damtew Memorial Hospital.

Table 2.2: Sampling approach for the endline evaluation

Stakeholder type	Method	Target number of informants	Actual number of informants
Global level			
International Confederation of Midwives (ICM)	KII	2	2
Laerdal Global Health (LGH)	KII	2	2
National level			
Midwifery Association leader	KII	1 per country	2
Midwifery Association programme manager(s)	KII	minimum 1 per country	4
Master trainer facilitators	KII	2 per country	3
Ministry of Health representative(s) (nominated by the MA)	KII	minimum 1 per country	9
UN organisation(s) or NGO(s) with a stake in the programme (nominated by the MA)	KII	minimum 1 per country	5
District/zone level			
Master trainers and practice coordinators	KII	1 per evaluation site (8 per country)	23
Health facility managers	KII	1 per evaluation health facility (6 per country)	11
Managers/principals of educational institutions	KII	1 per school (2 per country)	5
Champions at educational institutions (students or recent graduates)	FGD	6-8 per school (12-16 per country)	34
Champions at health facilities	FGD	6-8 per HF with >5 champions. Otherwise, as many as are available on the day of the visit	57

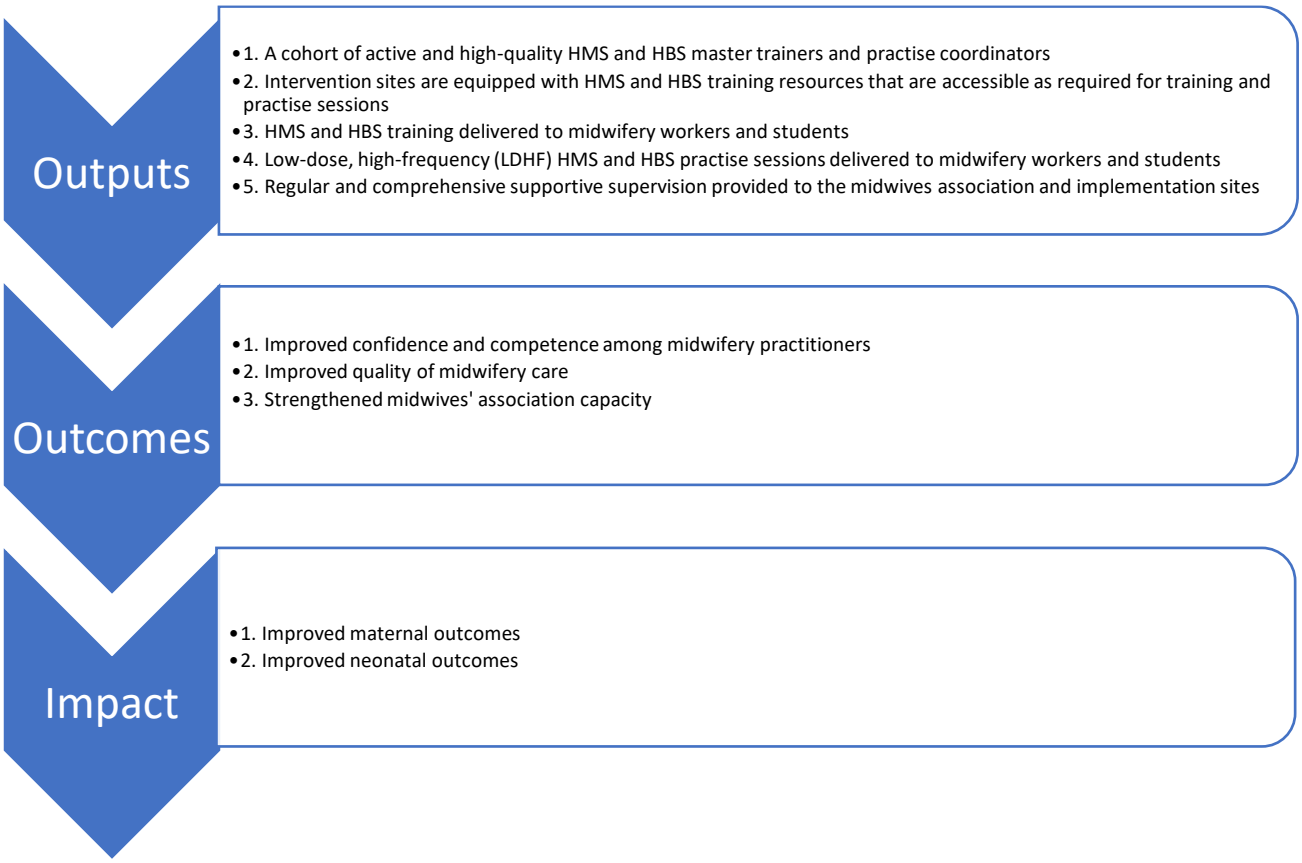
2.3 Ethical approval

Ethical approval for the evaluation study was obtained in all three countries. In Rwanda the application was submitted in mid-November 2018, and in Ethiopia and Tanzania it was submitted in early December 2018. In Ethiopia, approval was received from the Ethiopian Scientific and Ethical Review Office on 23 May 2019 (5.5 months after the initial application). In Rwanda, approval was received from the National Ethics Committee (reference 0030/RNEC/2019) on 28 January 2019 (just over 2 months after the initial application). In Tanzania, approval was received from the National Institute for Medical Research (reference NIMR/HQ/R.8a/Vol.IX/3025) on 27 February 2019 (almost 3 months after the initial application) – which allowed the MEL work to begin - and approval from the Tanzania Commission for Science and Technology was received on 19 June 2019.

2.4 Data collection

The monitoring system for the programme was based on a number of quantitative indicators. The monitoring framework for the programme used the logical framework (logframe) approach and is illustrated in Figure 2.1:

Figure 2.1: 50KHB Monitoring framework



For each output, outcome and impact, a number of quantitative indicators was selected, each of which was monitored either on an ongoing basis or at regular intervals throughout the implementation period via a suite of monitoring tools, comprising:

- Training Register
- Practice Register
- Supportive Supervision tool
- Respectful Maternity Care (RMC) questionnaires
- ICM's Member Association Capacity Assessment Tool (MACAT)
- ICM's internal records of interactions with the MAs

Details of each of these tools can be found in Annex B.

Endline qualitative data collection took take place in each country over a two-week period. In Rwanda this was 20-31 January 2020, and in Ethiopia and Tanzania it was 3-14 February 2020. In each country the evaluation team consisted of one international consultant and one national consultant. The national consultants were fluent in English and the predominant national language. Informants were offered the choice to be interviewed in English or in their mother tongue. If they chose English, the international consultant led the interview; otherwise the national consultant did so. All interviews were carried out in

person, and informants were asked to read an information sheet in the appropriate language, and to give their consent before the interview commenced.

The evaluators took detailed notes during interviews and observations, using a pre-prepared matrix which prompted them to ask questions about all of the process evaluation criteria. All interviews in Rwanda and Tanzania took place in private, enclosed spaces such as offices and meeting rooms, and this was done where possible in Ethiopia, but in some cases the location was not private due to lack of availability of a suitable space on the day of the visit. Interviews were audio recorded when consent was given by interviewees (which it was in nearly every case). Interviews were not transcribed in full; recordings were used to refine the notes taken during interviews and direct citations. Interview notes were translated by the national consultants into English when the interviews were carried out in other languages.

2.5 Analysis and validation of findings

For the monitoring data, descriptive analysis was conducted using spreadsheets. For the process evaluation data, content analysis was used to identify common themes across interviewee responses, as well as to identify "outlier" views. Verbatim quotes were selected to illustrate main themes. Findings were organised according to the evaluation framework.

In each country, **a consultative workshop** was held at the end of the data collection period to share preliminary evaluation findings with key stakeholders from the MAs. The aim was to reach consensus on results and recommendations, and gain additional contextual insights to support data analysis and interpretation of results. Key stakeholders invited to this workshop were identified in collaboration with the MAs, ICM and programme donors. A draft of this final evaluation report was shared with the three MAs, and their feedback was incorporated before finalisation.

2.6 Strengths and limitations

The combination of extensive quantitative monitoring data and qualitative data gathered with a breadth of stakeholders allowed us to have a clear picture of the processes that occurred in each country, the achievements and gaps, and to formulate recommendations. Nevertheless, there were some limitations as follows:

- The programme implementation period was just 18 months, so we would not expect its full impact to be evident yet: the evaluation results should be interpreted with this in mind. This is particularly true for the many individual implementation sites which were not reached until towards the end of the implementation period.
- Data quality for some of the quantitative monitoring indicators was questionable: this is highlighted in the relevant sections of this report. It applies particularly to the indicators relating to the number of LDHF practice sessions and the RMC assessments.
- Data are missing for some indicators in some countries, due to (a) HMIS not collecting the required data and/or (b) monitoring tools not being used as designed.
- The limitations of HMIS data are well-documented: they are known to be of variable completeness and quality. Our reliance on HMIS data for monitoring the impact of the programme in Ethiopia and Tanzania is a limitation of this analysis.

- The MEL budget permitted the evaluation visits to take place in two locations per country, but the programme was implemented in many more. The qualitative evaluation data cannot be assumed to be representative of all implementation sites. The selection of sites to be visited during the evaluation visits was not fully randomised because of logistical constraints (travel distances, time and availability of staff). This was particularly true in Ethiopia.
- Not all selected interviewees were available on the day of the interviews (especially in Ethiopia), or had sufficient time to partake in a full-length interview (due to clinical/work commitments).
- There were no qualitative evaluation interviews with pregnant women, women who had recently given birth or community members, which would have added an extra dimension to the evaluation.

3 Results

3.1 Impact: Changes to maternal and neonatal health indicators

As described in section 2.4, it was challenging to monitor the programme's impact indicators, and the results reported below should therefore be interpreted with caution. Different solutions to the challenges were found in each country. In Ethiopia and Tanzania, data from the national HMIS were obtained for all 50KHB implementation sites (and non-implementation sites in Ethiopia's implementation regions). In Rwanda, the programme's internal monitoring tools were used, and it was possible to conduct a time trend analysis for 27 sites. Baseline, midline and endline HMIS data were also provided for Rwanda by the Rwanda Biomedical Centre (RBC).

In Rwanda and Tanzania, the endline results show impressive improvements compared to baseline, especially for eclampsia and postpartum haemorrhage (PPH) case fatality rates. Although we cannot conclusively attribute this change to the programme (for that we would need data from a comparable sample of non-intervention sites), there are reasons to be encouraged. First, the results included a large sample of deliveries, even in Rwanda where just 27 facilities were covered. A further sign of validity is the similarity between the patterns of results in Rwanda and Tanzania: this gives us confidence that the programme could have been a major contributory factor, especially considering that the two datasets came from different types of data source.

The impact in Ethiopia is less clear due to seasonal fluctuations in recorded mortality rates. If quarter 3 of 2018 is taken as the baseline, there were slight *increases* in maternal and neonatal mortality rates between baseline and endline (although the increases were smaller at the 50KHB implementation sites than at the non-implementation sites, which is an indication that the programme may have mitigated the circumstances surrounding a more general increase in mortality). If quarter 4 of 2018 is taken as the baseline, maternal and neonatal mortality *decreased* between baseline and endline. Whichever period is used for the baseline, however, there was a reduction in the stillbirth rate at the implementation sites. It should be noted that, although the programme was launched in early 2018, implementation did not commence in earnest until quarter 4.

Ethiopia

The Ethiopian HMIS system collected data for four of the seven impact indicators (Table 3.1). If we treat quarter 3 of 2018 as the baseline and quarter 4 of 2019 as the endline, there were small *increases* in the maternal and neonatal mortality rates and a small decrease in the stillbirth rate at the health facility

implementation sites. There was also a small increase in the rate of referral to neonatal intensive care (NICU).

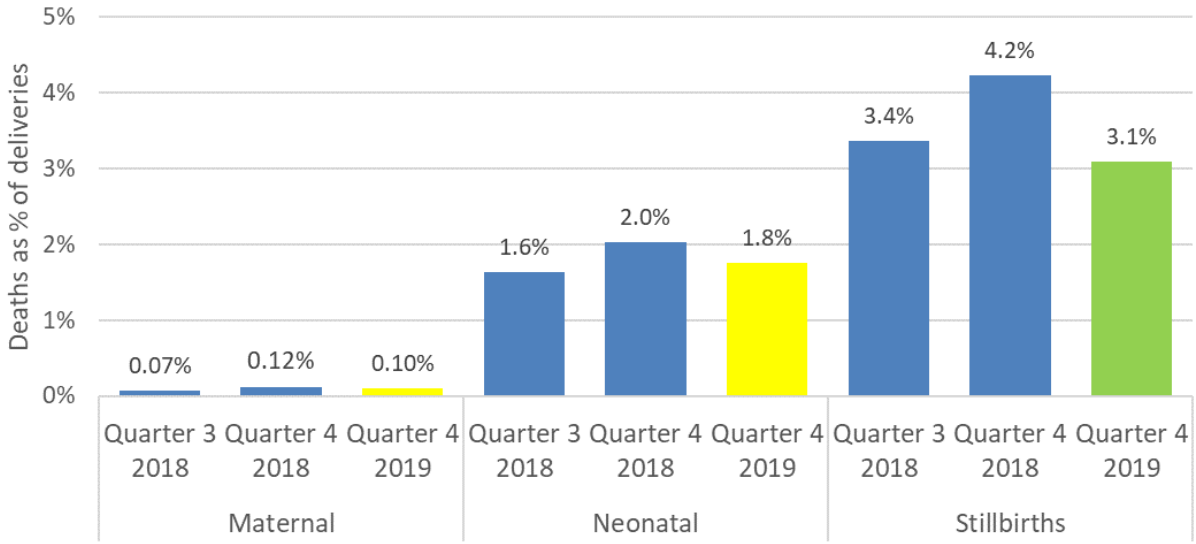
The Ethiopian HMIS also provided data for the quarters in between these two periods, which showed a high degree of seasonal fluctuation in these indicators: quarter 3 of 2018 recorded very low mortality rates. If we take quarter 4 of 2018 as the baseline, a very different picture emerges: there were *reductions* in all three mortality rates between baseline and endline at the 50KHB implementation sites Table 3.1 and Figure 3.1).

Table 3.1: Impact indicators: HMIS data for 149 health facility implementation sites in Ethiopia

Impact indicators	Baseline 1 (Jun-Sept 2018)	Baseline 2 (Oct-Dec 2018)	Endline (Oct-Dec 2019)
1.1. Case fatality rate: postpartum haemorrhage	*	*	*
1.2. Case fatality rate: eclampsia	*	*	*
1.3 Facility-based maternal deaths as a % of deliveries	60 deaths / 81,724 deliveries = **0.07%**	75 deaths / 62,552 deliveries = **0.12%**	83 deaths / 83,996 deliveries = **0.10%**
2.1. Case fatality rate: neonatal asphyxia	*	*	*
2.2. Neonatal deaths within 7 days of delivery (excluding stillbirths) as a % of deliveries	1,335 deaths / 81,274 deliveries = **1.64%**	1,266 deaths / 62,552 deliveries = **2.02%**	1,474 deaths / 83,996 deliveries = **1.75%**
2.3. Facility-based fresh stillbirths as a % of deliveries	2,749 deaths / 81,274 deliveries = **3.4%%**	2,647 deaths / 62,552 deliveries = **4.2%**	2,602 deaths / 83,996 deliveries = **3.1%**
2.4. % of facility-based deliveries for which the newborn was referred or admitted to NICU	15,516 / 81,274 deliveries = **19.1%**	15,978 / 62,552 deliveries = **25.5%**	17,272 / 83,996 deliveries = **20.6%**

* HMIS did not include data for this indicator
Data source: HMIS

Figure 3.1: Time trends in mortality rates for 149 health facility implementation sites in Ethiopia



Data source: HMIS. Note: yellow bars indicate worse outcomes in comparison to quarter 3 of 2018, and green indicates an improvement.

The reasons for the seasonal fluctuations in recorded mortality rates are not clear and may be indicative of poor HMIS data quality, which makes it difficult to draw firm conclusions about the impact of the programme in the absence of programme monitoring data for these indicators (see Section 3.5.1). It is, however, encouraging to compare the results from the 50KHB implementation sites with the other sites.[7] We cannot make a direct comparison between implementation sites and non-implementation sites because most of the implementation sites were hospitals, whereas most of the non-implementation sites were primary health facilities. As would be expected, hospitals recorded higher mortality rates than primary health facilities, because they see more of the complicated cases. Furthermore, hospitals receive referrals from a wide range of primary health facilities, not all of which received training under the programme. Nevertheless, cautious comparison of the percentage change between baseline and endline may be made.

If we use quarter 3 of 2018 as the baseline, although the maternal and neonatal mortality rates increased, they increased by a smaller amount at the 50KHB implementation sites than at the non-implementation sites. If we use quarter 4 of 2018 as the baseline, the maternal and neonatal mortality rates reduced at the implementation sites and increased at the non-intervention sites – in other words, the 50KHB sites bucked the overall trend of increased maternal and neonatal mortality. This indicates that the programme may have had a protective effect against whatever caused the overall increase in recorded maternal and neonatal mortality in the five regions.

Rwanda

The results shown below are based on completed supportive supervision questionnaires from 27 of the 52 supportive supervision sites: 13 hospitals and 14 health centres. As described in Section 2.4, the MEL system was launched part-way through programme implementation, so no data for these impact indicators were collected in 2018. At these 27 sites, the supervisors collected baseline data retrospectively by reviewing historical labour ward records.

All of the impact indicators (Table 3.2) showed an improvement between baseline and endline, with reduced case fatality rates and increased referral rates. Of particular note are the reductions in the case fatality rates for postpartum haemorrhage (PPH) and eclampsia (Figure 3.2). Furthermore, the number of eclampsia cases declined from 192 to 169, which may reflect better treatment of pre-eclampsia to avoid progression of the disease to eclampsia, or perhaps there was a change in the accuracy of diagnosis. The number of PPH cases increased, which again may reflect change in diagnosis accuracy (there is some evidence from other settings that this type of intervention can build capacity to identify PPH[8]).

[7] HMIS data for non-implementation sites in the focus regions were provided for Ethiopia, but for the other two countries we have data only for the implementation sites.

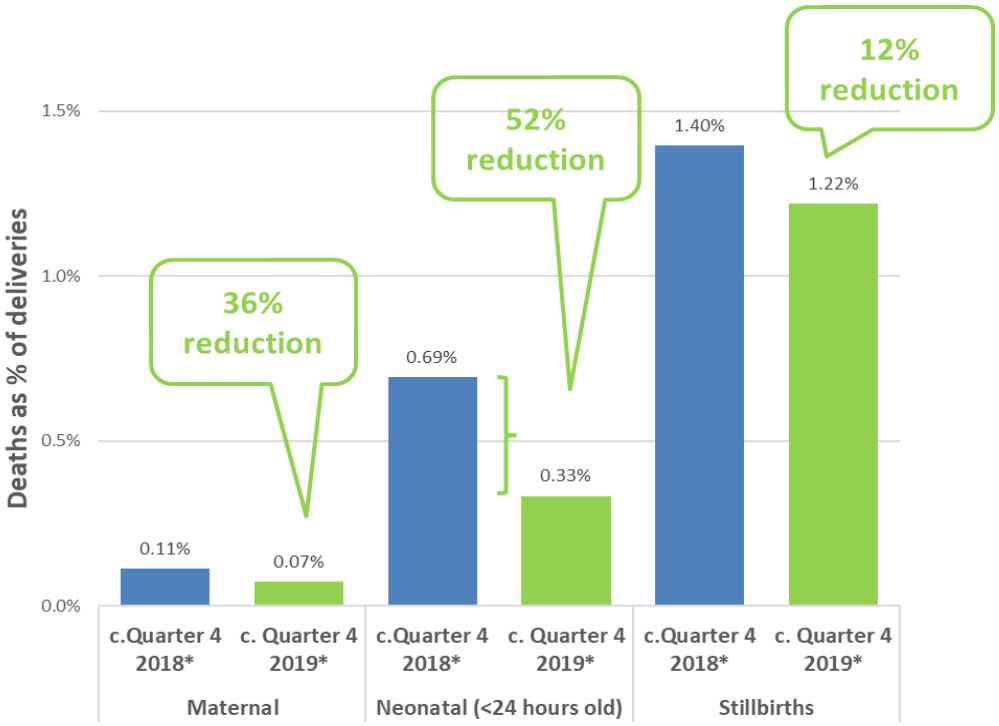
[8] Ghosh et al (2019). Diagnosis and management of postpartum hemorrhage and intrapartum asphyxia in a quality improvement initiative using nurse-mentoring and simulation in Bihar, India. PLOS ONE 14(7):e0216654.

Table 3.2: Impact indicators: supportive supervision tool data for 27 health facility implementation sites in Rwanda

Indicators	Baseline*	Endline*
1.1. Case fatality rate: postpartum haemorrhage	11 deaths / 152 cases = **7.2%**	7 deaths / 205 cases = **3.4%**
1.2. Case fatality rate: eclampsia	7 deaths / 192 cases = **3.6%**	0 deaths / 169 cases = **0.0%**
1.3 Facility-based maternal deaths as a % of deliveries	15 deaths / 13,252 deliveries = **0.11%**	11 deaths / 15,004 deliveries = **0.07%**
2.1. Case fatality rate: neonatal asphyxia	63 deaths / 314 cases = **20.1%**	61 deaths / 351 cases = **17.4%**
2.2. Facility-based neonatal deaths within 24 hours of delivery (excluding stillbirths) as a % of deliveries	92 deaths / 13,252 deliveries = **0.7%**	50 deaths / 15,004 deliveries = **0.3%**
2.3. Facility-based fresh stillbirths as a % of deliveries	185 deaths / 13,252 deliveries = **1.4%**	183 deaths / 15,004 deliveries = **1.2%**
2.4. % of facility-based deliveries for which the newborn was referred or admitted to NICU	867 / 13,252 deliveries = **6.5%**	1371 / 15,004 deliveries = **9.1%**

* The baseline results are from a 3-month period between June 2018 and January 2019 and the endline results from a 3-month period between September 2019 and March 2020. The supervision visits took place at different times, hence the variation in the timing of the 3-month observation periods.
Data source: supportive supervision tool devised specifically for the programme.

Figure 3.2: Time trends in mortality rates for 27 health facility implementation sites in Rwanda



* The baseline results are from a 3-month period between June 2018 and January 2019 and the endline results from a 3-month period between September 2019 and March 2020. The supervision visits took place at different times, hence the variation in the timing of the 3-month observation periods.
Data source: supportive supervision tool devised specifically for the programme.

Just before this report was submitted, the evaluation team received endline HMIS data from the RBC. A brief analysis of the HMIS data for the 27 facilities included in the above analysis revealed some similarities but many discrepancies between the two data sources (see Annex C).

Tanzania

The results shown below are from the HMIS data for the 369 50KHB health facility implementation sites. All but one of the impact indicators (Table 3.3 and Figure 3.3) showed an improvement between baseline and endline, the exception being the case fatality rate for neonatal asphyxia.

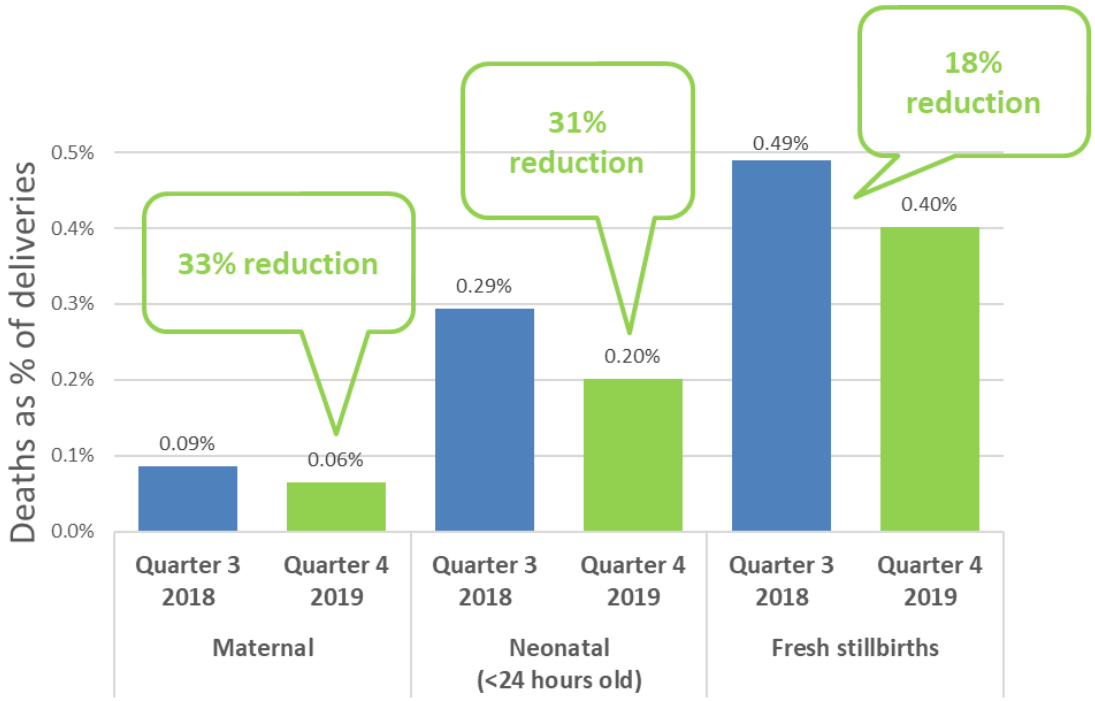
Of particular note are the reductions in the case fatality rates for PPH and eclampsia. Furthermore, as in Rwanda, the number of eclampsia cases declined steeply, which may reflect better treatment of pre-eclampsia to avoid eclampsia, or perhaps there was a change in the way this condition was diagnosed. Also mirroring the Rwanda results, the number of PPH cases increased, which again may reflect change in diagnosis methods. On the other hand, the case fatality rate for neonatal asphyxia increased from 15.4% to 16.8%. This may be a reflection of the fact that the Tanzanian Midwives Association (TAMA) placed more emphasis on HMS than on HBS (see Section 3.5.1). Another possibility is that it was due to more accurate diagnosis: this theory is supported by the fact that the denominator of the percentage (number of cases) changed more than the numerator (number of deaths), and the overall neonatal mortality rate decreased from 0.3% to 0.2%.

Table 3.3: Impact indicators: HMIS data for 369* health facility implementation sites in Tanzania

Impact indicators (number of facilities included in the figures)	Baseline (June-September 2018)	Endline (October-December 2019)
1.1. Case fatality rate: postpartum haemorrhage (n=369)	25 deaths / 162 cases = **15.4%**	23 deaths / 196 cases = **11.7%**
1.2. Case fatality rate: eclampsia (n=368)	8 deaths / 191 cases = **4.2%**	3 deaths / 98 cases = **3.1%**
1.3 Facility-based maternal deaths as a % of deliveries (n=369)	39 deaths / 45,345 deliveries = **0.09%**	33 deaths / 51,108 deliveries = **0.06%**
2.1. Case fatality rate: neonatal asphyxia (n=367)	46 deaths / 299 cases = **15.4%**	43 deaths / 256 cases = **16.8%**
2.2. Facility-based neonatal deaths within 24 hours of delivery (excluding stillbirths) as a % of deliveries (n=368)	133 deaths / 45,294 deliveries = **0.3%**	103 deaths / 51,045 deliveries = **0.2%**
2.3. Facility-based fresh stillbirths as a % of deliveries (n=369)	222 deaths / 45,345 deliveries = **0.5%**	205 deaths / 51,108 deliveries = **0.4%**
2.4. % of facility-based deliveries for which the newborn was referred or admitted to NICU (n=369)	99 / 45,345 deliveries = **0.2%**	147 / 51,108 deliveries = **0.3%**

* Data for a few facilities were excluded due to quality concerns, e.g. if a facility reported more asphyxia deaths than asphyxia cases then it was excluded from the results for indicator 2.1.
Data source: HMIS

Figure 3.3: Time trends in mortality rates for 369* health facility implementation sites in Tanzania



* Data for a few facilities were excluded due to quality concerns, e.g. if a facility reported more asphyxia deaths than asphyxia cases then it was excluded from the results for indicator 2.1.
Data source: HMIS

3.2 Acceptability

This section covers the perceived acceptability and relevance of the programme in the three countries, especially in terms of the content, pedagogy and the training implementation approach. The evaluation focused especially on the use of the LDHF approach for practice and the cascade approach for training dissemination from central level to health facility/educational institution level.

3.2.1 Acceptability of the initial training

Overall, the initial 'block' training of the HMS and HBS modules was extremely well received: it was perceived to be highly relevant to the work of those providing maternal and newborn care, to use highly effective teaching methods (especially the focus on practical skills), and to be well organised. There was occasional criticism, which focused mainly on two issues: (1) some found the pace of the training to be too fast, and (2) some felt that the *per diem* payment was too low.

In **Ethiopia**, there was a large consensus on the strong relevance and value of the programme. Most notably, respondents mentioned the value of hands-on training (as opposed to more traditional training approaches), the strong focus on the main causes of maternal and newborn death, on-site training (less disruption to service provision), and the increase in midwives' self-confidence and better quality of care due to the regular rehearsal of learning through the LDHF approach.

> *"The training was very relevant and timely. As the lead midwife at the maternity ward, I am a living witness for the fact that PPH and pre-eclampsia are the main problems that midwives deal with."*
> [Midwife/Maternity ward head, urban health centre, Ethiopia]

However, there were issues with obstetrician/gynaecologist residents and their non-acceptance of the 50KHB inputs, which were not in line with their usual practice.

> *"Please note that, there is a huge amount of resistance by the residents here. Since they feel that they are the decision-makers, they want us to wag our tails every time they say something. I am finding it very difficult to practice what I have learnt because of that!"*
> [Midwife, rural hospital, Ethiopia]

All interviewed stakeholders **in Rwanda** perceived the programme to be highly relevant and acceptable and confirmed its importance in filling vital skills gaps in midwifery care, increasing motivation of staff working in MNH, as well as generating interest in the midwifery profession among nurses.

> *"For those students, it was the first time they saw the real maternity cases. They had just a little knowledge about maternal and newborn health, and only the theory. After the training they were very excited, they had seen how to do it and they had practised. In the clinical practice they were very confident"*
> [Practice coordinator, rural education institution, Rwanda]

> *"Champions have been very excited – we have had nurse champions asking how to become midwives, they have been so inspired by what they learned"*
> [Staff member, MA, Rwanda]

Students and educators commented that the timing of the training was good, because it immediately preceded the students' clinical placement, which meant they could put their new knowledge into practice while it was still fresh in their minds.

Similarly, in **Tanzania,** stakeholders perceived the programme to be highly relevant and acceptable and confirmed its importance in filling vital skills gaps in midwifery care, increasing motivation of staff working in MNH, and in supporting key government priorities and strategies.

> *"At my institution it was accepted right away. The students said that they like it a lot. They were very interested (…) The students like to practise. They become more experienced, they get the skills, they become competent*"
> [Director, urban education institution, Tanzania].

> *"It was a big strength for us that our national professional association is building capacity of their fellow members. There is a big difference between an organisation or the professional association doing it. That is a big strength and contribution to the health care system. I enjoyed working with them being a medical doctor. A huge investment should be done in midwifery"*
> [Staff member, MoH, Tanzania].

3.2.2 Advantages and disadvantages of the LDHF approach

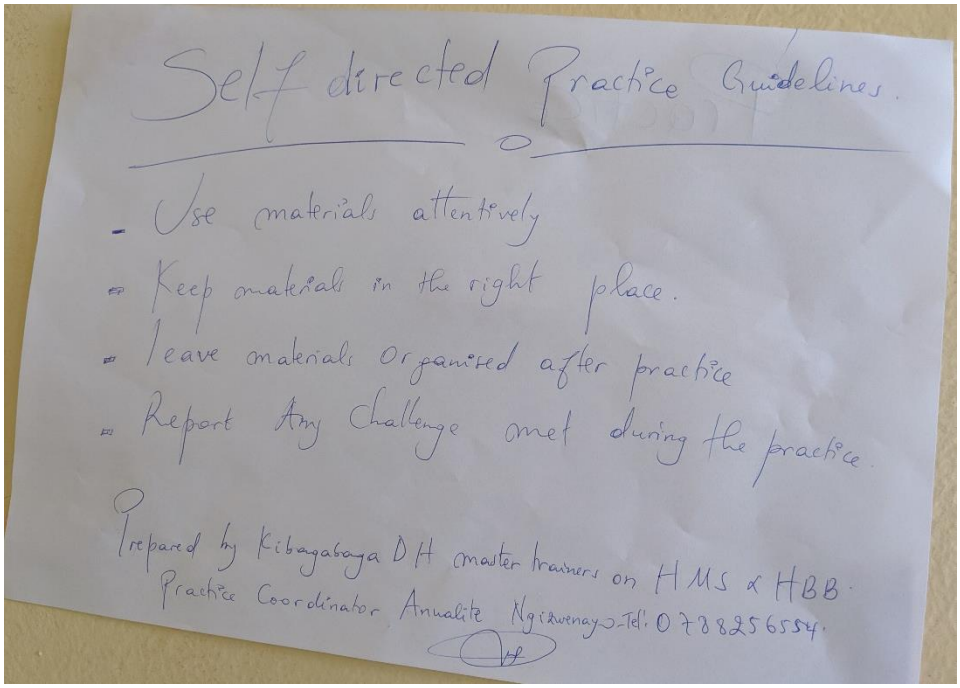
In Rwanda, the LDHF approach was perceived as particularly relevant for in-service training, but somewhat less compatible with pre-service education. This was mainly because teaching and learning approaches in university/school settings are not individualised. Neither of the educational institution evaluation sites in Rwanda had implemented LDHF as planned. Although the evaluators were able to

ascertain that the 50KHB equipment was present in the skills lab at one of the teaching institutions and were told that students could in theory book LDHF sessions, none had actually done so.

> *"…the university timetable is very full and structured, without leaving time for additional LDHF practice sessions. Also, it's not easy in the university setting to identify and address individual weaknesses, which is what LDHF is designed to do"*
> [Staff member, UN organisation, Rwanda]

The quality of the implementation of the LDHF approach in health facility sites varied. Facilities that successfully integrated LDHF training into their plans have accounted for the unpredictability of health facilities' timetables and the limited availability of staff; for instance, by summoning staff to sessions through the use of a WhatsApp group. Nurses and midwives particularly appreciated having training accessible on-site, where knowledge exchange could then take place among colleagues.

> *"An emergency case could arrive at any time, so it's good to have regular refreshment of the training to keep the information at the front of the mind. The nurses are on rotation, so they aren't always working in maternity – so it's good to go through the training regularly to make sure they remember it"*
> [Nurses and Midwives FGD, urban health centre, Rwanda]



Unsupervised practice instructions, district hospital, Rwanda. Credit: Martin Boyce.

The LDHF sessions were also sometimes used as an approach to review a case, and replicate the situation using a simulator.

> *"The LDHF approach helps them to regularly refresh their knowledge and skills. Following a relevant case, they have a case review meeting the next day, and they will simulate the case using the mannequin to make sure everyone has understood what to do in similar situations".*
> [Midwife/practice coordinator, urban health centre, Rwanda]

The integration of LDHF was seen as a long-term process that required institutional level changes:

> *"We need to work hard to get them to take ownership of it and make it happen – it's new for them and change can be hard"*
> [Staff member, MA, Rwanda]

In Tanzania and Ethiopia, the LDHF approach was perceived as relevant for both in-service training and pre-service education, as long as it was provided at the correct time: the training was thought to be most relevant for final-year students who had already learned the basic theoretical elements of the HMS and HBS modules. The majority of respondents thought the approach was excellent but that it faced system-related challenges, including the lack of available time for in-service staff to prioritise practice sessions, and high staff turnover in facilities. Health staff and students tended to prefer taking part in supervised LDHF, as it enabled immediate feedback.

> *"The sessions are very relevant. They have managed to bring me this far. They are very appropriate to me because they target services I routinely provide and address gaps in my skills"* [Labour ward in charge/nurse-midwife, urban hospital, Tanzania]

> *"LDHF helps you understand one point very clearly – it is kind of a comprehensive approach to a specific topic/issue. You deal with one specific topic and understand it by reviewing it repeatedly"* [Nursing student, urban education institution, Ethiopia]

LDHF practice equipment, urban health centre, Tanzania. Credit: Leah Bohle.

Table 3.4 provides an overview of the most often cited advantages and disadvantages to the LDHF approach across all three countries.

Table 3.4: Advantages and disadvantages of the LDHF approach

Advantages of the LDHF approach	**Country/ies**
Regular refreshing of knowledge	ET, RW, TZ
Encourages knowledge sharing	ET, RW
People don't have to be absent from the workplace to benefit from training	ET, RW, TZ
It is free of cost both for institutions and trainees	ET, RW
Because the sessions are short, they can be delivered several times on a rotation basis, without the need for everyone to be off work at the same time.	RW
Disadvantages of the LDHF approach	Country/ies
Too many distractions when being trained on-site (challenge to fully engage)	ET, RW, TZ
It is reliant on a single person (the practice coordinator) and therefore only happens if that person stays in post	ET, RW, TZ
Lack of time to schedule the sessions	RW, TZ
Limitations in making practice corners available – i.e. limited space, safety of equipment is difficult to ensure, lack of commitment from health facility managers to create space	YET, RW, TZ
Time consuming to go through all modules in small increments	RW, TZ

3.2.3 Strengths and weaknesses of the cascade approach

Across all three countries, informants were asked for their views on the strengths and weaknesses of the 'cascade' approach used to disseminate the HMS and HBS trainings from MTFs to MTs to Champions. Generally, the approach was perceived as an excellent method of knowledge and skills transfer. Table 3.5 summarises the most commonly cited strengths and weaknesses of the cascade approach.

Table 3.5: Advantages and disadvantages of the cascade approach

Strengths	**Country/ies**
Improved midwives' status (increased respect) at health facility level	RW, TZ
Retention of new knowledge and skills and continuity in training	ET, RW, TZ
Encourages transfer of new knowledge and skills to colleagues and other facilities in catchment area	ET, RW
Cost-efficiency of the approach (no travel related costs)	ET, RW, TZ
Wider reach in terms of number of champions who can be trained under the programme	ET, RW, TZ
Flexibility in timing of training (based on workload, schedules and identified needs)	RW
Trainer knows the context (its people, challenges and training gaps)	RW
Simplifies follow-up of champions as trainer is on-site	ET, RW
Allows for other health worker occupation groups to be trained as well as midwives and nurses	RW, TZ
Builds regional midwifery training capacities, making regions more autonomous (ownership)	ET
Weaknesses	**Country/ies**
Maintaining the quality of the teaching at all levels is a challenge	ET, TZ
Lack of pedagogy skills of some on-site trainers	RW
Lack of knowledge sharing with colleagues in pre-service education settings	TZ

3.2.4 How could the programme have been further improved?

Study participants at all levels were asked how the 50KHB could be further improved in future. Table 3.6 presents the main recommendations.

Table 3.6: Suggestions for improving the programme

Suggestion	Country/ies
Additional time allocated to the training of champions	ET, RW, TZ
More time allocated to practical sessions during trainings	ET, RW
Increased availability of equipment at the onset of the programme	ET, RW, TZ, Global
Better communication and mechanisms for sharing equipment (mannequins especially) between institutions if there are not enough for all sites to have all the equipment	RW
More frequent supportive supervision/mentoring visits to follow up with institutions (on HMS and HBS content, but also on teaching/pedagogy skills)	ET, RW, TZ, Global
Train at least one additional champion at every site to increase frequency and sustainability of training	ET, RW
Focus more on pre-service education to ensure sustainability of programme	ET, TZ
Higher incentive payments for motivation	ET, RW
Recognition of training completion and running of LDHF sessions through certificates*	RW, TZ
Develop a benchmarking system to support healthy competition and engagement of implementation sites	TZ
Add new modules (such as 'Essential Care for Every Mother', Antenatal care, Advanced care for newborns, 'Abortion and post-abortion care')	RW
Increase the proportion of facilities that are trained on all modules	ET, RW
Better communication/engagement with programme implementation sites, and other national level actors working in MNH (governmental and non-governmental actors)	ET, RW, TZ, Global
Additional human resources to implement the programme at MA/country level	ET, RW, TZ, Global
Earlier set up of the MEL system, with early involvement of MAs in the design of the system and setting of targets	RW, Global
Orientation of medical staff to ensure buy-in and support of HMS and HBS modules (especially obstetrician/gynaecologists in hospital settings).	ET
Increased budget or more limited training targets	ET, RW, TZ, Global
Only launch the programme in country once finances and logistics are in place	Global

* This was standard practice under the programme, but many of the champions interviewed during the evaluation had not yet received their certificates due to logistical problems.

3.3 Dose/exposure

3.3.1 Institutionalised change

We asked evaluation interviewees to what extent the programme had resulted in institutionalised change. Stakeholders' perspectives highlighted that systemic changes have taken place, with interviewees also stating that there had been improvements in quality of care and patient outcomes (confirmed by the monitoring data – see Sections 3.1 and 3.6.2).

Below the main changes that interviewees reported are presented under a variety of headings. Illustrative quotes highlight how beneficiaries understand this change in practice.

Table 3.7: Institutionalisation of the HMS and HBS modules

Change	Country/ies
Content from HMS and HBS integrated into education institutions' teaching modules (however not yet in curriculum)	ET, RW, TZ
Modules perceived as having a good alignment with EmONC curricula taught at pre-service education institutions	RW, TZ
Integration of HMS and HBS content in antenatal care (i.e. teaching patients to recognise danger signs)	RW

"The training has also influenced our work in other departments, especially antenatal care – we give better information to the women and explain to them how to recognise danger signs and how to prepare for labour".
[Nurse, rural health centre, Rwanda]

"Even though HMS and HBS is not yet in the curriculum, we will integrate that into the second year from now onwards"
[Principal, urban education institution, Tanzania]

Table 3.8: Changes in organisation of care in clinical settings

Change	Country/ies
Maternal and newborn health is now seen as a shared responsibility among all health worker occupation groups (nurses, midwives, doctors)	RW
Integration of regular check-up of clients' vital signs	RW
Improved preparation of delivery rooms and emergency kits	RW, TZ
Establishment of an emergency preparedness team at facilities	TZ

"Because of the training, we have started regular sessions where we discuss our management when there are cases of PPH, pre-eclampsia and the like. Since we have anatomical models, some of the discussions give us the chance to bring our skills by trying them on the models and receiving feedback from our peers"
[Midwife, urban hospital, Ethiopia]

"Since the training, we have made a PPH kit and a PEE kit, which are stored in plastic boxes in the delivery room. These help with quality of care, because everything you need is in there, so you're less likely to forget to do something and you can get what you need quickly without having to look in cupboards or run to the pharmacy"
[Practice coordinator/ midwife, urban health centre, Rwanda]

PPH kit, urban health centre, Rwanda. Credit: Andrea Nove

"The health centre has only one midwife. Before the training, the other staff thought that all maternity cases were her job, and not theirs. Now they all take responsibility for maternity care – they do it well and share their knowledge. The midwife no longer feels overwhelmed – she feels part of a team"
[Facility in charge, rural health centre, Rwanda]

"Due to the training we have now established an emergency preparedness team. That is new. We have our morning meeting and one person is appointed the leader. The person makes sure that we have everything prepared in case of an emergency. We have a mobile phone where we receive calls from other lower level facilities. The leader manages the team which is on standby"
[Nurse-Midwife/Master trainer, urban hospital, Tanzania]

Table 3.9: Changes in clinical practice and provider attitudes

Change	Country/ies
Champions encouraged to own 50KHB and feel it's their responsibility to continue implementing the programme.	RW
Improved medication administration	RW, TZ
Improved clinical practice routines (e.g. newborn care, skin-to-skin contact as standard practice, delayed cord clamping, routine stabilisation of patients before referral)	ET, RW, TZ
Better detection of danger signs during patient admission	ET, RW
Increased awareness of respectful maternity care (RMC) and its importance	ET, RW, TZ
Improved clinical management of complications (eclampsia, haemorrhage)	ET, RW, TZ
Improved self-confidence and respect for evidence-based clinical procedures	ET, RW, TZ

"Before the training, care was something that was 'done to' clients – the clinician decided [what was to be done]. Now decisions are made jointly, in consultation with the client. Before, every decision was coming from the nurse. Now there is a collaboration between us and the client"
[Midwife/Practice coordinator, rural health centre, Rwanda]

"Before the training the providers were treating the clients badly (e.g. they were slapped). The providers were harsh and abused the mothers. Through the RMC training there was a change. The providers now treat them with greater respect; the mothers receive it well; and now it even happens that the mothers see us outside the hospital and thank us on the streets"
[Nurse-Midwife/Master trainer, urban hospital, Tanzania]

"This will not be the end... This thing is now in our minds. …we will continue – even if there is no TAMA, no Jhpiego. The good thing is we are mentoring the students before they become the workers"
[Nurse-Midwife/Master trainer, urban hospital, Tanzania]

Table 3.10: Changes in supervision

Change	Country
Adaptation from a more classic supervision model to mentoring (supportive supervision)	TZ

"I am mentoring now – not supervising; it has changed. It is quite different from supervision. But after the programme we did the mentorship. Even us tutors we were not having the skills – we have skills, but TAMA gave us more skills; we are even proud when we go to labour, when we go to paediatrics. Now I know how to do resuscitation"
[Midwifery tutor/Master trainer, rural education institution, Tanzania]

Table 3.11: Changes in the area of teamwork and communication

Change	Country/ies
Improved patient-provider relationship (respectful and reassuring communication)	ET, RW, TZ
Better cooperation between different departments to support MNH (in facilities and education institutions)	RW
Improved the teamwork between health professionals	ET, RW, TZ
A stronger culture of knowledge sharing	RW
Asking for help ('Shout for help!') or advice from colleagues is now seen as a positive action	RW, TZ

"There is better cooperation between different departments – when we 'Shout For Help', they come quickly – in the past they used to ignore us. This is because they feel as responsible as we do – they feel we are part of a single team. So now I feel I can shout for help when I need it, because I know they will respond"
[Midwife/Practice coordinator, rural hospital, Rwanda]

" 'Golden minute, golden minute!' has become like a slogan when we are called to attend a newborn or mother in maternity. Repeating this slogan among ourselves reminds us what to do, and of the importance of it"
[Practice coordinator, urban health centre, Rwanda]

"*We learned that it's not good to be alone with the woman during labour and delivery because she could go into shock at any moment. So now we work in teams more than we used to. We are confident now to 'shout for help' if we need it – we used to feel shy about asking for help, but not any more"*
[Nurse, rural health centre, Rwanda]

"We have very good team work since the training. People are organized and jobs are allocated. Everyone has their role but in case of an emergency we work together"
[Nurse-Midwife/Master trainer, urban hospital, Tanzania]

"Now they [colleagues] always call me and ask for my advice even if I am not around. I like it! For example: we only have one midwife during the night. They call me even during the night and I can help her and if I cannot come I tell her through the phone: do it like this, do this do this…"
[Nurse-Midwife, urban health centre, Tanzania]

"The team that attended the training has become more and more interactive with each other and that has enabled us to handle challenges. We have also been able to deal with patient care in a coordinated way by consulting with each other and functioning as a team"
[Midwife, urban hospital, Ethiopia]

3.3.2 Sustainability of improvements

In Ethiopia, programme leadership and national stakeholders were confident in the sustainability of the programme. The involvement from the start of the MoH, RHB and EMwA chapter offices (in regions) was seen as a strong foundation for sustainability. EMwA also plans to organise in each region a consultative workshop to discuss how to ensure sustainability through regional ownership, and aims to continue working with pre-service education institutions to integrate the training programme and methodology in

their curriculum. However, at beneficiary level, the perspectives were more mitigated. It seemed incentives were missing to ensure ToT trainers/champions would remain committed to the delivering trainings.

In Rwanda, beneficiaries were similarly confident about the potential for sustainability of the 50KHB programme. It was perceived that people's enthusiasm and interest in the programme would support sustainability, as well as working closely with government. To increase sustainability, the majority of respondents expressed the need for follow-up by RAM (i.e. supportive supervision and mentorship), and refresher trainings. Many respondents cautioned that the programme's success was over-reliant on a single individual within each implementation site, and thus was dependent on their personal motivation and commitment, and on their not moving to a different job. A few respondents however stated that the programme's teamwork approach to training had created a shared ownership at facility level (and had promoted institutional knowledge rather than only individual knowledge), and this would support sustainability in the long-term. Respondents from pre-service education institutions mentioned they are considering incorporating the training into their academic plans/curricula – which would ensure the sustainability of the inputs received so far. According to RAM, sustainability will also be supported through the presence of teaching corners in implementation sites after the programme has ended. The Rwandan MoH also requires institutions to have these corners, but the evaluation visits found that not all sites have them.

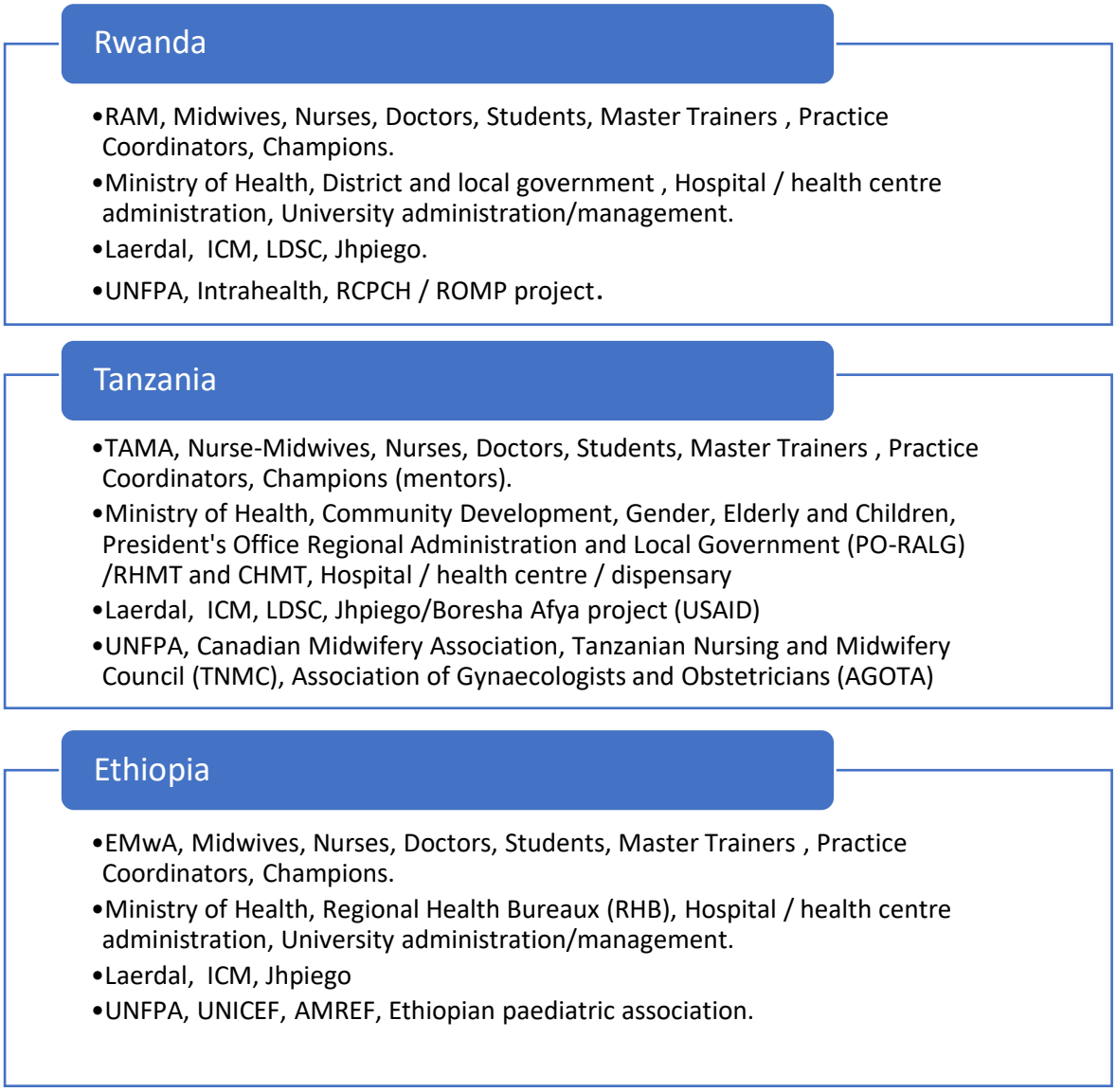
In Tanzania, beneficiaries were also confident about the potential for sustainability. The close collaboration with national and local government was seen as a strong signal for integration. To further increase sustainability, some respondents mentioned the need for follow-up and continued support (mentoring/supportive supervision), especially for lower-level facilities. Respondents from pre-service education institutions had differing views on the sustainability of the programme inputs. One principal mentioned they are considering incorporating the training into their academic plans/curriculum next year – which would ensure the sustainability of the inputs received so far. In another school, it seemed that although the programme was being implemented by its staff members, it had not permeated to the school's leadership - the school's principal having little awareness of the programme status at the time of the interview.

Global level: According to a global stakeholder, expectations of institutionalised, system-wide changes due to the programme were likely too high at the beginning. However, *"the programme did plant seeds of change. There are indications from MoHs and MAs that things will continue to progress based on 50KHB inputs".* [Global stakeholder].

3.4 Reach

Programme beneficiaries perceived that 50KHB reached all relevant stakeholders and was successful at reaching a high level of engagement (interest, motivation, participation). Figure 3.4 presents key stakeholders identified by informants in each country.

Figure 3.4: Key stakeholders identified by evaluation interviewees, by country



In Ethiopia, although engagement with the programme was generally strong, results show that medical staff (especially obstetrician residents in hospitals) did not fully understand the programme and therefore did not support it. The Ethiopian professional association for paediatricians was more involved in the programme than the association for obstetricians/gynaecologists. Their lack of orientation to the programme led to some resistance and even opposition when midwives proposed changes to protocols and practices based on what they learned in the HMS and HBS modules.

In terms of collaborations, some of the trainings were co-financed by UNFPA and AMREF, which partially compensated the MA's budget constraints to roll out the cascade trainings. According to EMwA staff, the MoH and organisations such as Pathfinder have adopted the HMS and HBS modules, and have integrated these in other programmes.

In Rwanda, additional stakeholders benefitted from the training in some districts, for example: mental health professionals, a community health worker leader, auxiliary nurses, a data manager, social workers working at the reception, laboratory in-charge. These professionals were included in the 50KHB trainings as they expressed interest in understanding the 'whole case' rather than only the part they played, or

facility in-charges wanting all their staff (including receptionists) trained to build stronger teams and ensure everyone recognises obstetric emergencies:

> *"As well as nurses and midwives, they have also trained the auxiliary nurses. They are not permitted to attend a delivery on their own, but they do assist. The whole team needed to be trained if quality of care was to be improved. Everyone in a white coat is part of the team".*
> [In-charge, urban health centre, Rwanda]

> *"Two social workers also attended the training. It's good for them to be able to recognise emergencies because they work at reception – they can recognise the danger signs and call for help more quickly in an emergency"*
> [In-charge, urban health centre, Rwanda]

When asked what could have further improved engagement of stakeholders, respondents mentioned the following:

- A closer follow up of champions after the training (mentoring/supportive supervision). *"The supportive supervision visits have kept those implementation sites engaged. But there are only 52 sites receiving supportive supervision. We don't follow the others closely, and we don't know how engaged they are or whether the training has had any impact"* [Staff member, MA, Rwanda];
- Stronger collaborations with other similar programmes in Rwanda (i.e. ROMP/RCPCH);
- Engagement with heads of departments and leadership of teaching institutions to support further internal buy-in and integration of content within curricula; *"When people engage with and understand this programme, they embrace the concept, and advocate for it. If we keep them engaged, they will be good advocates for the programme in the future. If not, 'the tree dies from above'."* [Head of Department, urban educational institution, Rwanda]
- Including lab technicians in the training, as they are responsible for supervising students in the skills lab and will need to advise students on use of equipment;
- Making the French language versions of the HMS/HBS modules available to 50KHB beneficiaries to ensure all health workers can benefit equally;
- Better integration of the programme into the national coordinating mechanism to ensure better synergies with other partners doing similar work in Rwanda, and avoid overlap in efforts.

In Tanzania, in some implementation sites, other facility staff were included in training sessions as well, such as lab technicians, pharmacists and community health workers. Some of the trainings were done in collaboration with the Boresha Afya project (USAID), and TAMA also received support from the Canadian Association of Midwives present in Tanzania. Other organisations have expressed interest in collaborating with TAMA in organising trainings in future, such as GIZ and the University of Dodoma. When asked what could have further improved engagement of stakeholders, respondents mentioned the idea of opening up the training to other professionals such as pharmacists and lab technicians to increase everyone's engagement to support maternal and newborn health.

3.5 Fidelity

3.5.1 Delivery of the programme as intended

This aspect of fidelity was mostly assessed using the programme's monitoring data for the logframe output indicators (see Figure 2.1 in Section 2.4). Below, these indicators are divided into three thematic areas: training, LDHF practice sessions and supportive supervision.

Training

The logframe indicators related to the number of individuals trained under the programme. Therefore, a person trained in one of the five HMS and HBS modules is counted once, as is a person trained in all five modules. Looking at the numbers of individuals trained, there were about 3,000 in Ethiopia, 6,500 in Rwanda and 2,200 in Tanzania (Table 3.12). This equates to about half the target in Ethiopia and Tanzania, and 83% of the target in Rwanda.

However, these numbers mask some other important results which were not captured by the logframe indicators but were captured in the monitoring tools. For example, it is clear that EMwA opted to train each person in more modules: an average of 3.8 modules per trainee, i.e. a total of over 12,500 'training episodes'. Therefore, although fewer individuals were trained in Ethiopia, the average trainee received training in four modules. In Rwanda and Tanzania, the average trainee received training in two modules. In Rwanda, there was a stronger focus on the master trainer level: of the total number of individuals trained, 21% were trained as master trainers (compared with 10% in Ethiopia and 11% in Tanzania).

Table 3.12: Output indicators relating to training

	Ethiopia		Rwanda		Tanzania	
	Target	**Actual**	**Target**	**Actual**	**Target**	**Actual**
1.1. Number of HMS and HBS master trainer facilitators	24	24	15	27	60	52
1.2. Number of HMS and HBS master trainers	200	332	1,400	1,409	240	237
3.1. Number of HMS and HBS champions trained	6,700	2,951	6,585	5,190	4,261	1,911
Total individuals trained	6,924	3,307	8,000	6,626	4,561	2,200
% of target met	-	48%	-	83%	-	48%
Total number of training episodes*	-	12,640	-	11,638	-	4,246
Mean number of modules per individual trained	-	3.8	-	1.8	-	1.9

* A training episode is the delivery of a single HMS or HBS module to one health worker

Data source: training register (programme monitoring tool)

Figures 3.5 to 3.7 reveal other interesting variations in the approach taken in the three countries. In **Tanzania**, there was more focus on the two HMS modules than on the three HBS modules. At the Master Trainer and Champion levels, **Ethiopia** also focused strongly on the two HMS modules, but gave equal attention to the Helping Babies Breathe (HBB2.0) module from the HBS suite. At the Master Trainer level, **Rwanda** focused more on the HBS modules, and at the Champion level Rwanda gave more attention to the BABC module from the HMS suite, and to the HBB2.0 and ECEB modules from the HBS suite.

Figure 3.5: Master trainer facilitators trained in each module, by country

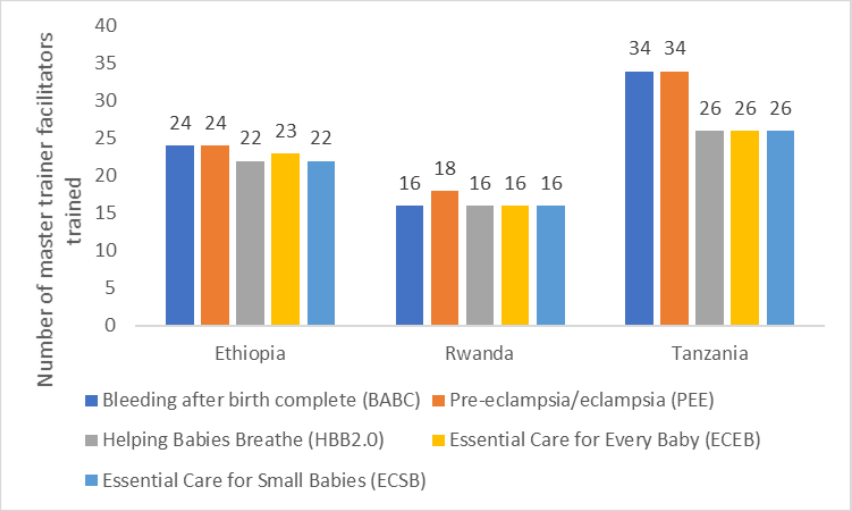


Figure 3.6: Master trainers trained in each module, by country

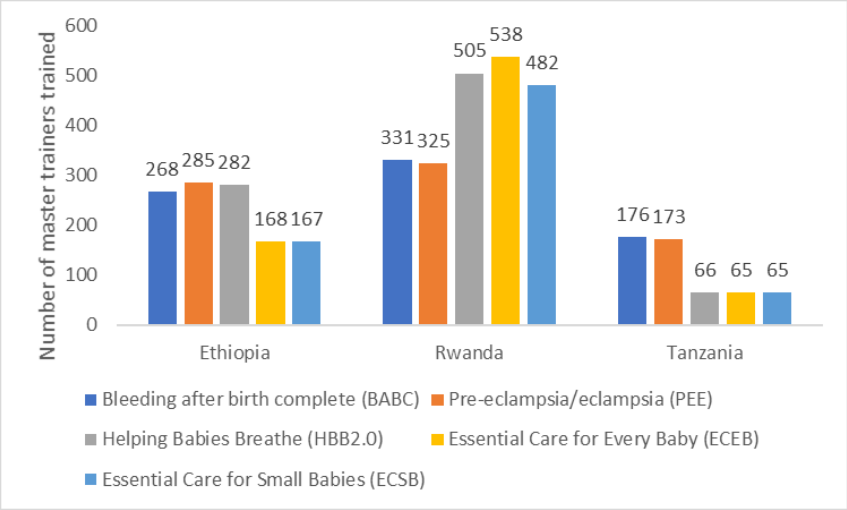
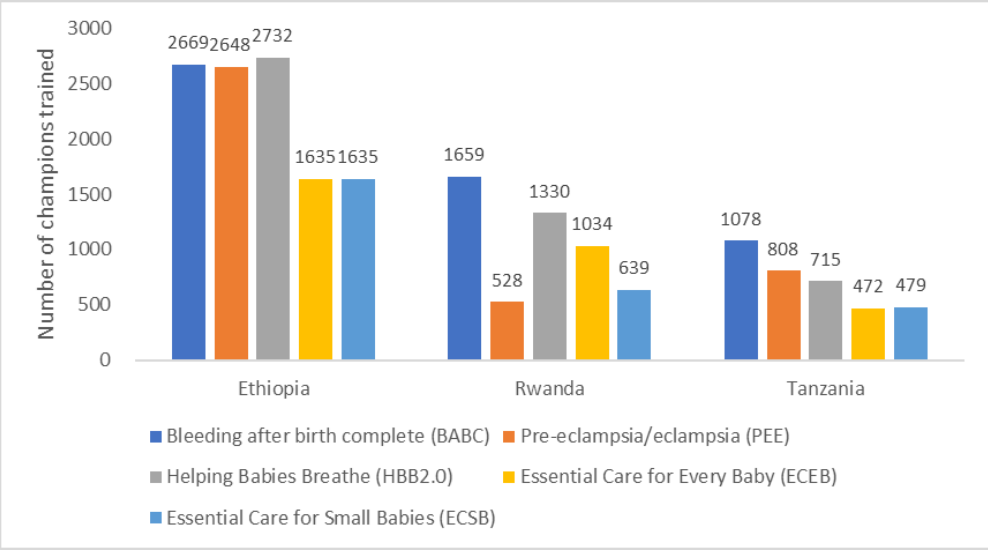


Figure 3.7: Champions trained in each module, by country



Data source for Figures 3.5-3.7: training register (programme monitoring tool)

The numbers in the above table and charts represent those who passed the training, not the number trained. However, because all three countries allowed trainees to re-take the assessments if they did not pass at the first attempt, these numbers are virtually identical to the total numbers trained. The logframe included an indicator which aimed to monitor the quality of the training by recording the percentage of trainees who passed the training. However, because the MAs decided to allow resits, this figure was close to 100% in all three countries so is not shown in this report.

The qualitative evaluation interviews explored the reasons for some of the results shown above:

- *Ethiopia*: Training targets were reached in terms of training in-service champions, but late distribution of training equipment and the closure of several educational institutions due to security issues in Oromia and Amhara regions stalled the pre-service training.
- *Rwanda:* The targets were set without sufficient consideration of what was feasible within the budget, but the Rwanda Association of Midwives (RAM) worked hard to reach as many champions as possible. The original target for the number of master trainers was much lower than 1,400, but it was increased part-way through the programme in response to additional demand from in-charges at implementation sites, who wanted more on-site master trainers. The evaluation interviews also found that some master trainers were delivering the training using the LDHF model, i.e. they were delivering training in short, regular sessions rather than spending a full day on a module. Such LDHF training was not systematically counted in the training register, so it is likely that the actual number of training episodes was higher than shown in Table 3.12.
- *Tanzania:* The relatively small targets in Tanzania reflected the challenges relating to the three implementation regions being relatively small but geographically distant from Dar es Salaam and from each other. Training took place in all 3 regions for pre-service and in-service champions, but delays in funding disbursement slowed the programme initially, and TAMA found it difficult to catch up in the remaining time.

Low-dose, high-frequency (LDHF) practice sessions

Under the programme, the MAs were expected to appoint a 50KHB practice coordinator at every implementation site. These were usually Master Trainers who were charged with cascading the training to their colleagues (50KHB Champions) and organising LDHF practice sessions to consolidate the Champion training. Both Rwanda and Tanzania achieved this at every site: Rwanda's result of 95% for output indicator 1.3 (Table 3.13) was due to two supportive supervision visits taking place after a practice coordinator had left their post and before a new one was appointed. No supportive supervision tools were completed in Ethiopia (see below), and therefore this data does not feature in Table 3.13. However, anecdotal evidence from the evaluation interviews indicated that Ethiopia also appointed a practice coordinator at every site.

To deliver the on-site training and LDHF practice sessions, the practice coordinators must have access to all relevant training and service equipment. Output indicators 2.1 and 2.2. in Table 3.13 show that very few sites had all the necessary training equipment: none of the Tanzanian visits found the full set of training equipment on site, and just 7% of the Rwandan visits found the full set. Service equipment was more readily available: 94% of supportive supervision visits in Rwanda and 64% in Tanzania found the full set. In Ethiopia, anecdotal evidence from the evaluation interviews indicated that the training and service materials were distributed to the implementation sites, but in some cases this did not happen until towards the end of the implementation period, which delayed the start of this element of the programme.

Table 3.13 also shows that it was not uncommon for scheduled on-site training and LDHF practice sessions to be cancelled. Sometimes this was due to the training equipment being inaccessible (e.g. locked in a cupboard with the keyholder off-site), but mostly it was for other reasons. The evaluation interviews indicated that these 'other reasons' mainly related to heavy workloads leading to the practice coordinator and/or the champions being unable to take time out of their working day to attend.

Table 3.13: Output indicators relating to LDHF practice sessions (supportive supervision sites only)

	Rwanda		Tanzania	
Number of sites at which data collected	42		21	
Number of supportive supervision visits	125		13	
Indicator	**Target**	**Actual**	**Target**	**Actual**
1.3. % of supportive supervision visits which found at least one practice coordinator based on site	100	95	100	100
2.1. % of supportive supervision visits which found all 50KHB training equipment available in the training/ practice area*	100	7	100	0
2.2. % of supportive supervision visits which found all 50KHB service equipment available in the labour ward**	100	94	100	64
2.3. Number of supportive supervision visits which found that at least one 50KHB training session was cancelled because training resources were not accessible	0	8	0	1
Number of supportive supervision visits which found that at least one 50KHB training session was cancelled for another reason	0	28	0	4
2.4. Number of supportive supervision visits which found that at least one 50KHB supervised practice session was cancelled because training resources were not accessible	0	10	0	1
Number of supportive supervision visits which found that at least one 50KHB supervised practice session was cancelled for another reason	0	21	0	3

* Training equipment = flip charts, provider guides and posters for all 5 modules, simulator mannequins, newborn bag and mask, nifty feeding cup, penguin newborn suction, CarePlus wrap, non-pneumatic anti-shock garment, thermometer, blood pressure cuff, stethoscope for checking blood pressure
** Service equipment = newborn bag and mask, penguin newborn suction, thermometer, blood pressure cuff, stethoscope for checking blood pressure
Data source: Supportive supervision tool

The programme monitoring system attempted to monitor the amount of LDHF practice which occurred at implementation sites, and the resultant data are shown in Table 3.14. The targets were set per quarter, but the actual figures are for the whole implementation period. It is not feasible to show accurate 'actual' figures on a quarterly basis because different sites had their training at different times and the register does not allow us to specify when it would have been feasible to expect each site to commence its LDHF practice sessions.

The available data indicate that none of the three countries achieved their targets for the number of supervised practice sessions. Ethiopia recorded a relatively large number of sessions, whereas the shortfall was particularly marked in Tanzania. The average number of champions attending each session was, however, high in Tanzania and low in Ethiopia. In Ethiopia and Rwanda, there were many more unsupervised sessions than supervised ones. The evaluation interviews found that unsupervised practice sessions can be difficult to arrange because the training equipment has to be locked away for security reasons, and therefore is not always accessible to the champions. During several of the evaluation visits, the evaluators asked to see the equipment, and in most cases the request was granted. However, at some health facilities it took a long time to locate the key-holder, and on a small number of occasions it was not possible at all.

Training equipment, district hospital, Tanzania. Credit: Leah Bohle.

It should be noted that there were significant practical challenges associated with monitoring the number of practice sessions. The system required each individual site to keep an accurate record and to transmit the record regularly to the MA. The evaluation interviews highlighted that this was not always done due to heavy workloads and the *ad hoc* nature of the sessions, so it is likely that the data in Table 3.14 are a significant underestimate of the amount of practice conducted under the programme.

Table 3.14: Attendance at LDHF practice sessions

	Ethiopia		Rwanda		Tanzania	
	Target (per quarter)	**Actual (in total)**	**Target (per quarter)**	**Actual (in total)**	**Target (per quarter)**	**Actual (in total)**
4.1. Number of supervised practice sessions recorded	1,260	505	1,734	276	2,256	50
4.2. Average number of champions attending a supervised practice session	NA	2	NA	7	NA	10
4.3. Number of unsupervised practice sessions recorded	1,260	2,387	1,734	607	2,256	5

Data source: practice register (programme monitoring tool)

Again, **the qualitative evaluation** interviews explored the reasons for some of the results shown above:

- *Ethiopia*: EMwA reported that all health facility implementation sites are equipped for LDHF practice sessions, but that the process of equipping them was delayed because of late distribution of equipment and materials. The security challenges mentioned earlier meant that many educational institution sites were not properly equipped under the programme.

- *Rwanda*: LDHF practice sessions are known as 'on-site trainings' in Rwanda. They are increasingly taking place at health facility sites, but have not been well implemented in schools. Delays have occurred because of late distribution of training equipment and materials, which in turn was due to poor communication at the start of the programme between the implementation team and the RBC, and to staff turnover within RAM at a crucial stage of the project. Furthermore, there was insufficient equipment to supply all implementation sites. Because there was insufficient training equipment for all implementation sites, the decision was taken to prioritise the equipping of hospitals, schools and supportive supervision sites.

Equipment stored at urban health centre, Rwanda. Credit: Andrea Nove

- *Tanzania*: As in Rwanda, LDHF sessions are taking place, but not yet across all implementation sites. Delays have occurred because of late distribution of equipment and materials and late disbursement of funds, compounded by the long distances between implementation sites.

Supportive supervision

Ideally, every implementation site would have received supportive supervision after participating in training, but the MAs did not have sufficient human or financial resources for this. Each MA therefore selected a sub-sample of health facility implementation sites to receive supportive supervision. As well as providing support to the sites, the visits were used to collect some of the monitoring data. For this reason, the MEL team requested that the MAs select a relatively small number of sites for supervision and make quarterly visits to the selected sites (rather than making single visits to a larger number of sites), so that monitoring data could be collected on an ongoing basis. Table 3.15 shows that most of the supportive supervision sites in Rwanda and Tanzania received at least one visit, whereas none of the Ethiopian sites did. The evaluation interviews indicated that EMwA did in fact conduct some supportive supervision, but because the Survey Monkey tool was not used, there is no objective record of this.

Table 3.15: Supportive supervision visits

	Ethiopia		Rwanda		Tanzania	
Indicator	**Target**	**Actual**	**Target**	**Actual**	**Target**	**Actual**
5.1. Number of health facility implementation sites having had at least one supportive supervision visit	7	0	52	42	20	13
Number of sites receiving 1 visit	-	0	-	7	-	7
Number of sites receiving 2 visits	-	0	-	6	-	6
Number of sites receiving 3 or more visits	-	0	-	29	-	1
Total number of supportive supervision visits	-	0	-	125	-	22

Data source: Supportive supervision tool

The evaluation interviews found that this aspect of the programme was not well understood at the outset, the MAs did not include it in their initial plans and there was no specific budget line for this activity within the overall MEL budget. That a relatively large number of visits was achieved in Rwanda is mainly because the distances to travel were much smaller, but even here it was necessary for money to be transferred from RAM's overhead to fund this activity.

3.5.2 Adaptations made to the original programme design

Global

According to global interviewees, some adaptations were made after year 1 of implementation once it was clear (after inputs from Novametrics and MAs) that the budget constraints meant that the target numbers of trainees would have to be reduced. Misunderstandings on budgets and whether these included the HMS/HBS equipment, had direct implications on budget availability for rolling out the cascade trainings in all three countries.

ICM was committed to building the capacity of MAs and made great efforts in this area. However, there was limited time to work on all aspects planned in the programme design and go in-depth into the findings of the MACAT assessments. Managing such a large training programme was new to all three MAs, and the need for support was greater than ICM could address with the resources available.

Ethiopia

Some adaptations were carried out in Ethiopia to better align the programme to the national context. The in-service training was reduced to five days including the week-ends, to limit the absence of health workers from their workplaces. To cope with time constraints, partners requested the programme to manage two training sessions at a time (same time, same location). This was done successfully.

The pre-service training course, planned for eight days, was divided into two parts with a resting day in between. 50KHB material distribution was integrated with other activities, such as monitoring visits, to work within the limited budget.

Rwanda

To compensate for the lack of training equipment (mainly mannequins), the master trainers at some health facilities mentioned focussing only on the theoretical content of HMS/HBS modules, and then applying these learnings to clients present at the facility. Some facilities depended also on other programmes contributing to the training as well as supplying mannequins for the practice sessions (e.g. ROMP programme, RCPCH[9]). Although longer training sessions were planned by RAM (5 days for HMS rather than 4), these were sometimes shortened because of constraints on the available time of health workers and students. For example, some pre-service education institutions took part in 5-day sessions that aimed to cover all 5 modules. This almost certainly contributed to the feeling among some champions that the pace of the training was too fast (see Section 3.2.1).

For similar reasons, some master trainers felt it necessary to deliver the training using an LDHF approach, e.g. regular 30-minute training sessions rather than a full day spent on training. Shorter training sessions

[9] The Rwanda Obstetric and Midwifery Programme (ROMP), Royal College of Pediatrics and Child Health (UK): https://www.rcpch.ac.uk/news-events/news/rcpch-global-saving-lives-building-bridges

may have impacted on the quality of the training provided, and it meant some facilities were not able to carry out pre- and post-tests, OSCEs, etc. Because of budgetary constraints, champions were sometimes trained only on the modules viewed as most important, to ensure the programme could address the most vital skills gaps.

Budget modifications were made to ensure RAM could carry out the supportive supervision component. Although this created financial challenges, these were mitigated to some extent by a welcomed new collaboration with IntraHealth and their mentorship programme. The collaboration enabled a co-funding of supportive supervision visits to facilities they had in common. Other partners included Partners in Health for some of the training, UNFPA which supported the work in education institutions especially, and TSAM (Training Support Access Model - a Canadian project).

Tanzania

At health facility level, the only adaptation mentioned was the shortening of training times and shifting of schedules that mainly took place within lower level health facilities (health centres and dispensaries) as health staff lacked time due to heavy workloads. Within education institutions, interviewees did not report any adaptations made to the 50KHB plans for their institutions.

3.5.3 50KHB programme successes (what did the programme do well)

The large majority of beneficiaries mentioned their expectations of the programme were met, and that 50KHB provided them with access to the practical skills needed to prevent the most common causes of maternal and newborn mortality and morbidity. Table 3.16 presents the main programme successes as identified by evaluation interviewees:

Table 3.16: Programme successes described by key informants

Programme successes described by key informants	Country/ies
Working closely with government with alignment to country policies and strategies	ET, RW, TZ, Global
The training content was perceived as high quality and relevant to their work/studies	ET, RW, TZ
Training modules addressed real skills gaps that save lives	ET, RW, TZ
Training all staff within a facility ensured consistency in clinical practice	RW
The practical approach used during training and LDHF sessions was motivating	ET, RW, TZ
The programme reached a wide range of health professionals (students, midwives, nurses, doctors, ambulance staff)	RW, TZ
Excellent selection of master trainers (respected by trainees)	ET, RW, TZ
Inclusion of private sector institutions was a welcome addition (usually not included in such training programmes)	ET, RW
Supported a sense of pride in midwifery and MNH care	ET, RW, TZ, Global
Increased MA visibility and esteem in country	ET, RW, TZ, Global
Strong relationships between ICM and MAs	ET, RW, TZ, Global
Increased presence of MAs in national working groups and international/ regional conferences	ET, TZ, Global

The following illustrative quotes showcase the value beneficiaries placed on their participation in the programme:

"It's good that all staff receive the same training so they are all 'singing from the same hymn sheet'. This is a big change. In the past different staff have had different training and therefore different ideas about how things should be done"
[In charge, rural health centre, Rwanda]

"We have increased our skills for example: I didn't know how to manage eclampsia but we would get cases. Now we know what to do before referring. We had a baby with difficulty breathing immediately after the training. And we managed it well. The baby is fine, we are grateful for the training"
[Nurse, rural dispensary, Tanzania]

"From this training, I have gotten the chance to build my skills – this was more than what I expected. It was focused and I feel like I can manage"
[Nursing student, urban university, Ethiopia]

"The engagement of the three governments was great and with strong ownership. The government really owned the programme. In Ethiopia, a staff member at MoH said that 50KHB was one of the 5 top priorities his department needed to report on to the Minister of Health".
[Global stakeholder]

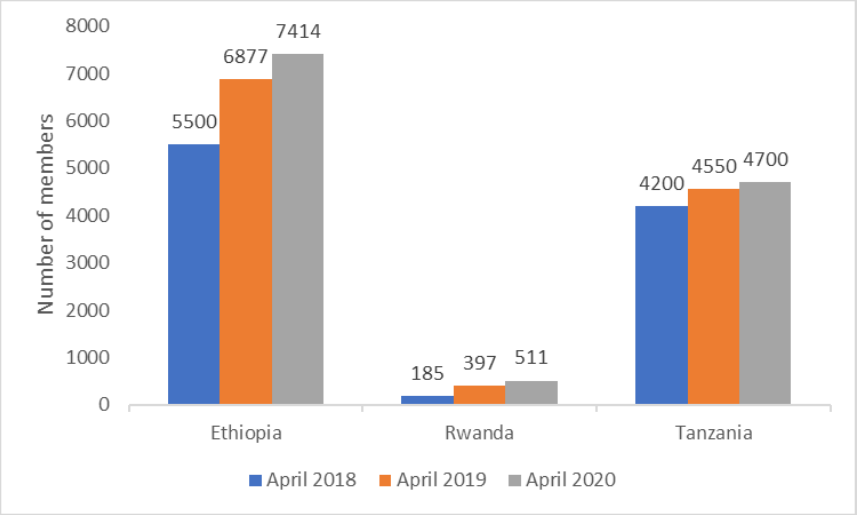
3.6 Mechanisms of impact

The MEL framework considered a number of mechanisms which could be considered to have been a link between the programme's activities and the observed changes to the impact indicators. These are discussed below under three headings: MA capacity, changes to clinical practice/provider attitudes/collaboration among health professionals, and interaction of the programme components with different beneficiary sub-groups.

3.6.1 Midwifery Association capacity

The programme provided an opportunity for the MAs to expand their membership (and thus increase their financial resources) by reaching larger numbers of potential members. Figure 3.8 illustrates that significant growth in member numbers did indeed occur over the life of the programme: in Rwanda the number almost tripled (from a very low base), in Ethiopia there was a 35% increase and in Tanzania there was a 12% increase. Although these increases cannot be attributed definitively to the programme, the evaluation interviewees reported that those attending the training were encouraged to join, and it seems likely that this promotion was responsible for at least some of the observed growth in numbers since 2018.

Figure 3.8: Number of MA members 2018-2020, by country



Source: Association membership records

Although the growth in membership is impressive, there is potential for it to grow much more. A 2017 UNFPA report[10] showed that Ethiopia had about 12,000 midwives, Rwanda had almost 8,000 midwives and nurses, and Tanzania had about 21,000 nurse-midwives. If these numbers are still approximately correct, then 62% of Ethiopia's midwives are EMwA members, 6% of Rwanda's midwives and nurses are RAM members, and 22% of Tanzania's nurse-midwives are TAMA members.

Across the whole implementation period for the programme, part of ICM's role was to provide regular and comprehensive support to the three MAs, in collaboration with other partners as appropriate. This was operationalised via a mixture of in-person visits (each lasting one week) and teleconferences. Members of the ICM programme management team made six field visits to Ethiopia (in June 2018, August 2018 (with Jhpiego), September 2018, February 2019, July 2019 and October 2019 (with Jhpiego, LDSC and LGH)), 5 visits to Rwanda (in June 2018, August 2018 (with Jhpiego and LDSC), February 2019, July 2019 and October 2019 (with Jhpiego, LDSC and LGH)) and 5 visits to Tanzania (same schedule as Rwanda).

The national MEL consultants were in contact with the MAs to introduce the monitoring system and to support its implementation. The MEL budget assumed that a monthly visit would be sufficient, but feedback from the MAs suggested that this was insufficient, because the monitoring system was demanding of their time and skills (indeed, the system was greatly simplified in early 2019 to reduce the demands it placed on the MA programme managers). The international MEL consultants also made an in-person supportive supervision visit to all three countries in June/July 2019, spending a week in each country focusing on data collection skills. In addition, representatives of the three MAs were funded under the programme to attend joint events as follows: the programme launch in Zambia in February 2018, central HBS training in Kenya in September 2018, and the ICM regional conference in Namibia in September 2019).

Between these in-person visits, the ICM team was in telephone contact with the MAs at least weekly. One of the aims of the in-country visits and telephone conversations was to agree a number of capacity-

[10] UNFPA East and Southern Africa Regional Office (2017). *Analysis of the sexual, reproductive, maternal, newborn and adolescent health workforce in East & Southern Africa*. UNFPA: Johannesburg.

building actions, and to follow up on progress against completing the actions previously agreed. Examples of these capacity-building actions include:

- Relationship building with relevant stakeholders: MAs were supported by ICM to write project descriptions and share these with partners to increase visibility of the MA and the programme
- Establish scope of work/job description documents for programme managers
- Supporting the three MAs to develop a risk management plan and a communications plan, and to implement these plans, e.g. by creating WhatsApp groups for Master Trainers and Practice Coordinators to increase the frequency and quality of communication. EMwA was supported by ICM to respond to negative Facebook feeds. Rwanda was supported to update its website
- Budget and activity plans were developed and reviewed on a regular basis, then adjusted as necessary
- Timeline and forward planning – the MAs were supported by ICM to make short-term goals to help them reach their targets and other deliverables
- Ordering of training resources – the MAs were supported by ICM to estimate need by identifying where there were gaps in availability of simulators and clinical service equipment, establish geographical areas for distribution, Excel spreadsheet documentation for resource tracking, customs clearance processes
- Ongoing status reporting – the MAs were provided with templates for financial and narrative reporting which were reviewed every quarter and feedback provided
- The MAs were enabled to improve their membership functions through activation of regional branches, development of member welcome packs, recruitment of new members through training sessions and other events and through improved/activated websites.

ICM estimates that 80-90% of the agreed capacity building actions were implemented, usually very soon after the action was agreed. Reasons for actions not being (fully) implemented related to: low financial management capacity, poor internet connectivity, lack of technical skills (e.g. in using spreadsheets), and contextual challenges such as difficulty in obtaining official approval for the action.

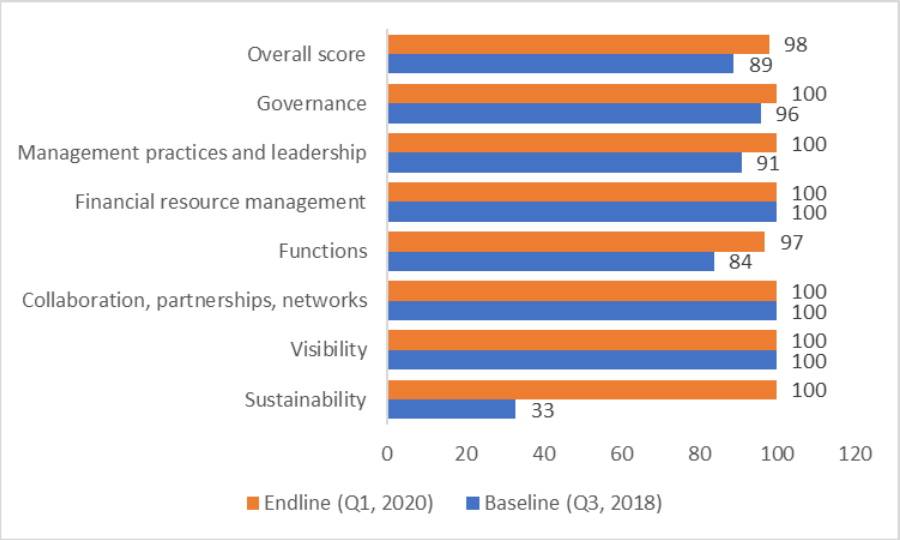
ICM supported the three MAs to measure their capacity using the MACAT tool at baseline (Q3, 2018) and at endline (Q1, 2020). The MACAT measures capacity across 7 domains: (1) governance: board, vision and mission, goals and strategies and legal status, (2) management practices and leadership: administrative policies and procedures, infrastructure and information systems, authority and accountability, human resources, (3) financial resource management: accounting, budgeting and financial information, (4) functions: membership services, advancing professional practice, quality control for care, communication, advocacy, service delivery, (5) collaboration, partnerships and networks with women, government, other NGOs, donors, the private sector, (6) visibility, including media relations and (7) sustainability.

ICM is currently developing a new version of the MACAT tool, because it is felt to have two major limitations: (1) it does not cover all relevant aspects of MA capacity, and (2) its reliance on binary 'yes/no' responses means that it does not always capture the more nuanced aspects of changes in capacity. The results below should be interpreted with these limitations in mind: they show impressive improvements overall, but mask some of the capacity building needs which still remain within the three MAs. In particular, during the evaluation interviews, the MAs highlighted the need for improved skills in financial management, applying for funding, and monitoring data collection/management/analysis.

Ethiopia

Figure 3.9 shows that EMwA's capacity was very high at baseline, except in the domain of sustainability. Scores in six of the seven domains (including sustainability) stood at 100% at endline, the only exception being the functions domain, where a few points were lost under 'membership services'.

Figure 3.9: MACAT domain scores: EMwA

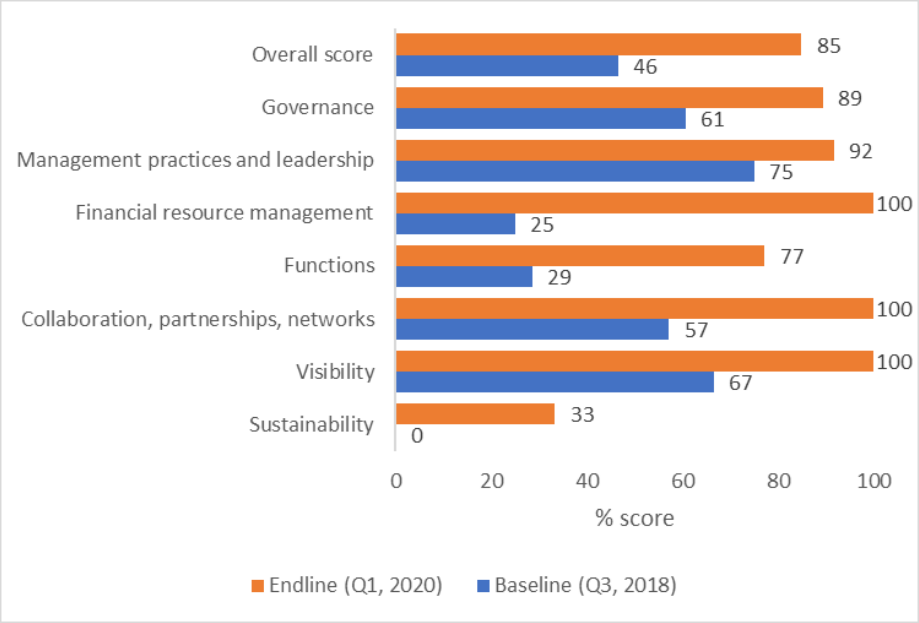


The evaluation interviews found that EMwA developed new national and international partnerships as a result of the programme. For instance, 50KHB provided them with the opportunity of working with a large number of universities, which was seen to open doors for future collaborations. In terms of skills, the association has gained additional experience and skills in project management, and coordinating large scale trainings in a cascade approach. Stakeholders perceived an increase in the visibility of EMwA and other stakeholders' trust in the organisation. 50KHB contributed significantly to EMwA's capacity to fulfil its mandate to build the capacity of midwives.

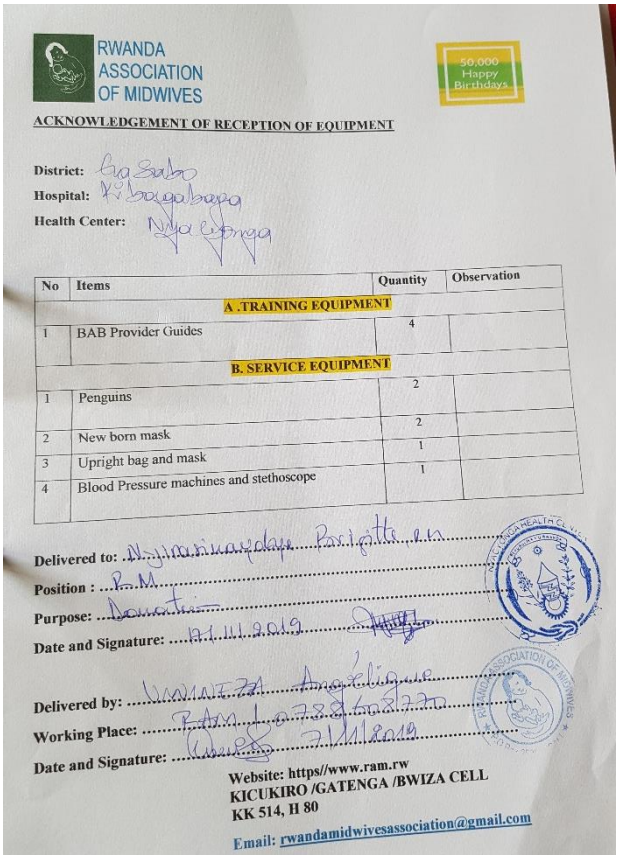
Rwanda

Figure 3.10 shows that, over the course of the programme, RAM's capacity increased across all 7 domains of the MACAT, such that the overall score almost doubled from 46% to 85% and RAM achieved the maximum score in 3 of the 7 domains. The most striking improvement was in financial resource management, followed by functions. The only domain still showing a weak score at endline was sustainability.

Figure 3.10: MACAT domain scores: RAM



RAM's status greatly increased during the programme implementation period with RAM now being a more visible actor at government level, and among health professionals. A master trainer concluded that "*RAM actions are shining"* as they have reached many new stakeholders with 50KHB. A staff member of a UN organisation in Rwanda mentioned he observed the efficiency and commitment of RAM programme managers: *"Because they are dedicated staff, they have fewer conflicting demands on their time and they can make things happen"*. RAM leadership mentioned the programme has given them the opportunity of improving their project management skills, especially in relation to resource distribution: *"At first we struggled to work out how best to transport the equipment to the implementation sites. Midwives are leading the programme: We are supervising ourselves, setting our targets and objectives on our own."* Other benefits included higher esteem of the midwifery profession among other health workers, to the extent that there had been a noticeable increase in the number of nurses applying to join the association. The expansion of RAM's professional network was also mentioned by the Association. In particular, the development of a stronger relationship with the MoH, which has led to the increase of RAM's visibility and esteem at government level.


RWANDA ASSOCIATION OF MIDWIVES

50,000 Happy Birthdays

ACKNOWLEDGEMENT OF RECEPTION OF EQUIPMENT

District:

Hospital:

Health Center:

No	Items	Quantity	Observation
	A .TRAINING EQUIPMENT		
1	BAB Provider Guides	4	
	B. SERVICE EQUIPMENT		
1	Penguins	2	
2	New born mask	2	
3	Upright bag and mask	1	
4	Blood Pressure machines and stethoscope	1	

Delivered to:

Position :

Purpose:

Date and Signature:

Delivered by:

Working Place:

Date and Signature:

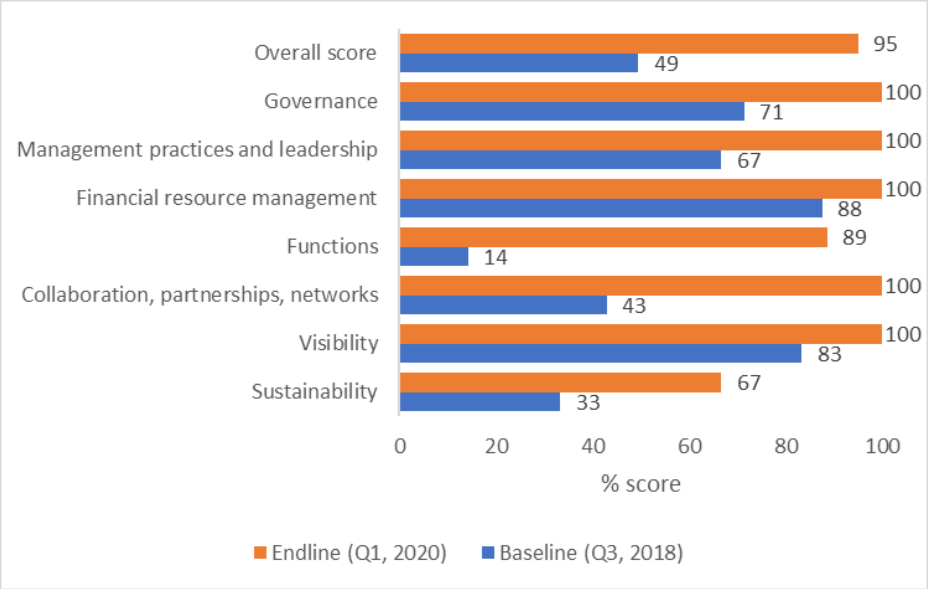
Website: https//www.ram.rw
KICUKIRO /GATENGA /BWIZA CELL
KK 514, H 80
Email: rwandamidwivesassociation@gmail.com

Equipment tracking form, RAM office. Credit: Andrea Nove.

Tanzania

Figure 3.11 shows that, over the course of the programme, TAMA's scores also increased across all domains, such that the overall score almost doubled from 49% to 95% and a perfect score was achieved in 5 of the 7 domains. The largest increase was observed for the functions domain, followed by collaboration, partnerships and networks. The weakest domain was sustainability, but even here the score was good at 67%.

Figure 3.11: MACAT domain scores: TAMA



TAMA's visibility and esteem grew during the course of the 50KHB programme. TAMA is very much a favoured partner of national level and local level government, exemplified by their inclusion in a range of high-level meetings and technical working groups and being approached to contribute to a recent funding proposal. During the course of the programme, new chapters of TAMA opened up at district level. A staff member of a UN organisation perceived TAMA's level of policy engagement as particularly positive, and stated that they should strive to continue after 50KHB. In terms of financial management skills, several national level partners stated that TAMA had become more proficient at managing funds during the implementation period. TAMA's skills in managing the equipment import, and distribution to regions was also gained through this programme. A staff member of the Tanzanian government saluted TAMA's efforts in managing such a large programme, which is not typical or usually done by professional associations. TAMA was also perceived as being *"one of the strong associations in the health sector"* in Tanzania, by a stakeholder within the Ministry of Health. The programme also brought MNH issues to the fore, and highlighted at government level the need for skills-based training. The 50KHB programme also offered greater visibility of TAMA's work and its capacity among health professionals and external partners/donors.

3.6.2 Changes to clinical practice, provider attitudes (including RMC) and collaboration among health professionals

The programme's monitoring system aimed to collect data for a number of indicators which measure aspects of quality of clinical care (Tables 3.17 and 3.18). As described in Section 3.1, data from the national HMIS were obtained for all 50KHB implementation sites in Ethiopia and Tanzania. In Rwanda, the

programme's internal monitoring tools were used, and it was possible to conduct a time trend analysis for 27 sites. Unfortunately, the Ethiopian HMIS did not include any data for the programme's outcome indicators, and the supportive supervision tool was not used either, so there are no data for Ethiopia in this section.

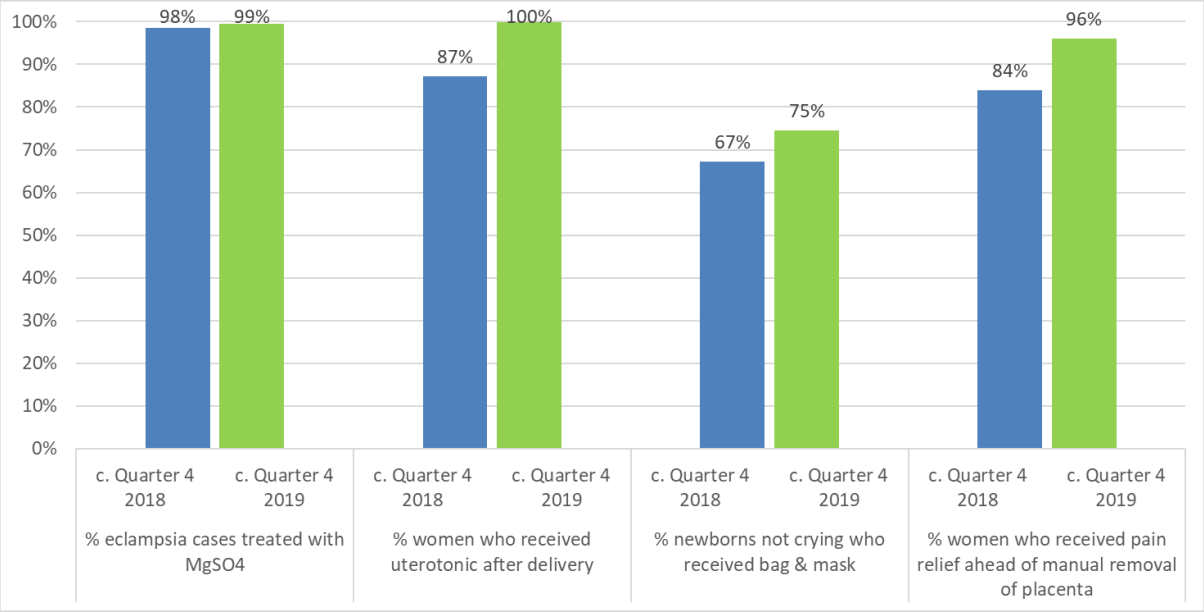
The results indicate that aspects of quality of clinical care improved over the life of the programme. In Rwanda, the baseline results for these quality of care indicators were generally high (Table 3.17), but all showed improvement over the life of the programme (Figure 3.12). The improvements were greatest for the administration of uterotonics and for pharmacological pain relief prior to manual removal of placenta (MROP). It is also notable that incidence of MROP decreased between baseline and endline, perhaps because of the increased administration of uterotonics.

Table 3.17: Outcome indicators: supportive supervision tool data for 27 health facility implementation sites in Rwanda

Indicator	Baseline*	Endline*
2.1. % of cases of eclampsia treated with $MgSO_4$	189 / 192 = **98.4%**	168/169 = **99.4%**
2.2. % of women giving birth who received a uterotonic immediately after delivery	11559 / 13252 = **87.2%**	14997 / 15004 = **99.9%**
2.3. % of newborns not crying immediately after birth who received bag and mask ventilation	452 / 672 = **67.3%**	524 / 703 = **74.5%**
2.4. % of women whose placenta was manually removed who received pharmacological pain relief or sedation in advance of the procedure	99 / 118 = **83.9%**	73 / 76 = **96.1%**

* The baseline results are from a 3-month period between June 2018 and January 2019 and the endline results from a 3-month period between September 2019 and March 2020. The supervision visits took place at different times, hence the variation in the timing of the 3-month observation periods.
Data source: supportive supervision tool devised specifically for the programme

Figure 3.12: Outcome indicators: supportive supervision tool data for 27 health facility implementation sites in Rwanda



The baseline results are from a 3-month period between June 2018 and January 2019 and the endline results from a 3-month period between September 2019 and March 2020. The supervision visits took place at different times, hence the variation in the timing of the 3-month observation periods.
Data source: supportive supervision tool devised specifically for the programme

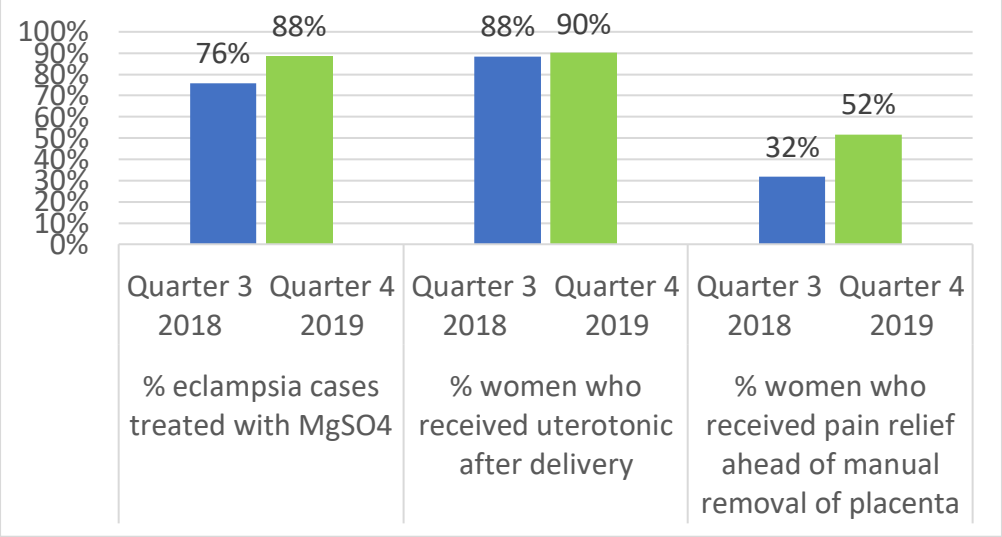
Likewise, in Tanzania the baseline figures for administration of magnesium sulphate and uterotonics were already high, but the endline figures were even higher (Table 3.18 and Figure 3.13). Perhaps the most striking improvement, however, was in the use of pharmacological pain relief for MROP, which increased from 32% to 52%. There was also a much lower incidence of MROP at endline, which is perhaps an indication of better delivery care leading to less need for this intervention.

Table 3.18: Outcome indicators: HMIS data for 369* health facility implementation sites in Tanzania

Indicator (number of facilities included in the figures)	Baseline (June-September 2018)	Endline (October-December 2019)
2.1. % of cases of eclampsia treated with $MgSO_4$ (n=362)	85 / 112 = **76%**	84 / 95 = **88%**
2.2. % of women giving birth who received a uterotonic immediately after delivery (n=344)	35,713 / 40,425 = **88%**	37,171 / 41,210 = **90%**
2.3. % of newborns not crying immediately after birth who received bag and mask ventilation	no data	no data
2.4. % of women whose placenta was manually removed who received pharmacological pain relief or sedation in advance of the procedure (n=365)	20 / 63 = **32%**	15 / 29 = **52%**

* Data for a few facilities were excluded due to poor quality, e.g. if a facility reported more women receiving a uterotonic than giving birth then it was excluded from the results for indicator 2.1. Data source: HMIS

Figure 3.13: Outcome indicators: HMIS data for 369* health facility implementation sites in Tanzania



* Data for a few facilities were excluded due to poor quality, e.g. if a facility reported more women receiving a uterotonic than giving birth then it was excluded from the results for indicator 2.1. Data source: HMIS

The concept of respectful maternity care (RMC) was measured at supportive supervision sites using an anonymous client questionnaire. Only Rwanda submitted sufficient completed forms for quantitative analysis. Table 3.19 shows how the scores evolved over time, and highlights in green areas which showed an improvement over time and in red areas which showed a deterioration over time. It should be noted that many of these changes are very small and therefore almost certainly not reflective of actual changes in RMC. It should also be noted that the supportive supervision visits only commenced in the second quarter of 2019, which does not properly represent a baseline measurement.

Respondents were shown a series of statements, and asked to state the extent to which they agreed or disagreed with each on a scale of 1 to 5, where 5 indicates strong agreement and 1 indicates strong disagreement. The maximum average score for each statement was therefore 5, and the minimum was 1. Overall, there was a very slight improvement in the scores over the year April 2019 to March 2020, but

the scores were high even in the earliest time period so there was relatively little scope for improvement. Across the 23 statements, 17 showed an improvement over time and 6 a deterioration. The largest improvements were observed for the following statements: 'Staff have made sure that other patients could not listen to private conversations', 'Staff made sure that my baby and I had at least one hour of uninterrupted skin-to-skin contact immediately after the birth', 'I was told that I would need an injection immediately after the birth to help avoid too much bleeding', 'Staff made sure that I was covered appropriately during examinations, labour and childbirth', and 'Staff have come quickly when I called'.

Table 3.19: Average respectful maternity care scores over time, supportive supervision sites in Rwanda

	Q2 2019	Q3 2019	Q4 2019 - Q1 2020*
Number of sites visited	12	21	20
Number of women completing an RMC assessment	50	79	77
Information and consent			
A1: Staff have given clear explanations of what they were doing	4.42	4.57	4.53
A2: I have felt comfortable to ask questions if I wanted to know what was happening	4.66	4.62	4.58
A3: My questions have been answered in a way that I could understand	4.57	4.56	4.60
A4: I have been asked for my permission or consent before all treatment and procedures	4.32	4.30	4.38
A5: My choices and preferences have been respected	4.62	4.58	4.41
A6: If I did not want the treatment that was suggested, I felt able to refuse it	4.46	4.20	4.32
A7: A companion of my choice has been with me whenever I wanted	4.39	4.31	4.52
A8: I feel that I will be able to go home with my baby as soon as we are ready	4.58	4.68	4.63
Care and support			
B1: I was well supported during labour and childbirth	4.78	4.80	4.70
B2: Staff explained clearly why interventions such as vacuum, forceps or caesarean section were necessary	4.74	4.41	4.35
B3: I was told that I would need an injection immediately after the birth to help avoid too much bleeding	4.06	4.05	4.40
B4: Staff made sure that my baby and I had at least one hour of uninterrupted skin-to-skin contact immediately after the birth	4.09	4.39	4.47
B5: Staff explained what special care was necessary for my newborn-baby	4.07	4.26	4.15
B6: I have been encouraged to breastfeed	4.57	4.49	4.59
B7: I have been well supported to breastfeed	4.30	4.38	4.40
B8: When I go home, I will have a clear understanding of how to care for my baby	4.41	4.57	4.49
B9: When I go home, I will have a clear understanding of the schedule of post-natal care visits	4.34	4.11	4.38
Privacy			
C1: Staff made sure that I was covered appropriately during examinations, labour and childbirth	4.40	4.73	4.75
C2: Curtains, screens or closed doors have been used to ensure privacy when I wanted it	4.66	4.70	4.71
C3: Staff have made sure that other patients could not listen to private conversations	4.26	4.73	4.65
Approachability and responsiveness			
D1: I have felt able to call a nurse or midwife whenever I needed to	4.68	4.74	4.49
D2: Staff have come quickly when I called	4.49	4.72	4.74
D3: I was never left alone during labour	4.64	4.67	4.66
Average score for all 4 sections	**4.46**	**4.50**	**4.52**

* Only 5 supportive supervision visits took place in Q1 of 2020, and there were not enough observations for separate analysis, so these two quarters were combined into a single category.
Source: RMC assessment questionnaires (programme monitoring tool)

The RMC tool included a fifth section which asked about staff behaviour, but the scoring system for this section was different from the other sections, and it was poorly understood by the assessors so the data are not shown in Table 3.19 due to uncertainty about their quality.

The qualitative evaluation interviews indicated that all three countries have made progress in RMC at 50KHB implementation sites. It was however generally perceived that this area could still be improved and will require time (i.e. ensuring privacy, adequate temperature in delivery rooms, etc). In Tanzania, the evaluators observed an example of disrespectful care while they were visiting a health facility.

Many programme beneficiaries confirmed they had integrated RMC into their daily practice. The perception was that patient-provider interaction and trust had improved because of the increased self-confidence of health workers. The most often cited changes were:

- Listening and answering of patients' questions (RW, TZ);
- Informed consent prior to any procedure (RW, TZ);
- Consideration of patients' individual needs and circumstances (RW, TZ);
- Better respect for and care of newborns (i.e. through establishment of newborn corners) (ET).

A nurse-midwife in Tanzania commented the change she noticed in the area of RMC: *"We used to deny relatives to accompany mothers in labour. But now we allow it. I believe they see us as changed people. We are more attentive to our patients".* [Nurse-midwife, urban hospital, Tanzania]

The infrastructure and functioning of maternity wards did seem to be an important barrier to RMC in many locations. Such limitations include inadequate labour and delivery rooms, the lack of beds, equipment, supplies, as well as overcrowded wards, especially in referral facilities.

In all three countries, interviewees reported that their relationships with their colleagues had also been positively affected by their participation in the programme. Stakeholders saw an increase in confidence of health workers trained by 50KHB, as well as better teamwork and inter-professional interaction between midwives, nurses, doctors and other health workers occupation groups.

> *"Confidence is greatly increased. There is more and better communication and collaboration between doctors, nurses and midwives and between different departments (e.g. maternity and neonatology). This is because they all received the same training, so can easily exchange the relevant information and understand what each other should be doing".*
> [Director, rural hospital, Rwanda]

> *"There were two cases of eclampsia soon after the PEE training, so we were happy to know how to stabilise the patient with the loading dose before transferring her to the hospital. Before the training we would not have attempted to treat her at all – just put her in an ambulance"*
> [Midwife/Practice coordinator, urban health centre, Rwanda].

> *"I feel more confident and prepared. I know more but I need more practice. My thinking is structured and the posters have guided my thinking – it gave us the opportunity to be structured"*
> [Nursing student, urban university, Ethiopia]

An increase in trust and delegation of work among professionals were mentioned by many respondents. Nurses working in a rural health centre in Rwanda mentioned that their colleagues (midwives and doctors) would now call on them to do neonatal resuscitation, as they now had the confidence that nurses could do it. A midwife in Tanzania also saw an increase in trust and collegiality among different

cadres of professionals: *"It [50KHB programme] has helped to build collegiality among providers; good relationships. It has helped even ward attendants to be confident and work with midwives"*. [Labour ward in charge/midwife, urban hospital, Tanzania]

Increased respect among different occupation groups was also highlighted in Rwanda and Tanzania:

> "*Before the training, midwives perceived student nurses as their juniors, but after being trained together, the midwives treated the students as colleagues: they asked each other questions and shared information"*
> [Midwifery student, urban education institution, Rwanda]

> *"Since the training they call me and they ask for my help. When I am at home; they call me and they say: I have a sick patient, she has eclampsia…I tell her what to do. Two times a week they call me. I like to be called because I know how to care for the mother. The doctors have more respect [for me] and I am happy to teach. For example, the doctor said I took good care of the patient and that makes me happy*"
> [Nurse-midwife/Master Trainer, rural hospital, Tanzania]

Nurse and midwives commented that the training had shifted the perception on midwifery, and that MNH was now seen as a team effort, and the responsibility of all staff:

> *"There is a better sense of teamwork between the nurses and midwives now – before the training, the nurses thought that MNH was just the responsibility of the midwives, but now they feel it is their responsibility too. All of the nurses are on rotation, but they all work in maternity at least some of the time, so they need this knowledge"*
> [Midwife, urban health centre, Rwanda]

> *"We all work together as a team on emergencies. Regardless of our cadres even if you are an attendant"*
> [Midwife, urban hospital, Tanzania]

Stakeholders also mentioned that facilities that received 50KHB training could manage cases in a better way, with implications on referrals. They either fully managed the case within their own facility, or better stabilised patients before referring them to a higher-level facility.

Table 3.20 summarises the qualitative findings for all three countries.

Table 3.20: Perceived effects of 50KHB on clinical practice, provider attitudes and collaboration

Effect	Country/ies
Increased health worker confidence in clinical skills	ET, RW, TZ
Better communication among professionals	ET, RW, TZ
Increased level of inter-professional team work (through harmonised protocols)	ET, RW, TZ
Increased trust and respect in the skills of professionals and students having taken part in training/sessions	RW, TZ
Reduced burden of MNH care on particular professionals (usually midwives and medical doctors) through increased delegation of HMS/HBS related clinical tasks to trained nurses	RW
Reduced numbers of unnecessary referrals and improved pre-referral management	ET, RW, TZ
Improved communication with clients	RW, TZ

3.6.3 Interaction of the programme components with different beneficiary sub-groups

In Ethiopia, the implementation of the programme was stronger in in-service settings than in the pre-service settings. This was mainly due to security issues in two of the programme regions. In terms of the training participants, the programme in Ethiopia seems to have struggled more than the other two countries in engaging with doctors so that they were supportive of the training. Newly-trained nurses and midwives were therefore sometimes confronted with blockages within their own facilities.

> *"In terms of content we did not have any difficulty. But after coming back to the hospital and when we started practising, there emerged conflicts with the residents. For example, their definition of retained placenta, the timing to clamp the cord, their timing for 2nd dose of pitocin etc are different from what we have been trained"*
> [Midwife, rural hospital, Ethiopia]

In Rwanda, the accessibility of the training to different occupation groups was seen as a very positive approach. Observations during the in-country visits highlighted however a better integration of the 50KHB training modules in health facilities, as compared to education institutions. Key national stakeholders though had differing views. Although those working in the education sector thought it was easier for them to set up practice corners in their skills labs, use English language training materials (as opposed to older health workers who mostly find French easier to understand), and set up regular practice sessions; other stakeholders thought the LDHF approach worked better in a clinical setting – where the approach was compatible with the 'rhythm' of a health facility, with staff only being able to spare short periods of time to practice with HMS/HBS modules. Ensuring more students gain access to the HMS/HBS modules in future is feasible, but understandably requires time for pre-service institutions to integrate new content and learning approaches to an already established curriculum.

In Tanzania also**,** the accessibility of the training to different health professional occupation groups was seen as a positive approach. With regards to the compatibility of the programme with pre-service and in-service beneficiaries, the views in Tanzania differed. However, TAMA leadership felt strongly that 50KHB would be ideal to expand among pre-service education institutions, as a means to ensure sustainability of the training and to support skills-building before health workers join the workforce.

3.7 Mediators

Mediators are intermediate processes which could explain subsequent changes in outcomes, as well as unintended pathways and consequences.

3.7.1 Training module(s) with biggest impact on beneficiaries

Beneficiaries were asked to name the most important thing they learnt in the HBS and HMS training (Table 3.21). As expected, the responses varied, and depended on the respondents' identified skills gaps. Interestingly the modules highlighted as the most challenging content to learn during the midline evaluation, are listed here as having the biggest impact on beneficiaries.

Table 3.21: Gained knowledge/skills most valued by beneficiaries

	Countries
Pre-eclampsia/eclampsia management (PEE); especially loading dose for $MgSO_4$ and use of intramuscular injections	ET, RW, TZ
Active Management of the Third Stage of Labour (AMTSL); Bleeding After Birth Complete (BABC); Postpartum haemorrhage (PPH) management; Manual removal of placenta	ET, RW, TZ
Effective communication, privacy and informed consent (RMC)	ET, RW, TZ
Essential Care for Small Babies (ESCB)	ET, RW, TZ
Helping Babies Breathe (HBB); neonatal resuscitation; 'the golden minute' rule	ET, RW, TZ
Skin-to-skin contact	ET, RW, TZ

The below illustrative quotes highlight the vital skills 50KHB beneficiaries have acquired and the effect on clinical practice and patients:

> *"AMTSL – before the training we didn't know anything about this – now we can recognise the signs of PPH and take the right decisions"*
> [Nurse, rural health centre, Rwanda]

> *"I know how to help babies with breathing difficulties. I did not know this before"*
> [Nurse-midwife, urban health centre, Tanzania].

> *"Before every procedure you are going to perform you have to inform. You have to respect the mother by informing them what is going to be done"*
> [Student nurse, rural education institution, Rwanda]

> *"Skin-to-skin. We do this with every delivery, so it impacts on every client"*
> [Nurse, urban health centre, Rwanda]

3.7.2 Views on collaboration with ICM

Across all three countries, the main strengths that were mentioned by respondents were the established partnerships between ICM, Jhpiego and the programme funders (LGH and LDSC), the in-country support provided to the MAs, and the collaborative and friendly communication. The main challenges were the limited presence of ICM in-country, and delays in the programme plans due to financial and procurement related challenges at the outset. These views were identical to perspectives shared previously during the midline evaluation, which highlights a strong partnership building during the entire 50KHB implementation period.

> *"Continuous technical assistance and clear directions, (…) providing supportive supervision and mentoring, (…) flexibility, smooth relationship and a friendly approach"*
> [Staff member, MA, Ethiopia]

> *"The support from ICM has been very valuable – regular calls with ICM staff, and technical support for an improved management of the programme"*
> [Staff member, MA, Rwanda]

> *"Without ICM we would not have had the programme. ICM helped with writing the proposal, planning, monitoring; connected us to Laerdal. Without ICM we would not have been able to do that actually"*
> [Staff member, MA, Tanzania]

At the global level, the partnership between LGH and ICM was valued, especially in terms of the commitment, transparency and quality of the work carried out by ICM staff. It was perceived, however, that more could have been done to secure further funding for the programme. However, limited staff availability at ICM was recognised as a strong limitation to seeking additional funds.

> *"Laerdal highly appreciated the ICM team and the work they did. ICM is one of Laerdal's closest partners. ICM is a global and pivotal organisation in the area of MNH. It is unique for an umbrella professional organisation to work so closely with its member organisations (national MAs)"* [Staff member, LGH]

3.7.3 View on collaboration with other 50KHB partner organisations

Across all three countries, the collaboration with partner organisations (other than MAs and ICM) was largely seen positively. LGH was perceived as an innovative partner that was very open to discussions and feedback; Jhpiego was seen as a valuable in-country partner that was collaborative and willing to share information and equipment (they also provided valuable support with managing issues with customs in all three countries); LDSC was also seen as encouraging good collaboration, communication and support (especially in the area of MEL and project management); Novametrics was seen as a strong partner to have on the programme, with supportive and quick responses to MEL needs. However, partnerships could have been even stronger with more in-country presence from 50KHB partners, to increase the level of guidance and support. It was suggested to possibly twin the implementing MAs with other international MAs (e.g. in Tanzania, TAMA worked with the Canadian MA). Finally, collaboration with the government - especially the MoH - was seen as strong in all three countries (but still with potential for further strengthening), and essential to the implementation of such a large endeavour.

3.8 Contextual factors

Respondents were asked for their views on enabling/contextual factors. This is key to understanding how to ensure quality and sustainability of the programme after 2020.

3.8.1 Enabling factors that contributed to the programme's achievements

The following list of enabling factors supportive of the programme's achievements were mentioned by respondents in all three countries. These have been categorised under the overarching themes of governance/leadership, human resources and training organisation and quality.

Table 3.22: Enabling/contextual factors identified by interviewees

	Country/ies
Governance/leadership	
Strong leadership within MA	ET, RW, TZ, Global
Strong management/administrative support within facilities/institutions	RW, TZ
Supportive supervision (from ICM to MAs and from MAs to implementation sites)	ET, RW, TZ, Global
Strong support from government (local to national level), especially MoH and alignment to national policies and strategies	ET, RW, TZ, Global
Efficient support from ICM (regular communication and support), Novametrics, Jhpiego, LDSC and LGH	ET, RW, TZ, Global
Strong commitment of the MAs to the programme and its beneficiaries	ET, RW, TZ, Global
Human resources	
Access to Continuous Professional Development ('free' CPD points) through 50KHB training	RW

	Country/ies
Low turnover rate of staff trained on 50KHB (permanent contracts, etc)	RW
Increased confidence and motivation of midwives and other health staff	ET, RW, TZ
Strong/passionate MNH advocates within institutions/facilities working with 50KHB	RW
The motivation and commitment of the 50KHB practice coordinators	ET, RW, TZ
Strong volunteer base to support programme (and compensate for limited budget)	ET, RW
Training organisation and quality	
High quality 50KHB training delivered by the MA and master trainers	RW, TZ
Scheduling of LDHF sessions at shift change time	RW
Outreach/engagement	
Engaging a wide range of stakeholders through the programme launch event	ET, RW, TZ
Clear communication to beneficiaries, "*If they understand it, they will support it*"	RW

3.8.2 Context related challenges

The main context related challenges mentioned by stakeholders were:

- The lack of staff availability to attend trainings and engage fully with the programme (ET, RW, TZ);
- The shortage of human resources at health facility level renders it difficult to organise the group practice sessions required by the LDHF approach (RW);
- Frequent staff rotations between facilities represents a challenge for midwifery practice (TZ);
- The lack of practice corners in health facilities (ET, RW, TZ);
- Lack of ownership of the programme within sub-national government (ET);
- Insufficient human resource availability and capacity within MAs, especially for MEL (ET, RW, TZ);
- Security issues limiting the programme implementation in some regions (ET);
- Poor internet connection outside the capital, thus limiting communication (ET).

3.8.3 Solutions found to overcome challenges

In Ethiopia, to benefit from additional programme coordination within EMwA, the MA worked as much as possible with Master Trainer Facilitators and Master Trainers.

In Rwanda, some implementation sites scheduled early morning practice sessions in small groups, so that the outgoing night shift and the incoming day shift could both attend. This made it possible to carry out regular LDHF sessions. However, there was some criticism from night shift workers that they were too tired to concentrate after a night shift, and perhaps some of the sessions could have taken place in the afternoon when the day shift ends and the night shift starts.

In Tanzania, 50KHB practice coordinators had to negotiate with health facility management to make practice corners available through creative means. For instance, a nurse-midwife convinced the medical officer in- charge to transform a staff 'tea room' into a space for LDHF practice sessions.

3.9 Recruitment and retention

Assessing how stakeholder engagement was carried out during the programme especially important when thinking about ensuring sustainability of 50KHB.

3.9.1 Main factors associated with ongoing engagement of national stakeholders

Respondents were asked what were the supportive factors that encourage stakeholders to engage with the programme and remain engaged across the whole life of the programme. The following aspects were mentioned:

Table 3.23: Factors associated with ongoing stakeholder engagement

	Country/ies
Good communication at all levels	ET, RW
Good collaboration between health centres and their referral hospitals	RW
Introduction of CPD credits as a motivation for engagement	RW
Good support from MA and from other partners, e.g. IntraHealth, Paediatric Association	ET, RW, TZ
Regular visits/supportive supervision of health facilities/institutions by external stakeholders (MA and others)	ET, RW, TZ
Leadership and buy-in from facility-in-charges	ET, RW
Alignment of 50KHB objectives with government and other stakeholders' agendas and programmes	ET, RW, TZ

> *"Visits from RAM made the staff take the training more seriously: the perception is that, if external visitors are coming to do it with us, it must be important"*
> [Practice coordinator, urban health centre, Rwanda]

> *"There is engagement when people see it is a real project, it is going on and they saw the equipment being distributed and people trained; they saw that we are doing something"*
> [Staff member, MA, Tanzania]

3.9.2 Reasons for stakeholder withdrawal from programme

Across all three countries, there was very little stakeholder withdrawal. Only a few factors that could reduce stakeholder engagement were mentioned:

- Staff turnover/rotation at facility level could stall engagement, for instance if a practice coordinator is transferred to another workplace (ET, RW, TZ);
- The lack of interest in MNH of some facility managers was mentioned as a risk to the programme's implementation (ET, RW);
- The lack of sufficient coordination staff within MAs to monitor and support beneficiaries may have reduced engagement (ET, TZ);
- The limited resources devoted to supportive supervision and mentorship may have prevented a fuller engagement of trained practice coordinators and champions (ET, RW, TZ).

4 Conclusions and recommendations

In this section, the conclusions are in black type, and the recommendations in blue type.

The impressive results documented in this report make it clear that the 50KHB programme has had a notable impact in all three countries, despite a number of contextual and implementation-related challenges which almost certainly limited its impact. 50KHB was an extremely ambitious programme in terms of the complexity of the intervention, the short implementation period and the wide geographical scope, which stretched the limited human and financial resources available to the MAs, ICM and Novametrics. It seems likely that future programmes could achieve even more impressive results if the resources are put in place at the outset and maintained.

Beneficiaries were extremely enthusiastic about the programme: they saw the training as being relevant and of vital importance, and felt that the emphasis on practical skills and the ongoing mentorship from the on-site master trainers set it apart from other training they had received in the past. They felt that the training had increased their clinical skills, their confidence and the level of respect for midwives and midwifery in their countries. The only resistance observed was from some obstetricians/gynaecologists in Ethiopia, whose usual practice was not aligned with the content of the 50KHB training. To avoid similar problems, future programmes should consider involving doctors' groups more closely in steering and/or implementation of the programme. This could also strengthen teamwork, especially for referral cases where collaboration between different occupation groups is important to maximise quality of care.

The training element of the programme was delivered successfully in all three countries. The targets for individuals trained were not hit in any of the three countries, but nevertheless many thousands were trained. Contributory factors to the targets not being hit included late disbursement of funding and equipment, and in some cases the targets themselves being set at an unrealistically high level. When setting targets, future programmes should take into account issues such as the locations, number and type of facilities selected as implementation sites, the number of champions that a master trainer can realistically be expected to train (especially if (s)he is responsible for more than one site), the number of health workers available to be trained at the selected sites, and whether it is better to train fewer people with more modules, or more people with fewer modules, given the context in which the programme is being implemented. Additionally, the amount of equipment needed to implement the programme fully should be calculated and distributed before programme implementation begins (e.g. during an inception phase), so that the training can commence in all locations without delays.

Two innovative elements of the programme were the LDHF practice sessions and the cascade approach to the training. Stakeholders generally held positive opinions about both of these elements: LDHF was felt to be important for consolidating the newly-acquired skills and knowledge and for building teams, and the cascade approach was thought to be cost-efficient in that it allowed more beneficiaries to be reached. The enthusiasm of the beneficiaries and the improvements to quality of care and maternal and newborn health outcomes at the implementation sites indicate that the quality of the training was high. However, there was no systematic monitoring of the quality of the training, and the monitoring of the LDHF practice sessions was almost certainly incomplete, which should be remedied in future programmes, e.g. by using digital methods of data collection and providing those involved with data collection with the necessary equipment and skills to apply the digital methods.

The LDHF practice sessions and follow-up supportive supervision elements of the programme were delivered in some places but not all. In many locations, this aspect of the work had only just commenced

at the time of the endline evaluation visit. The importance of the LDHF practice sessions was recognised, but they were difficult to implement in education institutions due to students already having full timetables, and in health facilities due to lack of training equipment and competing demands on staff time. Future programmes should consider how best to support implementation sites to find creative ways to overcome these challenges, e.g. by introducing effective systems for planning and distribution of training equipment, and sharing the equipment between sites if there is not enough for all sites to have all the equipment. Consideration should also be given to having more than one practice coordinator at each implementation site, to reduce the risk of high staff turnover adversely affecting implementation.

The importance of the supportive supervision visits was not fully appreciated by all stakeholders at the start of the programme, so the necessary human and financial resources were not put in place, and only limited supervision/mentoring was possible. Beneficiaries all emphasised the importance of this kind of follow-up after the initial training, so future programmes should make sure this element is built in from the outset. Likewise, the MEL system should be set up early, so that an accurate and reliable baseline can be ascertained and progress measured against that baseline.

The evaluation found some indications that institutionalised change is starting to occur as a result of 50KHB, e.g. consideration is being given to building the HMS and HBS modules into pre-service education curricula for nurses and midwives, some health facilities have improved the way they prepare delivery rooms so that they are ready in case an emergency occurs, there is more and better teamwork between doctors, midwives and nurses in health facilities (with some exceptions in Ethiopia, as noted above). These changes bode well for sustainability, but most stakeholders acknowledge that further investment of time and resources will be needed to build on these promising foundations, and to support the MAs to publicise and celebrate their successes.

The programme had a broad reach in terms of the number and variety of health workers who were trained, and in the effective engagement with national and sub-national stakeholders in the three countries. However, a few examples of poor coordination were found, e.g. when other programmes were doing similar work in the same locations without the knowledge of the MAs or when doctors were resistant to 50KHB champions applying their new knowledge and skills. Future programmes should consider how best to avoid this type of problem, e.g. by conducting a thorough stakeholder mapping exercise at the outset and reviewing it regularly over the life of the programme, and engaging fully with all relevant stakeholders as they are identified to ensure effective coordination and efficient use of the available resources.

The evaluation indicates that the mechanisms by which the programme maximised its impact included: (1) building the capacity of the MAs so that they became more capable and more respected by other national stakeholders, (2) improving quality of care and respectful care via high-quality training and regular supportive supervision/mentoring, and (3) good collaboration between stakeholders at global, national and sub-national levels. Other contextual enablers were perceived to be: strong leadership and support from national stakeholders, the high quality of the training content and materials, low turnover of staff at implementation sites, passionate advocates for maternal and newborn health at implementation sites, and the training providing 'free' CPD points. Future programmes should ensure that as many of these enablers as possible are in place before implementation commences.

Contextual challenges included: insufficient human resources and capacity within the MAs, staff shortages at implementation sites/lack of staff time to attend training and LDHF sessions, poor Internet

connectivity, and in Ethiopia security threats and lack of ownership of the programme at the level of regional health bureaux. The existence of these challenges should not prevent a future investment in any given country, but consideration must be given at the outset about how to ensure that enough resources are in place to address them (or at least to mitigate their effects), and their likely effects should be taken into account when planning and setting targets for the programme. Financial provision should be made for more regular country visits from project management and consultants/experts to support the national implementation teams.

This evaluation provides evidence that the 50KHB programme works when solid implementation mechanisms are in place: more Happy Birthdays happened in the places where the programme was well implemented. In these places, the programme contributed to a significant improvement in the way that SRMNAH workers are trained and supported to manage obstetric and neonatal emergencies. It thus has the potential to bring about widespread improvements to quality of care if the investment can be sustained and expanded. The impact of the programme was, however, muted somewhat by contextual challenges, insufficient human and financial resources and logistical challenges relating to the shipping and distribution of training equipment. Without these challenges, the impact would perhaps have been even greater. The 50KHB programme has allowed the MAs in the three countries to lay a solid foundation on which to build in the future, but continuing support will be required to consolidate and expand the achievements and learning from the programme so the improvements can be institutionalised and thus sustained.

Annex A: Sample details

For the sub-national data collection, two districts/zones were selected in each country: one with a predominantly urban population and one predominantly rural. In each selected district/zone, we randomly selected four evaluation sites: three health facilities (two primary and one secondary/tertiary) and one education institution.

To achieve this, the list of intervention sites in each country was stratified by region, district/zone, type of site (educational institution, primary health facility, hospital) and whether or not the site was an SS site. The process was as follows:

1. Sort the list of intervention sites in alphabetical order within district/zone. The number of (mostly) urban districts is *U* and the number of (mostly) rural districts is *R*. Use a random number generator to select a number between 1 and *U* and another number between 1 and *R* to select the two evaluation districts.
2. Within the two selected districts/zones, sort the list of sites according to type (education institution, primary health facility, hospital). The total number of education institutions is *E*, and the number of hospitals is *H*. Use a random number generator to select a number between 1 and *E* to select the education institution. Repeat for hospitals (a number between 1 and *H*). For primary health facilities, further stratify the list into SS sites and non-SS sites, and use a random number generator as described above to select one from each list.

In Ethiopia, some zones had fewer than four implementation health facility sites, and others contained only one type of site (e.g. only hospitals with no schools or primary health facility intervention sites). These zones were excluded from the sampling exercise, as it would have been inefficient to visit a zone which did not have an appropriate number and mix of sites to allow us to follow the sampling plan.

The first attempt at applying the above sampling plan was shared with the national MEL consultants, to ascertain whether (a) it was logistically feasible to travel to all of the selected sites within the data collection period, and (b) it contained an appropriate mix of high-performing and less well-performing sites (which was important for answering the evaluation questions). The initial selection of Kirehe as the rural district in Rwanda did not meet these two criteria, so it was replaced with a neighbouring district (Kayonza) which did. Likewise, in Ethiopia, Hadiya (SNNPR) was originally selected as the rural zone, but was replaced with Hawassa because travel to Hadiya was logistically challenging, and more key informants were available in Hawassa during the evaluation period. Even so, it was not possible to conduct interviews at two of the selected facilities in Hawassa (Shone Primary Hospital and Halaba Primary Hospital) due to lack of staff availability. For this reason, an additional facility was selected in Oromia region, Adama Zone: Geda health centre. The timing of the visit to Hawassa also unfortunately coincided with a field visit for the students at the university, so it was not possible to hold a students' FGD there; to compensate, Wolqite University was added to the list of evaluation sites.

The following table details the numbers and types of informants in the final sample:

Level	Stakeholder/Role	Type of Institution
Global		
Management	2 staff members [female]	ICM
	2 staff members [female]	Laerdal Global Health
Total: 4 [female]		

Level	Stakeholder/Role	Type of Institution
Rwanda		
Focus Group Discussions	3 midwives, 1 nurse [4 female]	Rural hospital
	1 midwife, 1 nurse [1 female, 1 male]	Rural health centre
	2 nurses [2 male]	Rural health centre
	8 student nurses [3 female, 5 male]	Rural education institution
	2 midwives [2 female]	Urban hospital
	3 nurses, 1 midwife [3 female, 1 male]	Urban health centre
	3 nurses [3 female]	Urban health centre
	12 nursing students [8 female, 4 male]	Urban education institution
	4 staff members [4 male]	RBC
	3 staff members [3 female]	RAM
Key informant interviews	Director [female]	Rural hospital
	Practice coordinator [female]	Rural hospital
	Facility in-charge [female]	Rural health centre
	Practice Coordinator [female]	Rural health centre
	Facility in-charge [female]	Rural health centre
	Midwife/ practice coordinator [male]	Rural health centre
	Midwife/ practice coordinator [female]	Rural education institution
	Facility in-charge [male]	Urban health centre
	Practice coordinator and midwife [female]	Urban health centre
	Facility in-charge [female]	Urban health centre
	Practice coordinator and midwife [female]	Urban health centre
	Facility in-charge [male]	Urban hospital
	Maternity unit manager / midwife / practice coordinator [female]	Urban hospital
	Head of the Department of Nursing [female]	Urban education institution
	Practice Coordinator/ Master trainer [female]	Urban education institution
	Master trainer facilitator [female]	Urban hospital
	Master trainer facilitator [female]	Urban education institution
	1 staff member [male]	UN organisation
Total: 62 [41 female, 21 male]		
Tanzania		
Focus Group Discussions	7 nurse-midwives, 1 labour ward attendant [7 female, 1 male]	Urban hospital
	5 nurse-midwives [5 female]	Urban health centre
	4 midwifery tutors [3 female, 1 male]	Urban education institution
	2 nurse-midwives [2 female]	Rural hospital
	8 nurse and midwifery students [3 female, 5 male]	Rural education institution
	1 nurse, 2 medical attendants [3 females]	Rural dispensary
	3 assistant nursing officers; 1 nursing officer [2 female, 2 male]	Rural health centre
Key informant interviews	Labour ward in-charge (nurse-midwife) [female]	Urban hospital
	Nurse-Midwife/Master trainer and practitioner [female]	Urban hospital

Level	Stakeholder/Role	Type of Institution
	Dispensary in-charge (clinical officer) [male]	Urban dispensary
	Nurse-Midwife [male]	Urban dispensary
	Nurse-Midwife [female]	Urban dispensary
	Nurse-midwife [female]	Urban health centre
	Head of Labour ward/nurse-midwife [female]	Rural hospital
	Principal [female]	Rural education institution
	Master trainer/nurse and midwifery tutor [female]	Rural education institution
	Master trainer/midwifery tutor [male]	Rural education institution
	Principal [female]	Urban education institution
	Nurse-Midwife/Director of programme [female]	International NGO
	Government official/Medical doctor [male]	Government
	Government official [male]	Ministry of Health
	Staff member [female]	TAMA
	Staff member [female]	TAMA
	2 staff members [2 female]	UN organisation
Total: 52 [38 female, 14 male]		
Ethiopia		
Focus Group Discussions	3 midwives [3 female]	Urban health centre
	2 midwives/assistant professor, lecturer [2 male]	Rural education institution
	6 nursing students [3 female, 3 male]	Urban education institution
	5 midwives [3 female, 2 male]	Urban hospital
	5 midwives [2 female, 3 male]	Urban hospital
Key informant interviews	Facility in-charge [1 female]	Urban hospital
	Master trainer /midwife [1 male]	Urban hospital
	Master trainer, maternity ward head [1 female]	Rural health centre
	Midwife, [1 female]	Rural hospital
	Staff member [1 female]	UN organisation
	Medical director [1 female]	Urban hospital
	Midwife /Delivery ward coordinator [1 female]	Rural hospital
	Facility in-charge [1 male]	Urban health centre
	Midwife [1 female]	Urban health centre
	Master trainer/midwife [1 male]	Urban hospital
	Dean [1 male]	Urban education institution
	Head of the department [1 male]	Rural education institution
	Manager, master trainer [1 male]	Rural education institution
	Master trainer [1 female]	Consultant
	Staff member [1 female]	Local government (rural)
	Staff member [1 male]	Local government (rural)
	1 staff member [1 female]	EMwA
	1 government official [1 male]	Federal Ministry of Health
Total: 39 [21 female, 18 male]		
GRAND TOTAL: 157 [104 female, 53 male]		

Annex B: MEL tools used during the programme

The **training and practice registers** were maintained by the master trainers and the MA programme managers. The information was transmitted to the MA and entered into spreadsheets.

During supportive supervision (SS) visits, the supervisors completed the **supportive supervision tool** and transmitted the data to Novametrics via the Survey Monkey platform using their personal mobile phones. Prior to the launch of the SS system, the MAs led an orientation session for supervisors, to acquaint them with the tool. Supervisors visited the selected sites in person, and collected data on impact and outcome indicators by reviewing the labour ward reports for the 3-month period immediately preceding each visit.

SS visits also involved an **RMC questionnaire**, during which the supervisor invited up to 5 women in the postnatal ward to complete an anonymous paper-based tool (available in Amharic, Kinyarwanda, Swahili and English) which asked about their experience of care during their time at the health facility. Respondents were asked to indicate their consent by reading (or having read to them) a consent form (available in Amharic, Kinyarwanda, Swahili and English). Women were offered the choice either to self-complete the questionnaire on paper, or to have the supervisor read out the questions and record their verbal responses. If the latter, supervisors were asked to ensure privacy as far as possible. About a quarter of the questionnaires were completed by the woman herself, and three-quarters by the supervisor. The extent to which privacy was assured is unknown, so the results of the RMC assessments should be interpreted with caution.

It would be reasonable to expect women who completed their own RMC form to feel less pressure to give a high score if they had not been treated with respect and therefore to give lower scores on average. However, for most of the questions in the RMC assessment, women who completed their own questionnaire gave on average slightly *higher* scores than those who had the questions read out to them. This may, however, be related to the fact that women who completed their own forms tended to have given birth in a hospital rather than a health centre (about two-thirds of them used a hospital, compared with only half of those who had the form read out to them).

Because the MEL system was not launched until 2019, no 2018 baseline data were collected for impact and outcome indicators (e.g. case fatality rates for eclampsia, postpartum haemorrhage, neonatal asphyxia). It was possible to collect a limited amount of baseline data retrospectively in Rwanda (see Section 3.1), but it was decided to supplement the programme's internal monitoring data with data from the country's own health management information system (HMIS), by working with national and sub-national ministries of health. HMIS Officers provided baseline data for the programme's implementation sites relating to the period July-September 2018 in Ethiopia and Tanzania (June-August 2018 in Rwanda), and endline data for the period October- December 2019 in Ethiopia[11] and Tanzania (November 2019-January 2020 in Rwanda).

The ICM MACAT was completed by each MA during one or more deliberative meetings, ideally facilitated by a technical adviser from ICM. The MA rates its own capacity on a variety of dimensions.

[11] The Ethiopian HMIS Officer also provided data for the periods in between these two quarters.

Annex C: Comparison of programme monitoring data against HMIS data in Rwanda

As noted in Section 3.1, endline HMIS data for Rwanda was provided just before this report was finalised. The following table compares the results recorded by the 50KHB monitoring system and the results recorded in HMIS for the same sample of 27[12] health facilities.

Indicator	Baseline						Endline					
	Numerator		Denominator		Value		Numerator		Denominator		Value	
	50KHB	HMIS	50KHB	HMIS	50KHB	HMIS	50KHB	HMIS	50KHB	HMIS	50KHB	HMIS
Case fatality rate: PPH	11	4	152	137	7.2%	2.9%	7	14	205	206	3.4%	6.8%
Case fatality rate: eclampsia	7	1	192	157	3.6%	0.6%	0	2	169	296	0.0%	0.7%
Facility-based maternal deaths as a % of deliveries	15	20	13,252	13,757	0.11%	0.15%	11	6	15,004	13,849	0.07%	0.04%
Case fatality rate: neonatal asphyxia	63	69	314	321	20.1%	21.5%	61	62	351	333	17.4%	18.6%
Facility-based neonatal deaths within 24 hours of delivery (excluding stillbirths) as a % of deliveries	92	NS	13,252	NS	0.7%	NS	50	NS	15,004	NS	0.3%	NS
Facility-based fresh stillbirths as a % of deliveries	185	101	13,252	13,757	1.4%	0.7%	183	177	15,004	13,849	1.2%	1.3%
% of facility-based deliveries for which the newborn was referred or admitted to NICU	867	NS	13,252	NS	6.5%	NS	1,371	NS	15,004	NS	9.1%	NS
% of eclampsia cases treated with $MgSO_4$	189	95	192	105	98.4%	90.5%	168	215	169	242	99.4%	88.8%
% of women giving birth who received a uterotonic immediately after delivery	11,559	9,394	13,252	13,757	87.2%	68.3%	14,997	12,960	15,004	13,849	99.9%	93.6%
% of newborns not crying immediately after birth who received bag and mask ventilation	452	NS	672	NS	67.3%	NS	524	NS	703	NS	74.5%	NS
% of women whose placenta was manually removed who received pharmacological pain relief or sedation in advance of the procedure	99	NS	118	NS	83.9%	NS	73	NS	76	NS	96.1%	NS

NS = data not provided

[12] In the HMIS data, a few facilities recorded impossible results, e.g. more deaths from PPH than PPH cases. Where this happened, the results from that facility were excluded from the above analysis, so not all of the HMIS results are based on the full set of 27 facilities.

It was hoped that the programme monitoring data and the HMIS data would be comparable, and that the two sources could be used for triangulation. Unfortunately, however, there were many discrepancies between the two sources. The only indicator for which there was a close match at both baseline and endline was the case fatality rate for neonatal asphyxia. The maternal death rate was also fairly close.

Slightly more encouraging is the fact that, even though the numbers did not match, for several indicators the direction of travel is the same in both data sources, e.g. both sources recorded an improvement in the maternal death rate, the neonatal death rate and the routine use of uterotonics. However, the direction of travel was not the same for two indicators: for the PPH case fatality rate and the fresh stillbirth rate the programme monitoring data showed an improvement, but the HMIS data a deterioration.

The two sources agreed that more PPH cases were recorded at endline than at baseline. However, the programme monitoring tools showed fewer eclampsia cases at endline than at baseline, whereas HMIS showed more at baseline than at endline.