



Innovating for Maternal & Child Health In Africa

**Innovating for Maternal and Child Health in Africa
(IMCHA) Research projects – Outcome Harvest
Case Study: Tanzania**

Submitted to: Lynette Kamau

Email: lkamau@aphrc.org

Submitted by: Dena Lomofsky and Miriam Chikwanda

Dena@southernhemisphere.co.za

Tel: 021 422 0205

PO Box 3260, Cape Town, 8000

www.southernhemisphere.co.za



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Dena Lomofsky (Team Leader)

Abbreviations

AGOT	Association of Gynaecologist of Obstetrician of Tanzania
APHRC	African Policy Health Research Centre
BEmONC	Basic Emergency Obstetrical and Newborn Care
BMC	Bugando Medical Centre
CEmONC	Comprehensive Emergency Obstetrical care and Newborn Care
CHMT	Council Health Management Teams
CHW	Community Health Worker
CPD	Continual professional development
CUHAS	Centre and its university of Health and Allied Sciences
EA-HPRO	Eastern Africa Health Policy Research Organisation
DM	Decision-makers
DNO	District nursing organisations
HCF	Health care facilities
IDRC	International Development Research Centre
IMCHA	Innovating for Maternal and Child Health in Africa
IRT	Implementing research teams
ITC	Information, technology and communication
KT	Knowledge translation
MCH	Maternal and child health
MMR	Maternal mortality rate
MNC	Mothers, newborns and children
MNCH	Maternal, newborn and child health
MoH	Ministry of Health
NACTE	National Council for Technical Education
POA	Plan of action
TTCIH	Tanzania Training Centre International Health
WHO	World Health Organization

1 Introduction

Improving access to quality health services for mothers (including pregnant women), newborns and children (MNC) requires evidence-informed, goal-oriented health and social policies as well as interventions based on good practice. As a commitment to maternal, newborn and child health (MNCH), Canada's International Development Research Centre (IDRC) invested CAN\$36 million through the Innovating for Maternal and Child Health in Africa (IMCHA) initiative – a seven-year programme (2014–2020) in 11 countries¹.

Convened by the Eastern Africa Health Policy Research Organisation (EA-HPRO), a consortium of three institutions, the IMCHA initiative supports 13 research teams in six East African countries². Thus, EA-HPRO supports researchers' projects to implement interventions aimed at improving access to quality MNC health services. The research projects are aligned with one or more of IMCHA's three themes: **(1) high-impact community-based interventions; (2) quality of care at the facility level; or (3) human resources for health.**

Out of these 13 East African research teams, two case studies, one from Uganda and Tanzania, have been selected to demonstrate IMCHA initiative successes of two projects per country. Case studies were selected based on the strength of their positive outcomes. As a result, **this report is a case study report for Tanzania.** This report demonstrates how the EA-HPRO consortium supported research projects to strengthen their policy engagement through capacity building, facilitating linkages with national MNCH stakeholder networks, synthesising evidence on MNCH issues and catalysing sustained engagement among the research teams and their national decision-making bodies.

1.1 Tanzanian maternal and child health context

Tanzania's commitment to preventing maternal and newborn deaths has earned new momentum since 2016 in its adoption of a series of policies that recognise that a healthy and informed population, where fewer women die while giving life, is the bedrock of development (Demographic Health Survey 2015–2016 report, 2016). The country has made considerable strides in achieving the Millennium Development Goal of reducing under-5 mortality by two-thirds; yet worryingly, trends are reversing concerning its maternal mortality rate (MMR). The Demographic Health Survey 2015–2016 report has identified a 20% increase in the rate of women dying while giving life over the last eight years, from 432/100,000 live births in 2012 to 556/100,000 live births in 2015. Tanzania is also one of the most challenging places in sub-Saharan Africa to be a newborn, ranking among the 10 countries responsible for more than 60% of newborn deaths.

Political economy

Tanzania is a lower-middle-income economy, largely dependent on agriculture for employment, accounting for about half of the employed workforce. The economy has been transitioning from a command economy to a market economy since 1985. Despite efforts between 2007 and 2016 to reduce the country's poverty rate from 34.4% to 26.8%, the absolute number of poor people has

¹ In West and East Africa.

² Ethiopia, Malawi, Tanzania, Mozambique, Uganda and South Sudan.



remained high at about 13 million due to high population growth (Human Rights Watch World Report 2020)

Sexual and reproductive health rights for women in Tanzania are being increasingly eroded. According to the Human Rights Watch World Report (2015), since John Magufuli’s election as president in December 2015, Tanzania has witnessed a marked decline in respect for free expression, association and assembly. Verbal attacks on rights by authorities are increasing and self-censorship and fear of reprisals have stifled criticism. Women and girls, particularly young mothers seeking to study, face discriminatory policies. In September 2019, the government announced it was suspending the United States Agency for International Development, which supported birth control-related messaging. The president deemed the use of contraception unnecessary and called for women to give up using family planning information. IMCHA has been implemented within this context.

Tanzania’s public service delivery is underpinned by the Decentralisation by Devolution (DbyD) policy, which aims to strengthen the local government authorities’ service delivery to the public³. The health sector also strictly implements based on this policy. Tanzania’s country health policy implementation services are led by the Ministry of Health (MoH), which ensures that local government authorities implement laws, regulations, policies and guidelines. The regional officer represents the MoH at a regional level, directing maternal health services in the country’s regions. Each region in the country is subdivided into districts, where the district officers oversee the provision of services in health care facilities (HCFs) or centres. District officers report to the regional officer. The regional officer, therefore, ensures that health services in the districts are implemented using the DbyD approach. Based on this hierarchical structure, the health policy decision-making is decentralised to the district level, which means that the regional level policymakers are an important target audience of health policy research because they ensure policy gets implemented.

1.2 IMCHA in Tanzania

The IMCHA initiative supports six research teams to conduct 10 large-scale implementation research projects in seven of the country’s 31 regions (Geita, Iringa, Mara, Morogoro, Mtwara, Mwanza, and Singida). The projects are described below.

Table 1: Tanzania IMCHA research projects per region

Project focus	Region
Testing capacity of m-health platform to provide education and practical skills to health workers for improved detection and management of eclampsia and associated challenges that arise during pregnancy.	Geita and Singida
Addressing gaps that ensure mothers get the care they need and applying quality improvement strategies across six districts in southern Tanzania.	Mtwara
Learning what it takes to accelerate Basic Emergency Obstetrical and Newborn Care (BEmONC) services district-wide by addressing critical challenges in health service delivery, including the specific needs of adolescent mothers.	Mwanza

³ Massoi, L, & Norman, AS (2009). Decentralisation by devolution in Tanzania: Reflections on community involvement in the planning process in Kizota Ward in Dodoma. *Journal of Public Administration and Policy Research*, 1(7), 133–140.

Project focus	Region
Training health workers on Comprehensive Emergency Obstetrical care and Newborn Care (CEmONC) post-training mentorship and support to increase community access to comprehensive care.	Morogoro
Implementing critical interventions to address access barriers in the community and at health centres.	Mara
Evaluating key interventions that lift barriers preventing access to services at a community level in Iringa region.	Iringa

The **highlighted** projects implemented in Mwanza and Morogoro regions respectively are the focus of this case study. These projects were implemented in conjunction, focusing on reaching the main targets set for MNCH.

Overview of the Case study Research Projects

Research team: Catholic University of Health and Allied Sciences (CUHAS), University of Calgary and Mwanza Region Health Department

Research topic: Learning what it takes to accelerate basic and Emergency Obstetrical and Newborn Care (BEmONC) services district-wide by addressing critical challenges in health service delivery, including the specific needs of adolescent mothers.

Project descriptions and objectives:

- To study what it takes to accelerate BEmONC services district-wide by addressing critical challenges in health service delivery including the specific needs of adolescent mothers.
- To assess and address how gender norms prevent access to quality care.
- To integrate reproductive health needs of women into ongoing health efforts by CHWs and health service providers.

Knowledge Translation (KT) products produced:

None, development of KT products in progress.

Current status/implementation progress:

Project Close was scheduled April 2020 but has now been extended to October 2020 to finalise the KT pieces. (Delay due to Covid-19). Data was collected and analysed with findings presented to policy makers at district and regional levels.

Implementing institutions: Catholic University of Health Allied Sciences; University of Calgary; and Mwanza Regional Health Department.

Figure 1: Overview of case study 1

Research team: Tanzanian Training Centre for International Health (TTCIH), Dalhousie University and Morogoro Regional Hospital

Research topic: Training health workers on Comprehensive Emergency Obstetrical care and Newborn Care (CEmONC) post-training mentorship and support, to increase community access to comprehensive care.

Project description and objectives:

To address gaps in health service delivery by training providers in life-saving interventions in emergency obstetric care as well as costing related inputs to provide such services.

To provide sustainable structures by strengthening the leadership and management skills of health facilities managers.

KT products produced and/or presented:

Poster presentation and journal article on knowledge acquisition training on 'helping babies survive in Tanzania'.

Factsheet on accessing safe deliveries in Tanzania.

Current status/implementation progress: *The project reached completion in 2019. Research results were used to develop learning modules which were uploaded on stand-alone desktop computers at the HCFs. HCFs trained on how to improve CEmONC services.*

Implementing institutions: *Tanzanian Training Centre for International Health; Morogoro Regional Hospital; and Dalhousie University, Canada.*

Figure 2: Overview of Case Study 2

2 Methodology

Outcomes for all six Tanzanian research projects were harvested through document review and interviews with research teams, including embedded decision-makers. The outcomes were captured in an Excel spreadsheet (or outcome tracker) and categorised according to seven thematic areas:

Research outcomes – (1) Maternal and child health (MCH) knowledge and understanding; (2) Research capacity⁴; (3) Relationships between decision-makers and researchers; (4) Better use of evidence in decision making.

Policy outcomes – (5) Human resources for health; (6) Improved quality of care at the facility level; (7) High-impact community-based interventions.

⁴ Includes Research, knowledge and skills and DM & Researcher relationships

The two projects mentioned above were selected to exhibit significant research and policy outcomes. As such, these projects demonstrate research practices that lead to policy implementation changes.

For data collection, the outcome harvesting approach informed the methodology. Thus, outcomes were selected based on interviews with research team members and substantiators, workshops and document review. We adopted the following outcomes harvesting steps:

STEP 1: Outcome harvesting design

We identified useful questions for the harvesting of outcomes through interviews and an online workshop with harvest users, i.e. IMCHA and the research teams. We developed a theory of change in this workshop to guide the selection of outcomes and the analysis of their significance for the IMCHA initiative.

STEP 2: Document review and drafting outcome descriptions

We drafted outcome descriptions through reviewing research project reports, including situational analysis, annual reports, strategic plans, meeting reports and concept notes etc. As a result, we established the initial descriptions of the outcomes dimensions, such as contribution and agents of changes.

STEP 3: Formulation of outcome descriptions

We conducted qualitative interviews with country research teams who were regarded as change agents. These interviews contributed to a deeper understanding of document review findings. Also, the interviews provided the information necessary for the completion of descriptions.

STEP 4: Substantiate

This step aimed to improve the reliability of data, data analysis and enrich the understanding of the policy changes, significance, collaboration and contribution. Substantiators are people who can verify that the outcome occurred; they included people who could validate research implementation outcomes and health outcomes.

STEP 5: Analysis and interpretation

Following finalisation and substantiating of outcome descriptions, we organised the outcomes so that they could answer questions defined in Step 1. Patterns across outcomes and change agent contributions were identified to determine whether these outcomes synergistically created broader and deeper changes. Analysing outcomes enabled an evidence-based answer to the question of what had been achieved.

STEP 6: Support use of findings

Step 6 involved drawing reasonable conclusions based on the solid evidence gathered and recommending discussion points about harvesting findings. The results of the evaluation will be communicated through innovative communications products as well as a journal article.

Sampling

Data was collected from the two research teams (including the decision-makers) and substantiators. Participants were purposively selected based on their involvement in the projects or their ability to comment on outcomes. Table 2 shows the sample of participants who were interviewed to inform the project outcomes.

Table 2: Sample of participants who informed the project outcomes

Project: Adapt, implement and evaluate the Mama na Mtoto package of MCH activities		
Stakeholder	Position	Interviews held
Principal investigators (PIs)		1
Research team members	M&E Coordinator; Synergy Gender & Equity Study Coordinator; Synergy Team member	3
Decision-maker embedded in the research team	Regional Medical Officer	1
Substantiators	District, health expert & Reproductive & Child Health Coordinator; District Nurse; District Medical Officer	3
Total		8
Project: Training health workers on emergency obstetrical care and post-training mentorship and support to increase community access to comprehensive care		
Principal investigators	Gynaecologist	1
Research team members	Researcher and Training Coordinator	1
Decision-maker embedded in the research team	Principal Medical Officer	1
Substantiators	Regional Medical Officer; Paediatrician and gynaecologist	2
Total		5

Limitations for each case

The project outcomes were harvested either before the end of a project cycle or soon after the project had ended, leaving little time for the maturation of the outcomes, which may not therefore provide a true reflection of the sustainability of the uptake of research findings.

Substantiators were interviewed based on availability; as a result, not every outcome could be substantiated.

The Covid19 pandemic regulations presented data collection challenges. To ensure collection of in-depth and comprehensive data, face-to-face interviews with research teams and substantiators were initially planned. Also, interviews with community members were scheduled to inform impact of the IMCHA initiative. Evaluators, however, were unable to travel, so data collection took the form of virtual interviews. Limited access to internet due to working remotely delayed correspondence with respondents. Due to poor network some interviews were cut short. Some respondents in working in health institutions committed curbing to Covid19 infections, therefore securing interviews early on was not possible.

3 Case study 1

Learning what it takes to accelerate Basic and Emergency Obstetrical and Newborn Care (BEmONC) services district-wide by addressing critical challenges in health service delivery, including the specific needs of adolescent mothers.

3.1 Context and background to this research team and project

Historically, Tanzania's MoH focused on immediate output-based health interventions rather than on long-term, scalable outcomes. This resulted in constant high rates of health challenges, including high rates of maternal deaths. The MoH realised that the situation was also worsened by the use of Pro re nata Staff⁵(PRN) in under-resourced HCFs. As a result, the MoH identified four focal areas to prioritise in the health sector: **(1) MCH, (2) governance, (3) human resource and (4) availability of medical supplies.** Few regions with poor performance health indicators in MNCH for interventions were identified for intervention. The Mwanza region was one of the high-risk areas for maternal deaths.

IDRC selected this research project due to its relevance to the MoH's four priority areas, and correlation to all three of the IMCHA initiative's thematic areas that aim for improved **high-impact community-based interventions; quality of care at the facility level and human resources for health.** The research project aimed to intervene in the improvement of MCH outcomes by **strengthening district health systems leadership, strengthening health facilities human and physical resources, improved skills and knowledge in MCHA and promote health in the communities.** These interventions agree with the first three MoH priority areas.

The EA-HPRO conducted capacity building with the research team to sensitise it to the contextual background of the HCFs in which it would implement its study. This was done through the following:

- EA-HPRO requested research team leaders who were also known as principal investigators (PIs) to select research team members who required skills training. EA-HPRO trained these members in research skills (qualitative and quantitative methodologies), knowledge translation, gender equality and policy engagement.
- The research team conducted a **situational analysis and baseline study** of the MNCH policy issues in Tanzania.
- The research team also conducted a **SWOT analysis** to highlight the status of MNCH issues in Tanzania and outline areas for the EA-HPRO and implementing research teams (IRTs) to engage in evidence-informed policy.
- The EA-HPRO coordinated an MNCH **context mapping exercise** to help the research team develop a picture of the key stakeholders involved in the MNCH related issues and an understanding their levels of interest and influences, existing relevant policies and decision-making process.

After the IDRC approved the research proposal, the EA-HPRO facilitated a meeting in 2017 to:

- share the findings of the mapping work
- define existing policies

⁵ Unadministered staff only used as required.

- identify decision-makers to target within the MoH
- outline a roadmap (country engagement) for our policy engagement work
- define roles for the RTs at district and regional levels
- define the EA-HPRO's role through national level convening.

The EA-HPRO informed the research team of factors that inform scale-up of services based on the priorities articulated in the national health policies and prior engagements with critical government leaders. In 2019, the EA-HPRO convened another session to further build on informing scale-up services.

3.2 Description of the research project and outcomes

3.2.1 Research design and objectives

From 2015–2020, the project worked in Mwanza region, to reduce maternal and newborn mortality through comprehensive community- and facility-based MNCH programming. The research was guided by this key question:

"What does it take to accelerate BEmONC district-wide by addressing critical challenges in health service delivery, including the specific needs of adolescent mothers?"

Based on this key question, the research team expected to achieve these policy outcomes:

- Provide hands-on safe delivery simulation training as refresher courses to clinicians.
- Reduce neonatal and perinatal deaths at health facility level in the Mwanza region of implementation.
- Improve confidence in health providers' provision of obstetric and newborn services.
- Eradicate the notion of hierarchy among clinicians, CHWs and facility health workers through peer to peer mentorship.

The research project was implemented over a 3-year (2017–2019) period in two districts (Kwimba and Misungwi) of the Mwanza region. Since the project's main purpose was to strengthen existing government health systems across various levels, the activities were implemented at **the district, health facility and community levels**. The district health officers led activities at the HCFs which included **meetings, equipment provision, facility upgrades, training, mentorship and technical assistance**. Activities were delivered in a specific sequence and purposeful way (SCAN, ORIENT, PLAN, EQUIP, TRAIN, ACT, and REFLECT), and were **designed to promote quality implementation incorporating partner experiences and recognised best practices**.

In late 2019, collected data was analysed and presented to the policymakers, with the project scheduled to be closed in April 2020. However, since KT communication pieces have not been developed, the project has been extended to end in October 2020. The effects of the COVID-19 pandemic reportedly caused the delay in project completion.

3.2.2 Role players

The role players that were identified for in this project outcome, including specific roles they played and how they worked together are outlined in Table 3 below.

Table 3: Roles and responsibilities of key role players for case study 1

Stakeholders	Roles
<i>EA-HPRO</i>	<ul style="list-style-type: none"> EA-HPRO provided short term training to selected team members in KT and gender and equity. IDRC provided venues in Tanzania and Nairobi that were used as spaces to engage and disseminate the findings. Also, the IDRC guided the research team on how to structure its annual reports.
Research teams	<ul style="list-style-type: none"> The CUHAS and University of Calgary (research team) designed and conceptualised the research proposal and carried out all research activities including situational analysis and context mapping studies, baseline and translation and policy engagement throughout the research process. The team surveyed the community, which provided insight into the situation in the community which then informed the appropriate interventions for the research project. Bugando Medical Centre (BMC) is a consultation and higher referral hospital in lake zone Tanzania. BMC provided technical support, assisting the district level HCFs with clinical guidance on MNCH services.
Embedded decision maker	<ul style="list-style-type: none"> The regional medical officer advised the research at the start of the project and in the dissemination sessions; he also led all health facilities in Mwanza region ensuring that they adhered to the action plans they had agreed during dissemination. He also informed the research on adapted practices and advised on areas with implementation gaps.
Other policy change actors	<ul style="list-style-type: none"> CHWs promoted health at the communities, connecting pregnant women and adolescents to the HCFs. Health facility governance committees planned and budgeted for implementation activities in the community and HCFs. Trained clinicians at HCFs provided peer-to-peer mentorships of nurses and student doctors at the simulation labs to ensure the labs remain active after the research. Director of Reproductive and Child health selected trainers for HCFs simulation labs. Village leaders encouraged the participation of community members and helped map out the gaps in the communities. District officials carried on with interventions and learning was extended to all health providers who had not been trained by the research in the facilities. The District technical team provided monthly assistance mentoring nursing officers and clinicians them on how to carry on their duties.

3.2.3 What outcomes have been achieved

Figure 3 below shows an overview of the outcomes achieved. A detailed analysis of these outcomes follows in the next section.

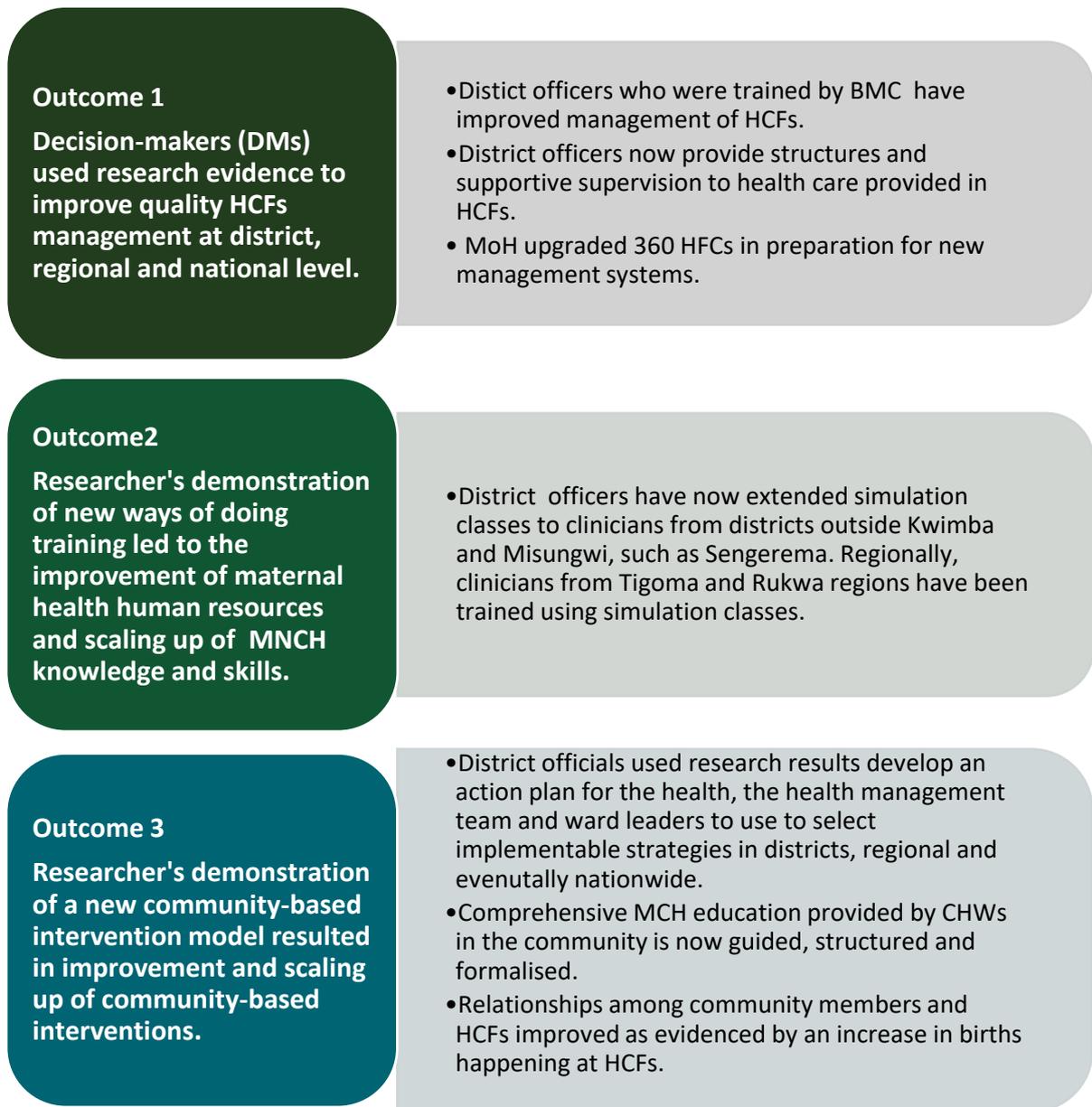


Figure 3 Outcomes achieved

3.3 Outcome analysis

This case study focuses on three outcomes that are related to the outcome level of value and utilisation of evidence to scale up policy. This is currently the higher-level outcome in terms of policy influence. To date, the researcher's approach and methodology has been used to scale up services beyond the Mwanza region. The following section provides a detailed discussion of the three outcomes of interest.

Description and significance of the outcome

Outcome 1: Decision-makers (DMs) used research evidence to improve quality HCFs management at district, regional and national level.

Outcome statement

MoH district health officers did not have formalised or explicit guidelines to manage HCFs and supervise health care providers. As a result, district officers lacked competence in managing HCF clinical staff. In addition to management issues, three key problems were identified as gaps in HCF service provision. Firstly, a lack of working guidelines, secondly, poor planning and thirdly, inadequate infrastructure such as the absence of ambulances and lack of labour theatres. Through the research's introduction of new methods of HCF management, district officers could provide formalised management including supportive supervision of health providers. Researchers used their KT skills to present research evidence to policy DMs. As such, DMs also found value in the evidence shared by the researchers regarding improving the infrastructure of HCFs before improving management systems. This prompted the MoH to renovate and upgrade 360 HCFs. The innovative training guidelines and approaches to management developed by the research team have also since been scaled up beyond Mwanza regions. The MoH's Regional Officer replicated the supportive supervision training guideline and distributed it to districts officers in other HCFs. By the end of 2019, the supportive supervision training guideline had been extended to other HCFs that were not part of the research in the Mwanza region and additionally in the Sengerema district. The MoH also adopted a plan of action (POA) for HCF management, which was developed by the research team, and the MoH now owns this. The POA will be incorporated in the strategic planning of health service provision for HCFs nationally and will also be for use by the council health management committee and ward leaders to enable them to select implementable strategies⁶. Regional authorities replicated the managerial component in their quality assurance programme, which is intended for assessment of the quality of HCFs nationwide.

Contribution

- The research's situation analysis revealed the importance of improving infrastructure before embarking on management training. This was shared DMs who agreed that training district officers in under resourced **Research team:** Tanzanian Training Centre for International Health (TTCIH), Dalhousie University and Mongororo Regional Hospital
- **Research topic:** Training health workers on Comprehensive Emergency Obstetrical care and Newborn Care (CEmONC) post-training mentorship and support, to increase community access to comprehensive care.
- **Project description and objectives:**
- To address gaps in health service delivery by training providers in life-saving interventions in emergency obstetric care as well as costing related inputs to provide such services.
- To provide sustainable structures by strengthening the leadership and management skills of health facilities managers.
- **KT products produced and/or presented:**

⁶ There is no evidence yet that the POA is used nationally for service strategic planning.

- Poster presentation and journal article on knowledge acquisition training on 'helping babies survive in Tanzania'.
- Factsheet on accessing safe deliveries in Tanzania.
- **Current status/implementation progress:** *The project reached completion in 2019. Research results were used to develop learning modules which were uploaded on stand-alone desktop computers at the HCFs. HCFs trained on how to improve CEmONC services.*
- **Implementing institutions:** *Tanzanian Training Centre for International Health; Morogoro Regional Hospital; and Dalhousie University, Canada.* HCFs would restrict the use of learnt skills.
- The embedded decision-maker linked the research team with the MoH policymakers, and they shared the evidence with the Department of Reproductive and Child Health in country engagement meetings. They shared evidence of the improved quality of service delivery which was evidenced by increased numbers of pregnant women visiting the HCF in the Mwanza region during their first 12 weeks of pregnancy.
- The Council Health Management Teams trained were first trained by the research teams at district hospitals, and then they cascaded this and trained HCF district officers in supportive supervision.

Verification

The regional official acknowledged changes in supportive supervision and management at HCF level. Both the regional and district officers verified that renovation of 360 HCFs had been stimulated by the research recommendations shared during the engagement with MoH policy makers.

Significance of change

This outcome supports IMCHA's goal to contribute to innovations for improved quality of care at the facility level, and improved human resources for health; the positive results from the research have been scaled.

Outcome 2: Researcher's demonstration of new ways of doing training led to an improvement in maternal health human resources and scaling up of MNCH knowledge and skills.

Outcome statement

Most on-the-job training in the Tanzanian health sector varies in duration (at most 2 /3 weeks), theory and content. Training on the safe delivery of babies was once-off and provided by a range of unaccredited institutions. The research introduced simulation classes which also included guidance on peer-to-peer mentorship and replication of MCH care scenarios. Training content involved basic obstetric and neonatal care services and other issues such as safe delivery of babies and managing eclampsia. The research evidence supported the link between simulation training and improved competence of health care providers in basic obstetric and neonatal care services at the end of 2019. The research showed positive results at two levels:

1. At the **individual level**, health care providers' skills have improved. The health workers in the Kwimba and Misungwi districts in the Mwanza region and those in the Sengerama district can now attend to complicated MCH cases such as eclampsia and preterm labour. Simulation classes now continue to function in HCFs where the research was implemented. Also, simulation labs were set up in three hospitals and one health centre in the Mwanza region where the research was implemented. These hospitals include Ngudo Hospital, Mariya Hospital, Mashimba Hospital,



Nyamurama Health Centre. Simulation classes have also been extended to the Sengerema district where the research was not implemented. The regional officer is also piloting the simulation learning in the Tigoma and Rukwa regions, intending to replicate these nationwide. This outcome is sustained as the trained staff at the HCFs in the Mwanza region will continue training other health care providers. Also, HCFs from other regions will be allowed to visit the Mwanza region for training in simulation classes. It is envisioned that the MoH will fund and take over the replication process.

2. At the **institutional level**, CARE international (an international non-governmental organisation) has taken on the role of coordinating the continuation of simulation classes in the Mwanza region. The University health management has changed the nursing curriculum to be competence-based to replace its previous curriculum which did not involve practical assessments. This was after they visited sites where simulation classes were conducted in the Mwanza region. They have also established a simulation lab at the Catholic University of Health and Allied Sciences at the primary health care centres. District nursing organisations (DNOs) are now motivating for practising in simulation classes to be considered as a qualification for CPD (continual professional development) points for nurses.

Contribution

- The Bugando Medical Centre facilitated the training of partners and health providers as facilitators who would then train the CHWs on MNCH skills. The regional officer introduced the research simulation classes to district officers. Trained district officers adopted the simulation classes as a new practical-oriented, job capacity building approach. District officers facilitated setting up simulation labs at selected HCFs and trainer clinicians conducted training for six days.
- The embedded DM played a significant role pushing for evidence to be scaled up regionally. As such, the MoH adopted the simulation classes in the additional district of Sengerema and the regions of Tigoma and Rukwa.

Verification

The benefit of simulation sites for health care workers was acknowledged by the district medical officer who confirmed an increase in trained health workers in the Kwimba and Sengerema districts and a nursing institution in the Misungwi district, which is now issuing certificates for simulation classes. The district nursing officer also substantiated that six HCFs have simulation labs where nearby health facilities visit to practice managing eclampsia, helping babies with nasal breathing and using partograph properly. There was no verification of simulation classes being implemented in other regions as the interviewed medical officer stated that he was only involved in implementations within in his region of operation.

Significance of change

This is an important outcome because the MoH owns the HCFs and beneficiaries rely on the district officials for better services. By researching in line with governmental needs and requirements, the research innovatively changed old systems and contributed to a decrease in maternal deaths. Also, the nursing curriculum changes at university and medical hospital level further improved MCH knowledge and skills for MNCH human resources.

Outcome 3: Researcher's demonstration of a new community-based interventions model resulted in improvement and scaling up of community-based interventions.

Outcome statement

Historically, a significant number of births in rural Tanzania were delivered in homes by traditional healers and this resulted in increased birth defects and maternal death. CHWs became integral in educating pregnant mothers in communities on the importance of accessing MCH services from HCFs. The work of CHWs has not always been effective or sustainable. This research project was motivated by concerns about the sustainability of work by CHWs; before the research, most of the maternal community health interventions that were intended to improve MCH health education in Mwanza region seemed to cease after project life cycles. Until 2019, HCF staff did not formally engage with CHWs who had volunteered in health-related work for many years. While an MCH education guide was developed by MoH for health workers to follow, this was not employed by regional officers at the community level for district officers to guide CHWs. The district officers previously assigned two CHWs to a village which was a vast area and difficult to cover.

The research introduced a model of assigning one CHW per hamlet, which continued after the research project. Regional and district officers carried on assigning CHWs to continue working per hamlet – a smaller area to cover. The MoH is also planning to ensure that after the piloting of 1 CHW per hamlet in Sengerema district the same model will be adopted in other districts nationwide.

Having learnt from the research findings, district officials as directed by the regional officer ceased all unstructured community interventions that were being carried out by CHWs through NGOs. A network of 1800 CHWs has now been created in both districts of Kwimba, Misungwi and Sengerema these were chosen by the community members to encourage ownership of health facilities using defined selection criterion. CHWs provide health promotion education in the community. Unlike other CHWs in other districts these CHWs report to the community and the district health leadership management team (this consists of health medical officer, health facility in charge and CHW supervisors at the facilities). As before the research project, CHWs continue to work as unpaid volunteers. In 2019, after the research more male volunteers were recruited as compared to before when women were predominant. Also, the retention level of CHWs has improved since the employment of the research evidence.

The MCH education guideline was updated by MoH and is now being used by district officers to ensure that CHWs have adequate resources and that their work is standardized. District authorities now incorporate this guideline in the annual plan and budget to ensure that the job descriptions and what is expected of the CHWs are covered by the district planning and for supervision purposes and also for these to be reported at the financial year.

CHWs have now motivated the community through their practice in income generating activities using government and partner funds. Thus, CHWs formed community networking groups, also started a business to sustain their health education work through liquid soap making, goat keeping, a clothing boutique. The district authorities have agreed with implementing partners i.e. NGOs that any future health-related intervention will be implemented by the trained CHWs to ensure the sustainability of skills and maintaining continuation of quality work in the community.



Contribution

- The research demonstrated that assigning one CHW per hamlet increases the effectiveness and retention of CHWs.
- Involvement of the regional health officer led to the continuation of assigning CHWs to hamlets without the actual mandate from the MoH. Village leaders allowed CHWs access to the hamlets and assisted CHWs with navigating the communities to carry out their activities.
- Community members selected the CHWs who would work in their hamlets.

Verification

As verified by the district nursing officer, the relationship between CHWs and HCFs staff improved. The officer acknowledged that CHWs are now aware of their roles as they are supervised and provided with tools such as flip charts, education manual and stationery to formalise their work.

Significance

The deployment of more trained CHWs in communities, together with health promotion education, has resulted in increased births /deliveries taking place at the HCFs. This proves that researchers developed a better understanding of MCH challenges within the community context and managed to rectify these using effective approaches. The significance of this change is that the research has demonstrated a better model for motivating and increasing the effectiveness of the work of CHWs. Thus, CHWs work contributed to IMCHA's goal of improving impact on community-based interventions.

Outcome process

The following figure depicts a chain of steps of factors and actors that have contributed to the realisation of outcomes over the project cycle.

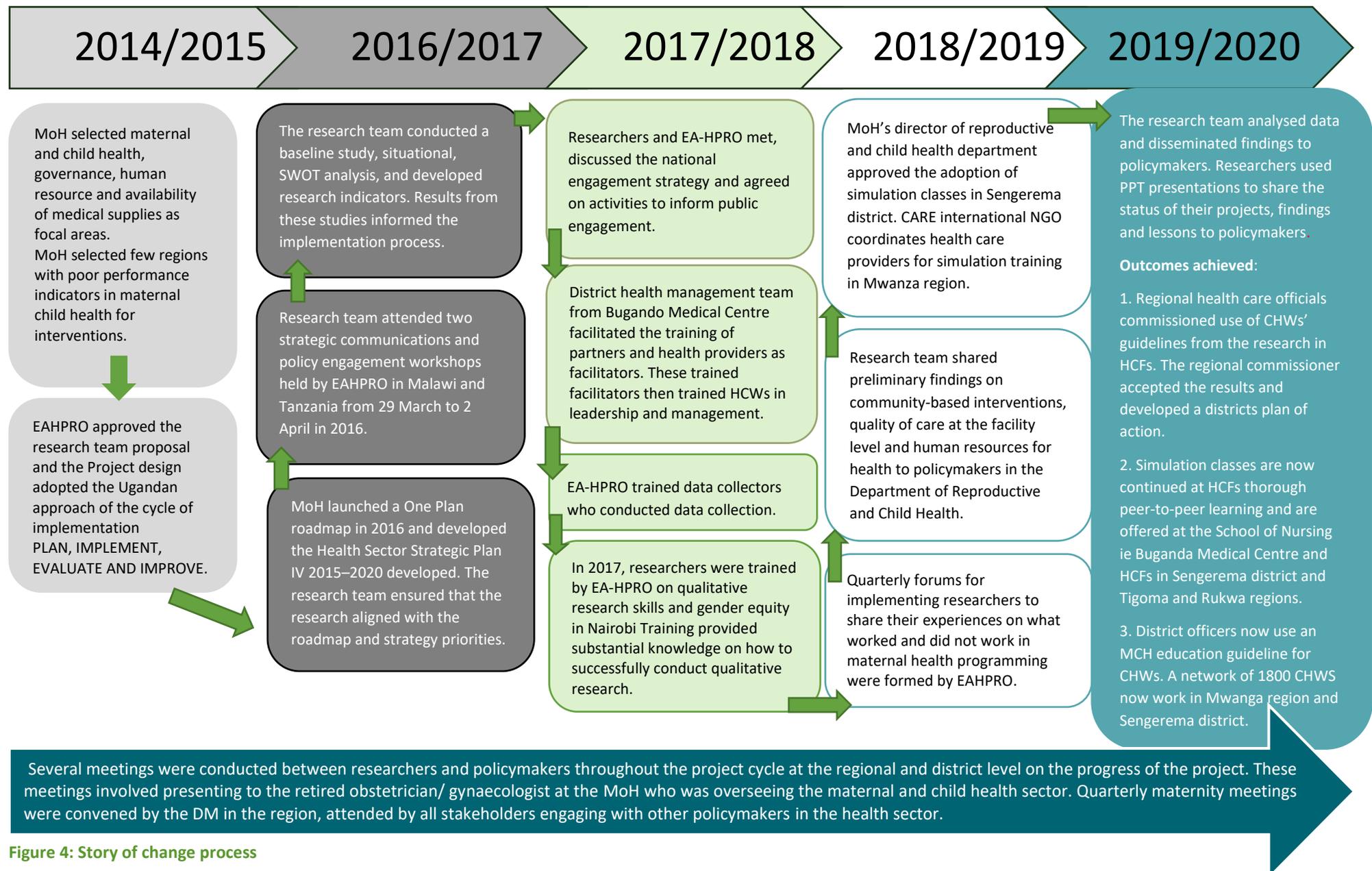


Figure 4: Story of change process

3.4 Contributing factors and actors to the outcome

3.4.1 Specific project interventions/actions IMCHA has contributed to the outcomes

The following are IMCHA's contributions to the realisation of the project outcomes.

EA-HPRO consortium facilitated the training of researchers in communication and policy engagement. Thus, two strategic communications and policy engagement workshops were held in Malawi and Tanzania from 29 March to 2 April in 2016. In 2017, training on KT was conducted for researchers in Nairobi. EA-HPRO facilitated this training, the purpose of which was to increase researcher's knowledge on policy engagement. As a result of this training, researchers were able to better communicate and present their evidence in a manner that prompted the policymakers to effect policy change. Since the research had not produced any communication products, its engagement was done using PowerPoint presentations and verbal presentation.

EA-HPRO provided researchers with qualitative and quantitative research methodology skills and improved their research skills. Quality research results lead to improved attendance of HCFs for maternal services. Research training equipped researchers with skill sets to identify and interrogate the maternal health issues and strategies for interventions. This significant change promoted the regional and district authorities to support CHWs community work further.

The EA-HPRO consortium also facilitated forums and engagement meetings where the research team met with policymakers. From these spaces, the researchers presented their findings and recommendations for policy influence.

Canadian University of Calgary **IRTs** facilitated the training of partners and health providers as facilitators who then trained the health care providers on HCFs simulation classes. Medical researchers from the Bugando Medical Centre facilitated training of partners and health providers as facilitators. These trained facilitators then trained HCWs in leadership and management.

Embedded DMs – the district medical officer was the embedded decision-maker. He offered technical guidance on facilitating managerial activities which improved leadership and supervision at HCFs. He also interceded on behalf of MoH and the office regional administrator of government authorities, the two ministries involved in the implementation of the research project. The embedded DM also linked researchers with stakeholders from different areas of the MoH, policymakers and clinicians.

The embedded decision-maker also ensured the research was in line with government priorities. Thus, he supported the project inception and contextually aligned the implementation at HCFs. Decision-making was improved through the involvement of policymakers throughout the whole process. Political leaders were invited during the hand-over process at the end of the project cycle and this significantly improved ownership of implementation practices. Thus, the involvement of district officials was crucial because it allowed the interventions to continue as district officers learnt how to extend simulation classes and HCFs management practices to all health providers who had not been trained by the research. At the community level, the research team's embedded DM was a critical access point between the researchers and the community members. As a result, the community members welcomed and supported the implementation of the research. The research involved community members which led to them to understand the purpose of the research and in turn, this strengthened their cooperation in the implementation process.

3.4.2 Other factors and actors that have influenced the outcomes

Other stakeholders also contributed to or influenced the realisation of the outcomes as follows:

1. The **regional commissioner** accepted the results and developed a district plan of action.
2. The **District health management team** conducted training of district officers in HCFs management and continue to sustain the results of the intervention. The district team participated in the consortium and the district counsel provided human resources. Further, engineers advised on infrastructural development on labour theatres construction.
3. The **District Technical team** provided technical assistance with every monthly meeting with nursing officers and clinicians mentoring them on how to carry on their duties.
4. The **MoH's director of reproductive and child health department** approved the adoption of simulation classes in HCFs in Sengerema District, University of Calgary Mbarara University and CUHAS.
5. **CARE international NGO** now coordinates health care providers for simulation training in the Mwanza region.
6. **University Institutions:** Bugando Medical Centre and its University of Health and Allied Sciences (CUHAS-BUGANDO) served as consultation centres and higher referral hospital in Lake Zone of Tanzania which provided technical team members for each component who collaborated with the lower-level health facilities in the zone by providing clinical guidance on maternal newborn and child health services, and also provided students to the research team for field practice in Misungwi and Kwimba districts.
7. **Women in the community** trusted CHWs to work with them throughout the project, providing a way to sustain the project.

3.4.3 Enablers and barriers to outcome realisation in the case study

Figure 5 below presents factors and actors that enabled or hindered the realisation of outcomes.

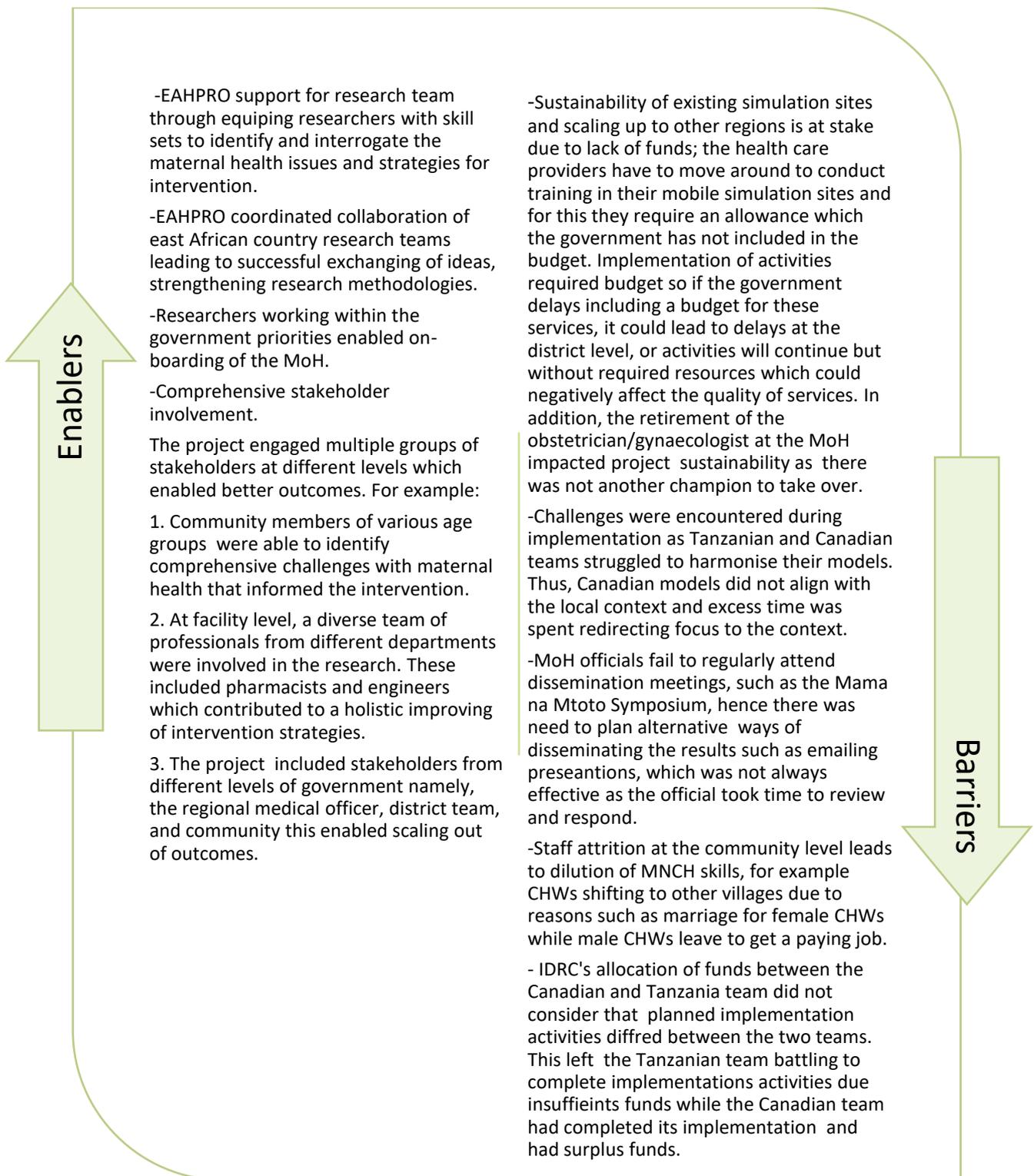


Figure 5: Case study 1 – Enablers and barriers to realising outcomes

Conclusions

This outcome story demonstrates that having credible evidence together with engagement with policymakers can result in system change and uptake of results. The research project's innovative implementations served as credible evidence for policy influence. The inclusion of a decision-maker in the research team throughout the research process proved to be an innovative approach that has positively contributed to the outcomes identified. In terms of the EA-HPRO support and contribution, the training provided by the consortium on communication for policy influence was critical for onboarding the ministerial officials. These skills were effectively used by the RTs in engagement spaces with policymakers where policy process changes were discussed. The EA-HPRO informed researchers on the national engagement strategy and this in turn strengthened public engagement processes. In addition, the quarterly forums the EA-HPRO arranged were instrumental in enabling researchers to share their experiences on what worked and did not work in maternal health programming. This led to strengthening research outcomes which propelled significant policy changes in MNH training.

Lessons learnt and recommendations

This section presents lessons learnt and practical recommendations drawn from the analysis of Case Study 1.

Lesson Learnt 1: Capacity-building by EA-HPRO for KT should be extended to all the members of the research team

The research team has not developed policy briefs because team members who were trained in policy brief development left the team. Training in research and KT ought to be recurrent throughout the project cycle to ensure that all members are trained. This is imperative in case of attrition as the remaining team members can still competently carry on with tasks required. Capacity-building should not be a once off event. Understandably, the EA-HPRO offers and continues to collaborate with teams, coaching and mentoring researchers to develop their KT products. However, part of this coaching approach should involve monitoring and ensuring that the research teams competently complete KT policy briefs product in time because some teams seem to lag behind due to lack of competency.

Lesson Learnt 2: To Strengthen the onboarding of decision-makers in policy processes as physical engagements with political figures and decision-makers are a critical part of the process

- Research results should continue to be disseminated to decision-makers through in-person policy engagement meetings facilitated by the EA-HPRO. Policymakers do not have time to regularly engage with reading papers due to other commitments. Physical spaces allow for an interactive process which policymakers find more convincing than reading.
- Alignment of research with government policy goals is critical to stimulate uptake for system change and this can only take effect if policymakers are fully engaged.
- Use of simple language to show the tangible benefits of the initiative when talking to political figures is imperative to keep them interested. This stimulates responsive decision-making.

Lesson Learnt 3: Policy shifts are highly dependent on the research approach and methodology

The Tanzanian MoH does not favour pilot studies as they are perceived to result in short-term policy shifts. Researchers therefore should present methodologies that prioritise policy scale up or conduct comparison studies to better inform the government. The EA-HPRO is therefore encouraged to ensure that researches methodologies are stringent in terms of scaling up.

4 Case study 2

Training health workers on Comprehensive Emergency Obstetrical care and Newborn Care post-training mentorship and support to increase community access to comprehensive care.

4.1 Context and background to this research team and project

Tanzania has two levels of HCFs: lower-level HCFs or clinics and the mid-level HCFs or small hospitals. Small hospitals are regional referral HCFs in peri-urban areas, while the lower-level HCFs, the focus of this case study, are situated in the rural districts. Lower-level HCFs are known to be under-resourced (Interview, Regional Officer, Tanzania, 2020). In Tanzania, only 12% of district HCFs are currently equipped to provide Comprehensive Emergency Obstetric and Newborn Care (CEmONC) services. As a result, women and newborn babies die due to difficulties in accessing CEmONC services. District HCFs are dispersed. There is at least one HCFs every 100 km but the state of the roads is poor (Concept Note for the Tanzania Research teams meeting report 1, 2017).

Based on this background, the research team, led by the Tanzania Training Centre International Health (TTCIH) in collaboration with Morogoro Regional Hospital and Dalhousie University, Canada, addressed gaps in health service delivery by training providers in life-saving interventions in emergency obstetric care. Wider adoption of these best practices, supported by e-learning, improved in-service education, coaching and mentoring could help Tanzania achieve its goal of increasing the number of health facilities providing CEmONC services (EA-HPRO Interim Technical Report, 2018)

The research gained approval from the MoH due to its alignment with the Tanzania 1 PLAN 2 government policy. This policy requires 50% of HCFs nationally to be ready to provide CEmONC services by the year 2020⁷. This research used the 'Three delays model' which proposes that pregnancy-related mortality is overwhelmingly due to delays in pregnant mothers: **(1) deciding to seek appropriate medical help for an obstetric emergency; (2) reaching an appropriate obstetric facility; and (3) receiving adequate care when a facility is reached**. Therefore, in response to these root causes of maternal deaths, the research implementation model assisted HCFs in rural areas to address delays 2 and 3. By tackling these two first, the research envisioned that by improving reach and adequate care, pregnant women would be drawn to using these facilities, which would inadvertently address delay 1. Thus, by decentralising maternal services, easy access would be improved, which in turn could encourage the decision to seek proper medical help. The risk factors of receiving adequate care were addressed through the upgrading of 360 HCFs and training health care workers on how to handle obstetric complications best. As such, quality of service provision in the HCFs, in turn, would reduce maternal and child.

Compared to the IMCHA initiative's three thematic areas that aim for improved **high-impact community-based interventions; quality of care at the facility level; human resources for health**, this research project addresses two thematic areas: **quality of care at the facility level** and **human resources for health**. Thus, the research project aimed to intervene in the improvement of MCH outcomes by strengthening the capacity and competence of health workers in the provision of

⁷ The United Republic of Tanzania Ministry of Health, Community Development, Gender, Elderly and Children the National Health Policy 2017.

CeMONG services. The research also focused on scaling up CeMONG services within Morogoro region and beyond.

4.2 Description of the research project and outcomes

4.2.1 Research design and objectives

The research began with proposal writing in 2015. This process also involved the selection of a decision-maker who would work with the team. The criterion for selecting the decision-maker was mainly based on his/her position in the government at the regional level. Following approval of the proposal, doctors from prominent institutions such as Morogoro regional hospital with wide experience in maternal health projects were involved in the project's design.

The research sought to achieve the following **objectives**:

- *To address gaps in health service delivery by training providers in life-saving interventions in emergency obstetric care as well as costing related inputs to provide such services.*
- *To provide sustainable structures by strengthening the leadership and management skills of health facilities managers.*

To date, the project has reached completion⁸ after presenting research evidence to MoH policymakers. Communication products in the form of a fact sheet and policy brief were used to engage with the policymakers on how implementations had affected maternal death reduction. The researchers conducted three main implementation activities namely: developing learning modules for the CeMONG curriculum, uploading stand-alone desktop computers at the HCFs and training health workers to use the e-learning platforms. The project also procured mobile phone handsets at HCFs for teleconsultation with higher-level health facilities. Then the project supported the HCFs with pharmaceuticals to supplement the supplies from the government. Research also conducted auditing of services needed such as capacity in c-sections, septimal indications, selection of anaesthesia etc. Although the research could not intervene on all issues due to financial constraints, the results of the audit informed the recommendations of proper care and health systems.

By the end of the project cycle, the research team realised that the Canadian team members had a surplus of funds while the Tanzania team members still had more tasks to fulfil but had run out of funds. There seems to have been a mismatch of allocation of budgets between the Canadian and Tanzania team members.

Role players

Table 4: Roles and responsibilities of key role players for Case Study 2

Stakeholders	Roles
EA-HPRO	Provided spaces in the form of conferences and meetings for researchers to share research ideas. EA-HPRO also provided researchers with training in qualitative research skills, qualitative data analysis and systematic reviews. Also, EA-HPRO conducted a workshop on KT which covered the use of social media and the development of communication products.

⁸ Due to COVID-19 pandemic regulations, the project cycle was extended from April 2020 to July 2020.

Stakeholders	Roles
Research teams	A multi-disciplinary research team (composed of obstetricians, paediatricians, anaesthesiologists and IT personnel from both sides (TTCIH and Dalhousie) executed research activities and presented a positive balance in qualitative, strong quantitative methods and expertise in medical curricula and training.
Embedded decision-maker	The decision-maker was involved in all processes of the research, from proposal writing, research conceptualisation and dissemination of findings. He also connected the research team with national and regional committees to present findings to these decision-makers.
Other policy actors	The MoH approved the implementation of research initiatives. CEmONC curriculum development advisors: National Council for Technical Education (NACTE), Association of Gynaecologist of Obstetrician of Tanzania (AGOT), Midwifery and Nurses Association (MNA), UNFPA, TTCIH, health care providers and trainers from various institutions were exposed to the curriculum for the first time and National Accreditors, accredited CEmONC courses in Tanzania.

4.2.2 What outcomes have been achieved

MCH issue

- Health care providers used the CEmONC curriculum, which was initially developed by the research and later adopted by the MoH. Consequently, CEmONC services provision in the Morogoro regional HCFs improved.
- As a result of the research, medical doctors from the Morogoro region trained others in the Simiyu region in the newly adapted CEmONC curriculum; these others included medical doctors, assistant medical officers, midwives and clinical officers.
- After research, the MoH extended the CEmONC curriculum to lower-level health providers in maternal care such as nurses. Thus, the curriculum was no longer restricted only to medical doctors and other higher-level clinicians.

Researcher understanding of MCH policy priorities and gaps

- Through the implementation of the 'Three Delays' model, the research team proved that by training in anaesthesia for a short time (3 months), the risk of maternal death is reduced.
- After the research, the MoH commissioned the research team to train associate clinicians and CHWs supporting them with supervision and mentorship at the HCFs.

Value (and utilisation) of evidence amongst policy/decision-makers

- Following the researchers' presentation of the research results and a CEmONC curriculum, which demonstrated the success of the research model, the MoH adopted and scaled up the CEmONC curriculum nationally. This curriculum, a product of the research, is now owned by the MoH and will be used by all health institutions in Tanzania.
- Unlike the previous curriculum, the newly adopted CEmONC curriculum now offers core modules on MCH and covers cross-cutting topics such as communication skills, information, technology and communication (ITC), infection prevention, ethics and professionalism.

4.3 Outcome analysis

This case study focuses on the outcome related to the level of value and utilisation of evidence to scale up policy. This is the highest-level outcome in terms of policy influence. To date, the research approach and methodology has been used to effect policy change and scale up services beyond the Morogoro region to the Simiyu region and other parts of Tanzania. The following section provides a detailed discussion of this outcome.

Outcome: The policymakers from MoH used research evidence to update the CEmONC curriculum, which is now used to train health services providers regionally and nationally.

Outcome statement

Before 2014, the health care staff undergoing CEmONC service training spent at least a year away from work. This impacted on effective employment of policies as HCFs were understaffed. Before the research, a curriculum in CEmONC services was not comprehensive or formalised, as such every institute used a different version of the curriculum. Also, CEmONC services training was only accessible to doctors. As training in CEmONC services lasted for at least a year, it left HCFs without the capacity to provide comprehensive care. Some institutions offered CEmONC training as refresher short courses, however, due to the lack of a standardised curriculum, the quality of the training was questionable. While some HCFs had improved infrastructure for CEmONC services, comprehensive services could not be conducted due to the lack of competent staff. Also, CEmONC services provision was restricted to only selected facilities nationwide.

In 2015, the national health policy (One Plan II – 2015 to 2020) envisioned improvement of reproductive and newborn health services in Tanzania. This policy planned that CEmONC services should be provided at HCFs level to reduce maternal mortality and morbidity. The research addressed this policy by developing a 3-month CEmONC curriculum. This training was conducted in three months so in facilities using this training curriculum, assistant clinicians and medical officers were trained to conduct surgery for pregnant women, anaesthesia and newborn care. Anaesthesia training previously lasted for over a year. The researchers produced a policy brief in 2019 to highlight the research results, which was presented to the MoH, which in turn inquired about the cost of adopting the new curriculum. However, the research had not factored the costs and so could not provide this information. The MoH, having seen the research results, requested the research team to share CEmONC curriculum with it and the MoH revised it with the help of major actors in MNCH such as the United Nations Populations Fund (UNFPA), NACTE, AGOT, Midwifery and Nurses Association (MNA), TTCIH, health care providers and national course accreditors in Tanzania. During this curriculum review and adoption, the Board of Anaesthesia was reluctant to adopt the 3-month training in anaesthesia as it perceived it to be too short.

The MoH developed trust in the research team's competence to communicate and articulate evidence. As a result, the MoH commissioned the research team to conduct a training of trainers at the Tanzania training centre. The research's demonstration of new ways of doing things led to the training of senior medical officials, senior midwives and obstetricians in various regions nationwide. This means that the research positively influenced the scaling up of services. Also, the MoH upgraded 360 HCFs having learnt from the evidence that for CEmONC services to take effect, improvement of infrastructure is also important. Moreover, rehabilitated health centres would have become white elephants if they had remained without staff able to implement CEmONC. So, this curriculum was an important aspect of improving services at the health facilities. Also, if the training of professionals had remained a year long, it would have meant waiting for 5 years until the

CEmONC services could be provided at the health centre. This improvement in HCFs will also mean that adequate human resources will be required to match the increased influx of pregnant mothers to CEmONC ready facilities.

Contribution

- The research team developed a condensed but comprehensive CEmONC services curriculum, implemented it and shared its results for policy influence with the MoH.
- The research team used KT skills to communicate evidence effectively. As a result, it gained support and participation from the MoH policymakers.
- The research team contributed to the scaling up of the CEmONC curriculum as it trained medical officers from across Tanzania after the end of the project cycle.

Verification

The gynaecology expert who contributed to developing the CEmONC curriculum reported that a comprehensive process had been involved in this curriculum development. Thus, the curriculum was reviewed by members of the board, national accreditation of courses in Tanzania and content experts before being declared a national curriculum. The embedded DM also verified facilitating the uptake of the results of the research CEmONC curriculum by the MoH. The DM also mentioned that part of the MoH adapting the curriculum was changing it from a 3-month to a 4-month long training. According to the regional officer, medical officers from the Simiyu region were first to use the curriculum after the MoH adopted it. Scaling up of the CEmONC curriculum now occurs every quarter in the districts all over Tanzania in HCFs with a CEmONC ready site.

Significance

This outcome supports IMCHA's goal of contributing to innovations for improved quality of care at the facility level, and improved human resources for health; and these have been scaled up. The government's response to the research evidence through the uptake of services at the national level is an effective way of responding to the 3-way risk factors of delayed health care service in the maternal health sector.

Outcome process

The following depicts a chain of steps of factors and actors that have contributed to the realisation of outcomes over the project cycle.

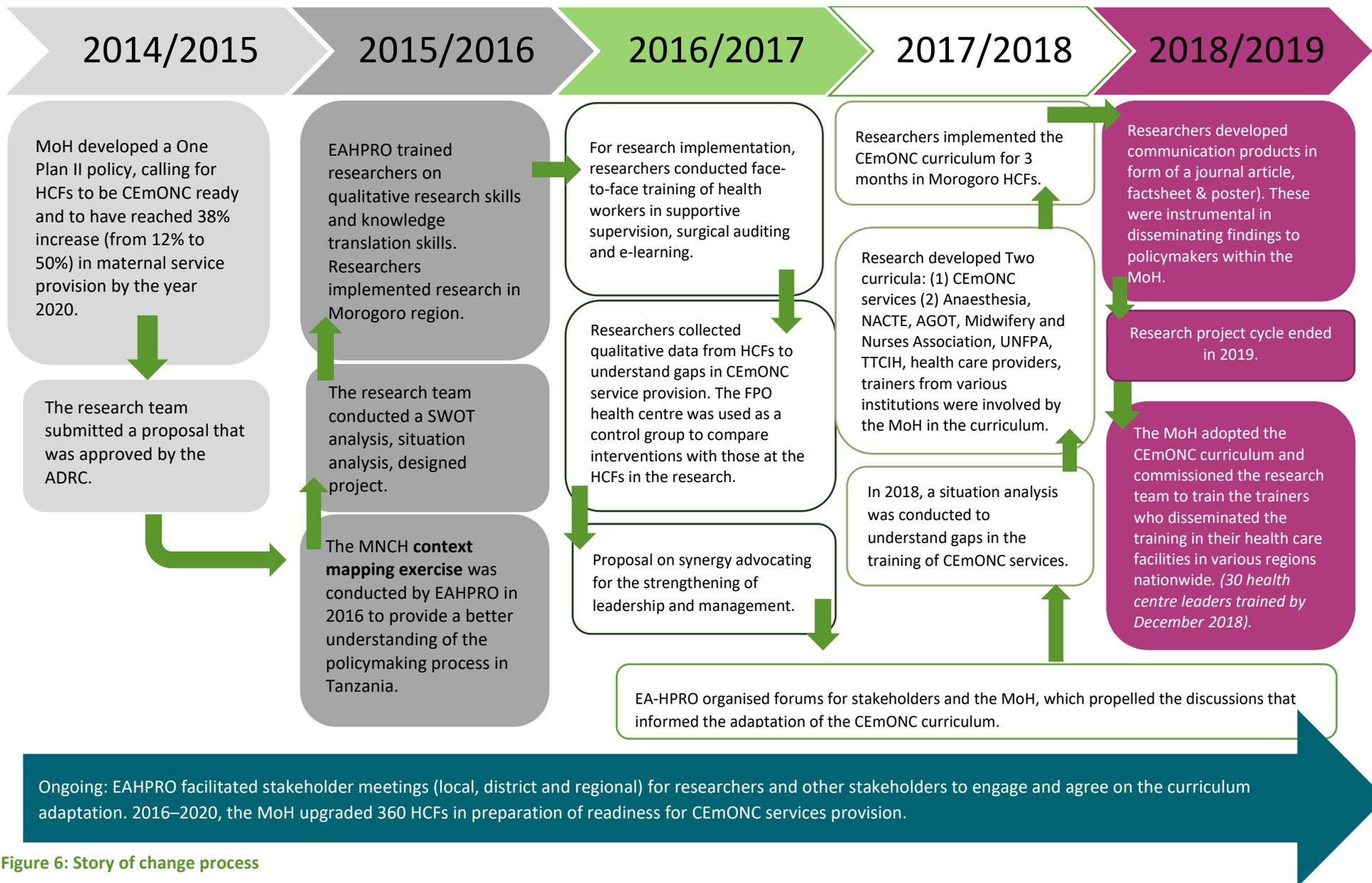


Figure 6: Story of change process

4.4 Contributing factors and actors to the outcome

4.4.1 Specific project interventions/actions IMCHA has contributed to the outcomes

EA-HPRO consortium

The MNCH **context mapping exercise**, which was arranged by EA-HPRO and conducted in 2016 provided researchers with a better understanding of the policy-making process in Tanzania, existing policies on MNCH as well as opportunities available for the IRTs and the EA-HPRO in creating awareness on IMCHA research as well as informing policy action. The EA-HPRO facilitated the research team's involvement with ministerial policymakers, leading to policy changes in terms of resourcing of HCFs and training of staff in CEmONC. Also, the EAHPRO's capacity-building equipped the research team with skills to collect and analyse research data. Also, researchers were trained in the communication of evidence and developing communication products and organising national meetings. The IDRC attended meetings, guiding the team on what to research. IMCHA also coordinated and financed the curriculum development process through the payment of logistical services for some curriculum developers.

Implementing research teams

Researchers were briefed on the situational analysis and SWOT analysis of the MNCH policy issues in Tanzania. After an overview of the global picture of the MNCH policy-making processes, especially the WHO theoretical models and frameworks for MNCH policy-making, the essential components of a good policy were reviewed and importantly how such policy should be developed.

The research team from Tanzania and Canada brought commitment, research skills and willingness to learn new ways, such as working with a decision-maker. Through the development of communication products in form of a poster, fact sheet and journal article, the team better conveyed important messages of the research results to policymakers.

The research team, under the commission of the MoH, trained two groups of mid-level medical officers as trainers on delivery of CEmONC services such as how to execute complicated procedures, surgeries and c-sections. Also, training was provided for anaesthesia to four district medical officers. During this implementation, the team engaged with officers from the MoH and decision-makers in the region.

During the implementation phase, the research model evidently showed that even by training in anaesthesia for a short time (3 months), the risk of maternal death was reduced. This was consistent with research conducted in other low-income countries. From these results, the MoH agreed to shorten the training to 6 months, rather than the typical five years it took to train anaesthetists. This would avoid delays in the provision of care. The MoH modified the anaesthetic model tested in the research, but still adhered to the principle of a shorter training model. Hence, the research team believed that it successfully achieved policy change.

Embedded decision-makers

Engaging the policymaker throughout the research process of research implementation and curriculum development helped realise the intervening aligned with government priorities. Thus, without the engagement and involvement from the start, it would have been difficult to understand the research aims and results.

4.4.2 Other factors and actors that have influenced the outcome

1. The researchers used the FPO health centre in Morogoro as a control group to compare HCFs CEmoNC services.
2. UNFPA, NACTE, AGOT, MNA, TTCIH, and National accreditation of courses in Tanzania supported the revision of the CEmoNC curriculum. UNFPA supported this change due to its significant involvement in innovative approaches in maternal health.
3. The relationship between the research team and the ministries made it easy to engage and intervene. The MoH approved the adoption of the CEmoNC curriculum, improving professional quality. The Ministry of Local Affairs, which is known as Regional Administration and Local Government, approved the research implementation.
4. Health facility workers agreeing to work in a more formalised manner led to successful implementation.
5. The MoH was ready to adopt new health approaches and adjust the policy (CEmoNC ready facility rehabilitation) according to the vision of improving maternal health by 50% target in 2020.
6. Involvement of the beneficiaries, ie owners of the facilities, for supervision and mentorship by regional health management teams of nursing officers improved buy-in and commitment.
7. Political will or pressure: there had been a call for the need to improve maternal health services, therefore, the government was under pressure to respond to this urgent call to show the public that it does act according to its policies. The current MoH has increased the budget in the health sector over the years from 30 billion shillings to 200 billion shillings (from 2016 to date). This research will be released in time for political elections in October 2020 which will act in the MoH's favour.

4.4.3 Enablers and barriers to outcome realisation in the case study

Figure 7 below presents factors and actors that enabled the realisation of outcomes. Barriers or challenges to the realisation of the outcomes are also outlined below.

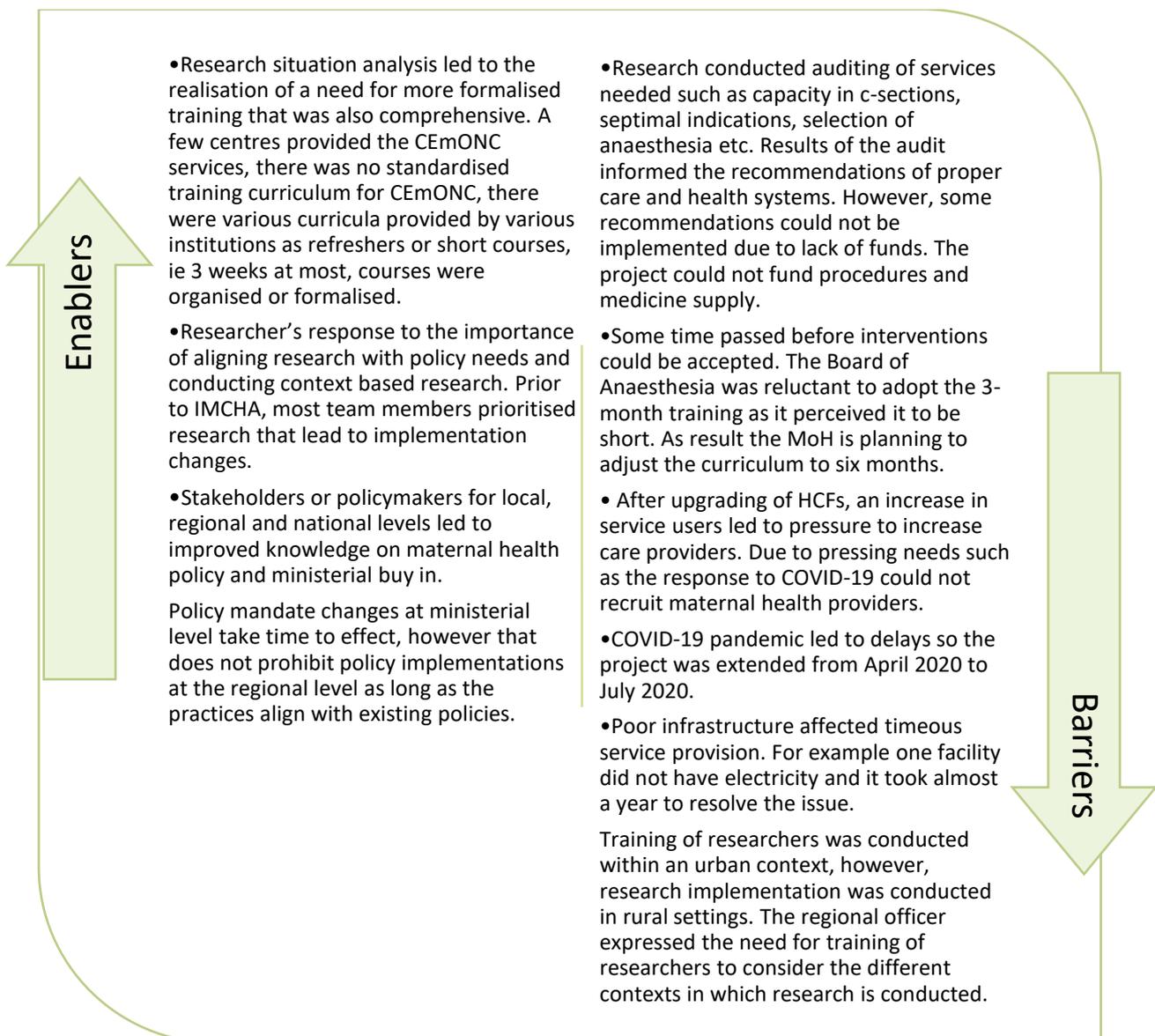


Figure 7: Case Study 2 – Enablers and barriers to achieving the outcomes

4.4.4 Conclusions

This IMCHA project outcome benefited from the EA-HPRO design model of the embedding the decision-maker throughout the research process. This was effective in achieving policy influence. Evidence was credible to policymakers because implementation had taken place in the same context where the MoH intended to increase CemNOC services. Moreover, the communication products steered policy changes due to the team’s ability to communicate findings.

4.4.5 Lessons learnt and recommendations

This section presents lessons learnt and practical recommendations drawn from the analysis of case study 2.

Lesson Learnt 1: Strengthening of research skills should involve costing of interventions

The following is recommended to support this:

- The government is highly likely to respond to policy change recommendations that demonstrate upfront exact cost implications. As such, the EA-HPRO is encouraged to ensure that it accepts research designs with clearly defined costings of interventions. Additionally, assisting the research team with sourcing experts in the subject could enable teams to indicate cost implications which can then be presented to the government decision-makers. This will in turn improve scaling up of services by the government.

Lesson Learnt 2: Advocacy is an important component of a policy change

The following is recommended to support this:

- As mentioned by the regional officer, uptake of policy changes at the national level takes time. During implementation, research has to instigate a strategy to strengthen the component of advocacy and policy change. This has to be done to equip district and regional offices with advocacy skills for these levels to take up policy processes to the ministry or national level. Following the end of the project cycle, the district and regional officers can continue to influence change using communication strategies and policy briefs; doing this will likely influence change in the country.

Lesson Learnt 3: Research Capacity Building Should Be Aligned to the Context of the Implementation

The following is recommended to support this:

- Researchers execute their research in rural areas, but they are trained under urban circumstances. There is a need to equip researchers with the ability to adapt their skills to the various contexts in which they work.

Lesson Learnt 4: Provision of Funding to Support the Scaling Up of Research Impact.

The following is recommended to support this:

- A number of recommendations emerged out of the research that could not be implemented due to a lack of budget. This is a common barrier to the uptake of research evidence. Funders could consider providing an additional budget to promote uptake, or policymakers should be encouraged to commit to allocating budget for scaling if the results are identified as having a significant positive impact on health care.
- As the project neared the end of the cycle, the Canadian team had a surplus of funds while the Tanzanian team, which has more tasks to fulfil, had run out of funds. Project budgets have to be equally allocated between the Canadian and Tanzanian teams. Considering that the Tanzanian team works on the ground and is more involved than the Canadian counterparts, funds should allow Tanzanian members to conduct their allocated tasks.

5 Overall conclusion and recommendations

MCH is one of the measures of quality of health provision in any country, and the death of the mother and a child has an impact on the next generation. The health providers are the anchors in the prevention of death in maternal cases so once they are trained on the job and equipped with knowledge, and their skills are sharpened, they can better provide services. These projects have proven that turnaround for maternal health can be sped up through the use of innovation, combining research with implementation and close relationships with the policymakers. Moreover, the projects worked in the most remote areas using the readily available resources and showed significant results in those facilities.

Appendix 1: List of documents reviewed

- EA-HPRO Interim Technical Report – October 2019 IMCHA (EA-HPRO e Annual Report, Nov 2018–Nov 2019)
- Innovating for Maternal and Child Health in Africa (IMCHA) Annual Technical Reporting Format and Guidelines for Health Policy and Research Organisation (EA-HPRO_Annual Report_October 2017_Final)
- EA-HPRO Interim Technical Report – October 2018 IMCHA (EA HPRO_Annual Report_October 2018_Final submitted)
- IMCHA Annual Technical Reporting Format and Guidelines for Health Policy and Research Organisation (EA-HPRO Annual Report_Nov 2016)
- The IMCHA project initiative model (EA_HPRO Model)
- Innovating for Maternal and Child Health in Africa (Profile of research work supported by the IMCHA initiative in Tanzania)
- Concept Note for the Tanzania Research teams Meeting_1
- EA-HPRO Regional and National Engagement Strategy IMCHA Initiative – October 2017 (Country specific strategies for EA_HPRO.doc_Final)
- Lessons Learnt: Engaging policymakers to enhance evidence use – a case study of Tanzania
- Innovating for Maternal and Child Health in Africa Initiative Report on Discussions with Tanzania Research Teams on Scale up and Project Review Convened by the EA-HPRO on May 16-17, 2019, Dar es Salaam, Tanzania (Researchers meeting in Tanzania May 2019)
- The Innovating for Maternal and Child Health in Africa (IMCHA) Program Tanzania IRTs National meeting June 28-30, 2017 Dodoma, Tanzania Report IRTs (Tanzania IRTs National meeting Report)
- Tanzania Situational Analysis Report 2017