



# Evaluation Report

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**AN EVALUATION OF THE ESTABLISHMENT OF THE  
MAKERERE UNIVERSITY CENTRE OF EXCELLENCE FOR  
MATERNAL-NEWBORN HEALTH RESEARCH IN UGANDA**

October 2017

# Evaluation Report

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## Acronyms and Abbreviations

AOGU	Association of Obstetricians and Gynaecologists of Uganda
CMNHR	Centre of Excellence for Maternal-Newborn Health Research
EQUIST	Equitable Strategies to Save Lives Tool
HPPM	Health Policy, Planning and Management
LiST	Lives Saved Tool
MaKSPH	Makerere University School of Public Health
MANEST	Maternal and Neonatal Implementation for Equitable Systems study
MNCAH	Maternal, newborn, child and adolescent health
MNH	Maternal and newborn health
MoH	Ministry of Health
NGO	Non-Governmental Organisation
RefNet	Referral Network
SNL	Saving Newborn Lives
UN	United Nations
UNEST	Uganda Newborn Study
UPA	Uganda Paediatric Association

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**Full evaluation report** with specific recommendations for Uganda's CMNHR available at [www.healthynewbornnetwork.org/resource/CMNHRevaluation](http://www.healthynewbornnetwork.org/resource/CMNHRevaluation)

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## Executive Summary

### Background

In 2013, the Makerere University School of Public Health (MakSPH), together with Save the Children's Saving Newborn Lives program (SNL) in Uganda, established the Makerere University Centre of Excellence for Maternal-Newborn Health Research (CMNHR). The purpose of establishing the CMNHR was to strengthen the links between knowledge, policies and implementation of MNH programs through generating local evidence based on local priorities that could support the implementation and scaling up of MNH services.

This report summarises an evaluation of the CMNHR undertaken by Save the Children in 2017 to understand how it was established, assess its core activities, and describe its plans for sustainability.

### Evaluation Methods

The evaluation aimed to generate lessons learned from the process of its establishment and efforts to improve sustainability as well as to analyse the CMNHR's performance to date. The evaluation questions were as follows:

- What was the process by which the CMNHR was established?
- To what extent has the CMNHR been successful in achieving its objectives to date?
- What efforts have been made to ensure the CMNHR's sustainability?

The qualitative evaluation, undertaken in July–August 2017, had two phases: (1) a desk review of CMNHR documents and (2) 13 key informant individual in-depth interviews (IDI) considering of three with CMNHR staff; 10 with external key stakeholders. We obtained written voluntary informed consent before conducting each of these in-depth interviews, and all responses were confidential. Inductive and deductive coding captured themes of interest as well as emerging issues. The evaluation received ethical clearance from the Makerere University School of Medicine Research and Ethics Committee and the Save the Children—US Ethics Review Committee.

### Findings

Since 2013, the CMNHR core team has grown from three to five secretariat staff plus 10 field staff working on various projects. The CMNHR started as and remains part of the Department of Health Policy, Planning and Management (HPPM) in MakSPH, under the management of the Head of Department, the Dean of MakSPH, and its board. Support from the MakSPH, especially from the Dean, helped to facilitate its establishment. The CMNHR uses the same financial system and same rules and regulations as MakSPH, but it can make many decisions on its own. Nonetheless, the CMNHR acknowledged the existence of some bureaucratic challenges, especially with regard to finding office space and financing. There is currently no external advisory board or steering committee overseeing and providing guidance to the CMNHR beyond the MakSPH system.

The CMNHR consulted with similar centres and institutions globally and within Uganda to learn how these institutes function and sustain. The CMNHR reportedly works with Ministry of Health (MoH) and other MNH-related partners through the National Newborn Steering Committee. The founding director of the CMNHR is a local, qualified, well-known, passionate champion. Individuals at Save the Children (in Uganda and abroad) and the Karolinska Institutet were also identified as playing critical roles in supporting and advising the establishment and sustainability processes.

The perceived purpose of establishing the CMNHR was to strengthen local researchers in MNH, centralise MNH related research and raise more attention regarding the issue. A CMNHR staff members reported that the CMNHR had evolved from focusing only on MNH to include child and adolescent health. Many partners felt that the CMNHR had a strong "N" component of MNH but needed to do more on maternal health. The initial three-year investment of sustained funding from Save the Children was seen as enabling the CMNHR to undertake a step-by-step process toward its establishment; however it took time to start and build a positive reputation to secure additional funding.

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The evaluation assessed the extent to which the CMNHR has been successful in achieving its initial objectives. The findings are in accordance with the main objective areas: knowledge management and dissemination, technical capacity and the research agenda. The CMNHR is best known for its online platform engagement, such as its website and a bimonthly newsletter sent to 1,500 individuals. However, the CMNHR does not have a communication strategy, limiting its ability to effectively target and engage different audiences. The CMNHR staff has become expert in relevant MNH tools for program managers and implementers, and it has facilitated training of 80 individuals within and outside Uganda on the Lives Saved Tool (LiST) and 26 Ugandans on the Equitable Strategies to Save Lives (EQUIST) tool. Through various research projects, the CMNHR has led extensive clinical trainings on MNH care and on hospital leadership staff and partners acknowledged that one-time trainings are not sufficient on their own to achieve effective and sustainable practices. CMNHR also has engaged in the development, adaptation and promotion of multiple tools and innovations. Partners interviewed had differing perspectives on whether the CMNHR had undertaken appropriate consultation with stakeholders in the development of these tools and curricula. The capacity building of young Ugandan researchers has been successful, with 15 post-graduate students benefiting from grants to support their research across multiple disciplines. The CMNHR has been involved in 12 research projects and has published 33 unique peer-reviewed articles. In addition, the CMNHR led a systematic, transparent and consultative process to develop a national newborn research agenda, identifying the top 15 research questions for prioritisation.

Although these activities alone will not result in improved MNH outcomes, they are necessary steps towards improving and using locally generated evidence and knowledge to influence policy and practice. Planning for sustainability beyond Save the Children's catalytic funding was evident through efforts to institutionalise within the MakSPH structure, including shared overhead costs, use of the same financial administration structure for both CMNHR and MakSPH, and internal meetings on how to sustainably anchor CMNHR in MakSPH. Additionally, the CMNHR has secured new funding through other donors and implementing partners. Although the CMNHR has not yet finalised a strategic plan, communication strategy or business plan, these processes have been initiated.

## Key Recommendations

1. Strengthen the CMNHR by establishing an external expert advisory board, finalising a strategic plan that includes a robust communication strategy, and developing a business plan to attract more funding.
2. Strengthen stakeholder engagement and information-sharing mechanisms to showcase the multi-disciplinary approaches employed by CMNHR and to address common misconceptions about it, such as that it does only clinical research or focuses only on newborn health.
3. Popularise the national newborn research agenda, especially to key agencies and the MoH.
4. Continue to strengthen, promote and invest in the online system to disseminate information, especially to reach more Ugandans.
5. Further institutionalise the CMNHR at MakSPH through intentional engagement with other technical departments.
6. Identify and undertake innovative approaches to incorporate local evidence into policy through strategic advocacy and buy-in from key players, especially within the MoH and through the National Newborn Steering Committee.

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## Key Lessons Learned

The evaluation of CMNHR identified key lessons about establishing and sustaining a centre of excellence for MNH research. These lessons should be considered by stakeholders who wish to start, strengthen or invest in a centre of excellence for MNH research.

- **Key individuals and institutions involved in setting up the CMNHR influence the ability to establish and sustain the CMNHR:** The CMNHR was founded by a local, qualified, well-known, and passionate champion, with support from leaders at the MakSPH. The CMNHR received guidance and mentorship from well-established centres and experts in the field. The ongoing support received from MakSPH facilitated setup and ensured respect from partners.
- **Demand and need for a centre of excellence:** The CMNHR filled a perceived gap in Uganda for knowledge management and dissemination, research and capacity building in maternal and newborn health.
- **Catalytic funding:** The CMNHR benefited from a three-year investment from Save the Children and harnessed funding from research projects, enabling a strong foundation.
- **Recognition that it takes time to set up a centre of excellence:** Bureaucratic barriers delayed some activities, and it took time to build rapport and deliver on objectives so as to build visibility and firmly establish the CMNHR's value.
- **Intentional and continuous engagement with key stakeholders supports achievement of objectives:** Engagement with MoH, MakSPH, and professional associations and implementing partnerships has been central to the CMNHR's achievements and at the forefront of some of their challenges. Regular visibility through continuous communications, e.g. the newsletter and participation in meetings, ensured that partners knew about the CMNHR; however, this interaction was not sufficient to translate evidence into policy and practice.
- **Flexibility to grow in capacity and scope:** Over the initial three-year period, the CMNHR staff capacity grew (in both numbers and capacity), took on new projects, and expanded their scope from MNH to maternal, newborn, child and adolescent health.

The CMNHR provides an example of how a centre of excellence for MNH research can contribute to strengthening information, research and capacity building. With supportive individuals and institutions, appropriate investment, and buy-in from key stakeholders, a centre of excellence has the potential to contribute to evidence-based knowledge, policy and effective implementation at scale.



## Introduction

### Background

Understanding how to bridge the gap from knowledge to policy to implementation has been a growing priority in global health.<sup>i</sup> The number of studies conducted by local researchers and institutes in low- and middle-income countries remains low, even though these countries bear the highest burdens of disease,<sup>ii</sup> including those related to maternal and newborn health (MNH). Challenges facing research capacity development in the Ugandan context include limited opportunities for individualised training, lack of research groups, absence of postdoctoral training and funding, weak infrastructure, limited mobility of researchers and inadequate national funding for research.<sup>iii</sup> Strengthening health research capacity and knowledge management in low- and middle-income countries has become a recognised way to advance health and community development.<sup>iv</sup> Numerous approaches to strengthening capacity exist at different levels, including training of individuals, improving research systems within institutions, and international collaborations among national health research agencies.<sup>v</sup> However, systematic evidence of the effectiveness of different approaches remains limited, as their complexity and diversity make monitoring difficult.<sup>vi</sup>

In Uganda, 42 percent of child deaths occur during the neonatal period, the first month of life,<sup>vii</sup> with many women and children continuing to die from complications in pregnancy and childbirth. Each day there are 17 maternal deaths, 94 stillbirths and 110 neonatal deaths.<sup>viii</sup> Well-known, evidence-based interventions to prevent these deaths already exist but are not implemented optimally. One major gap is a lack of understanding of how to bridge the knowledge-policy-implementation gap. Current implementers in Uganda are a mix of government, the private sector and NGOs. However, applying knowledge and evidence to everyday practice so as to save mothers and newborns remains challenging, as most of this evidence is borrowed either from the West or from Asia, whereas the health systems and cultural context in Uganda and other African settings are often very different. Therefore, there is a need to generate evidence driven and shaped by local demand for knowledge so as to guide implementation and scaling up of newborn care.

Universities are often perceived as well placed to generate evidence and to build capacity, but validation of this assumption is limited. Universities should work closely with government and other partners in developing policies, generating evidence, evaluating interventions and disseminating best practices; however, this does not always happen. Makerere University College of Health Sciences has been at the forefront of evidence generation and capacity building, albeit with various barriers.<sup>ix</sup> It has conducted various types of research, including epidemiological, discovery and implementation research. Yet the area of maternal and newborn health was weak and uncoordinated, partly due to the lack of a local research agenda and poor support for capacity-building efforts.

To address this problem, Makerere University School of Public Health (MakSPH) together with Save the Children's Saving Newborn Lives program (SNL) in Uganda established the Makerere University Centre of Excellence for Maternal-Newborn Health Research (CMNHR) in 2013. The CMNHR was established to work towards bridging the gap between knowledge, policy and implementation of maternal and newborn health programs and to facilitate a scaling up of quality newborn care suitable for the Ugandan context. The need to generate evidence driven and shaped by local demand for knowledge to guide implementation and scale up of Newborn Care was the main force behind the creation of CMNHR.

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## Goal and Objectives of the Makerere University Centre of Excellence for Maternal-Newborn Health Research

The CMNHR's overall goal is to mobilise existing and external efforts and resources in maternal and newborn health research, information and knowledge sharing so as to inform efforts towards evidence-based policy making, design and implementation of interventions at scale in Uganda and neighbouring countries. The CMNHR operates as a knowledge management arm for the National Newborn Steering Committee to meet the desire for increased access to reliable knowledge and information that can stimulate action and improved service delivery. The CMNHR's strategic focus is to create a maternal and newborn health knowledge and information hub and create opportunities for evidence-informed policy making in Uganda.

The objectives of the Makerere CMNHR are as follows:

1. To develop and monitor implementation of an evidence-based national maternal and newborn health research agenda in Uganda
2. To strengthen internal and external technical capacity in maternal and newborn health in Uganda
3. To strengthen maternal and newborn health knowledge management and information dissemination efforts in Uganda

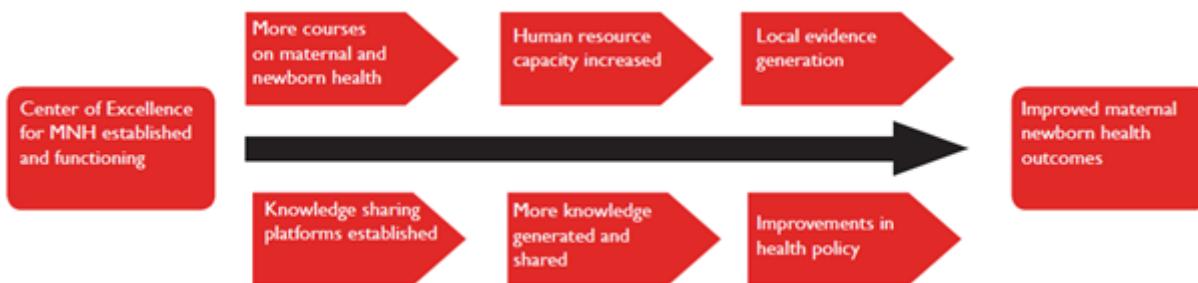
SNL in Uganda is a known leader in newborn health programming, advocacy and planning support. The connection that SNL provides to both local and global knowledge and to the latest medical evidence is seen as particularly valuable by in-country partners, as is SNL's role as a facilitator and organiser. Since 2006, the program has had close relationships with the Ministry of Health (MoH), MakSPH, professional associations, development partners including UN agencies, and civil society organisations. Translating the favourable policy environment into district-level implementation and high-quality services has been SNL's priority in order to achieve effective service delivery at scale.

As part of the initial three-year investment, an evaluation of the CMNHR was conducted to understand establishment processes, activities and key contributions to date, and sustainability plans after initial funding ends in late 2017. The evaluation analysed performance to date and generated lessons learned that can contribute to the CMNHR's improvement and sustainability.

### Conceptual Framework:

CMNHR's establishment was based on the hypothesis that the presence of a centre of excellence leads to the availability of more courses that will strengthen the skills of health workers and researchers, establish knowledge-sharing platforms, allow more local knowledge to be generated and shared, result in more robust policies based on local evidence, and ultimately improve MNH outcomes (Figure 1). Although the evaluation was not designed to test this hypothesis specifically, it examined the extent to which processes were put into place to achieve the outcomes of interest.

**Figure 1. Conceptual framework showing how a centre of excellence leads to improved MNH**



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## **Evaluation Objectives:**

The primary objective of this study was to evaluate the CMNHR's progress to date in order to inform actions to improve and sustain the CMNHR after the SNL program ends in 2017. The specific objectives of the proposed study included the following:

1. To document the steps involved in establishing the CMNHR
2. To assess the extent to which the CMNHR has been successful in achieving its initial objectives
3. To document efforts to date to make the CMNHR sustainable
4. To provide recommendations to help the CMNHR improve its performance and strengthen sustainability efforts

## **Evaluation Questions:**

1. What was the process by which the CMNHR was established?
2. To what extent has the CMNHR been successful in achieving its objectives to date?
3. What efforts have been made to ensure the CMNHR's sustainability?

## **Methodology**

A qualitative evaluation included desk review of documents and reports on activities, in-depth interviews with the CMNHR's workers, and key informant interviews with relevant stakeholders such as MoH, professional organisations and other stakeholders.

### **Data Collection**

The data collection team received two days of training that included an overview of the evaluation and its objectives, skill building in data extraction from documents, and instruction on transcription and capture of information.

The desk review (see **Table 1**) captured information on past and current processes related to CMNHR plans, actions and products (Appendix 2). Reviewed documents included:

- a. Quarterly reports
- b. Contractual scope of work
- c. Event documentation
- d. CMNHR's newsletter
- e. Draft CMNHR strategy
- f. Course schedules, syllabi and student lists
- g. Lists of products
- h. Conference schedules and attendance lists
- i. Research prioritisation documentation
- j. Website use documentation
- k. Meeting minutes

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**Table 1: Desk Review Outputs and Their Relationship to Evaluation Questions**

Evaluation Question	Desk Review Outputs
<b>What was the process by which the CMNHR was established?</b>	Timeline of key events and activities, including but not limited to staff hiring and board meetings
<b>To what extent has the CMNHR been successful in achieving its objectives to date?</b>	Deliverables from years 2014-2017 mapped to CMNHR objectives; Itemised list of number and type of platforms, including courses, established to strengthen access to knowledge; list of types and numbers of users, by platforms established; list of external and internal products developed
<b>What efforts have been made to ensure the CMNHR's sustainability?</b>	Describe CMNHR structure and how it is linked to and supported by other structures within the university (plans to sustain the CMNHR); develop timeline of key events and activities, including but not limited to new staff and funding

This evaluation used purposive sampling to reach information-rich respondents; it also used maximum variation sampling to get at different facets of MNH information until saturation was reached. For the in-depth semi-structured interviews, two interview guides were developed and pre-tested; interviews were conducted in July and August 2017. Individuals directly involved in the establishment and implementation efforts of the CMNHR, including CMNHR staff, relevant Save the Children staff, and members of the CMNHR governance board were selected. In addition, key national-level stakeholders in MNH in Uganda who would be the primary beneficiaries of the CMNHR were approached for interviews. These included members of academics institutions, government officials, implementing partners, professional associations and others. See Table 2.

**Table 2: Key informant interviews**

Who	Number approached	Number interviewed
<b>Direct CMNHR stakeholders</b>	7	5
<b>Other national stakeholders</b>	9	7
<b>TOTAL</b>	18	14

The interviews were based on the following areas of inquiry:

1. CMNHR Interview Guide (CMNHR staff, Save the Children Uganda staff involved in setting up CMNHR):
  - Process used for the establishment of the CMNHR; key facilitating factors, challenges experienced and how they were resolved; external and internal support provided.
  - Perceptions of the extent to which the CMNHR has achieved its objectives, along with the barriers and enablers that influenced that success.
  - Recommendations for next steps for the CMNHR, including future vision and plans for sustaining and improving the CMNHR.
2. MNH Interview Guide (key national-level stakeholders):

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Perceptions of the CMNHR's contributions to Uganda's MNH community to date

Perceptions of the extent to which the CMNHR has achieved its objectives, along with the barriers and enablers that influenced that success

Recommendations for next steps for the CMNHR, including future vision and plans for sustaining and improving the CMNHR.

## Data Analysis

Using Microsoft Word, data from in-depth interviews were coded using both inductive and deductive approaches. Codebooks were developed a priori for deductive codes; these were predetermined by the evaluation questions (See **Appendix 2**). The interview texts were read many times to identify other codes (inductive coding) and these were added as additional themes or subthemes. Code determination was discussed between the Principle Investigators and other researchers. Five researchers (SO, RM, JA, GK, and JBK) coded one transcript together to become familiar with the process and achieve consensus on coding styles. Afterwards, separate coding and comparison were done to ensure inter-rater reliability. Complete coding and analysis was done by six researchers (SO, RM, JA, GK, JBK and MK).

## Ethical Considerations

Ethical clearance was obtained from the Makerere University College of Health Sciences School of Medicine Research and Ethics Committee, and also from the Save the Children—US Ethics Review Committee. Voluntary, written informed consent was secured from all participants and assurances of confidentiality were provided before the interviews began. The data collection team handled records and engaged with key informants with respect and confidentiality. All transcripts were stripped of identifiers such as individual and organisational names prior to data analysis to ensure that confidentiality would not be breached.



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## Findings

### The Process of Establishing, Operating and Sustaining the CMNHR: Why was the CMNHR established?

The concept of the CMNHR was reportedly initiated in 2013 as part of future planning for advancing newborn health in Uganda. The increased attention and political priority given to newborn health following Saving Newborn Lives 2 and the Uganda Newborn Study (UNEST) led to discussions within the national newborn steering committee, notably between MakSPH and Save the Children, on the establishment of a centre of excellence for MNH. The desire was to create a centre similar to those for other issues, such as HIV, by building on existing work being done already on MNH at MakSPH.

*"We used the opportunity of Uganda Newborn Study 2 to build a pool of national and maybe sub-regional researchers. ... And when the Ugandan Newborn Study ended ... [we applied] for additional grants because every research project opens up an opportunity. We used this experience and also the gaps identified to apply for more money. Remember, we were working with many people; we had Karolinska, we had Save the Children. It was basically Karolinska and Save the Children but other people came on board. So within that, we saw that the capacity was growing." (IDI, MakSPH)*

*"My understanding is that the Centre was established to draw attention to an area that is very critical, in terms of reducing maternal, neonatal and child health morbidity and mortality, an area that had been really neglected for a while. ... This [Centre] is supposed to draw attention to this area and also provide input into it by creating the improvements that are desired." (IDI, key stakeholder)*

The Uganda Newborn Study 2 (UNEST 2) offered an opportunity to build a pool of national and sub-regional researchers and implementers. Other opportunities included seeing a growing number of scientists embedded to do master's and PhD study within Uganda as well as in other countries abroad, notably Sweden and a few other European countries. At the end of SNL 2, MakSPH discussed with Save the Children how SNL 3 could provide catalytic support in Uganda to establish this Centre of Excellence and harness the already-built capacity of researchers who had emerged in doing master's and PhD degrees related to newborn health.

*"So in other words the Uganda Newborn Study, which was an initial investment by Save the Children and GIST Foundation, produced the Centre, and it sort of came up naturally. We came up with a concept, which we discussed here in the School. We also discussed it with Save the Children and other people, and we saw a niche and an opportunity; that was to build capacity for maternal, newborn and child health. We started with maternal and newborn care, but now we have evolved into a centre for maternal and newborn care and child health." (IDI, MakSPH)*

*"I think it was created as a centre that can identify critical issues for research in maternal and newborn health (MNH) at the School of Public Health, an avenue to focus on; and to inform policy, after the MDGs agenda rhetoric had not done well, or as expected. There was need for a change in approach to focus specifically on MNH." (IDI, partner)*

*"There was a gap, I mean you could not find one particular place with all the maternal and newborn knowledge in Uganda. We saw that this was a gap and that we could fill it. This led us to develop the Centre. Of course, if there had been no funding, it would have been quite difficult to start the Centre's activities, so with funding from SNL things were easier." (IDI, MakSPH)*

#### **CMNHR structure and accountability:**

The CMNHR secretariat staff comprises five full-time employees, a postdoctoral fellow and over 10 field staff consisting of medical doctors, gynaecologists, paediatricians, statisticians and social scientists working on the research projects. The CMNHR secretariat staff includes a director, centre coordinator, assistant coordinator, communication officer, and finance and administrative person. The secretariat connects with the MakSPH levels and units. The CMNHR offices are

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housed separate from the main MakSPH campus, an arrangement that has hindered collaboration with MakSPH. Figure 2 shows the structure of the CMNHR leadership.

The centre coordinator is primarily responsible for day-to-day administration of the CMNHR. The Director is involved in financial decisions. Beyond the Director, the CMNHR remains answerable to the School of Public Health administration: the Head of Department, then the Dean at the apex since this is one of the Units in the School of Public Health, directly under the College of Health Sciences and, finally, Makerere University's overall administration. In particular, the CMNHR is hosted in the Department of Health Policy, Planning and Management (HPPM) in MakSPH, under the management of the Head of Department of HPPM, the Dean of the SPH, and its board. The basic reporting structure currently is composed of the MakSPH, its board, the host department and the secretariat; in fact, the governance structure goes upwards from the SPH to the College and ultimately to the University Senate, the highest body of governance. "So whatever we do must be in that line" (IDI, MakSPH).

The CMNHR uses the same financial system as MakSPH systems. All finances go through the same finance and management unit (or FMU) that is in charge of all the money that comes into the School. This means that the CMNHR is enshrined within and is part of the SPH system. However, 30% of overhead costs from the CMNHR's funding of MakSPH goes back to CMNHR for its own overhead costs. In terms of financial processing, the CMNHR Director initiates a request, which goes to the Head of Department, then to the School, to the College and finally to the University administration, which provides overall supervision.

The secretariat staff appreciated that Makerere University permits the CMNHR to make many decentralised decisions under its supervision, within the University's rules and regulations. Another interviewee expressed the view that the CMNHR was a "child" of the School of Public Health, especially with regard to its hosting the CMNHR, and more specifically for maternal and newborn health research.

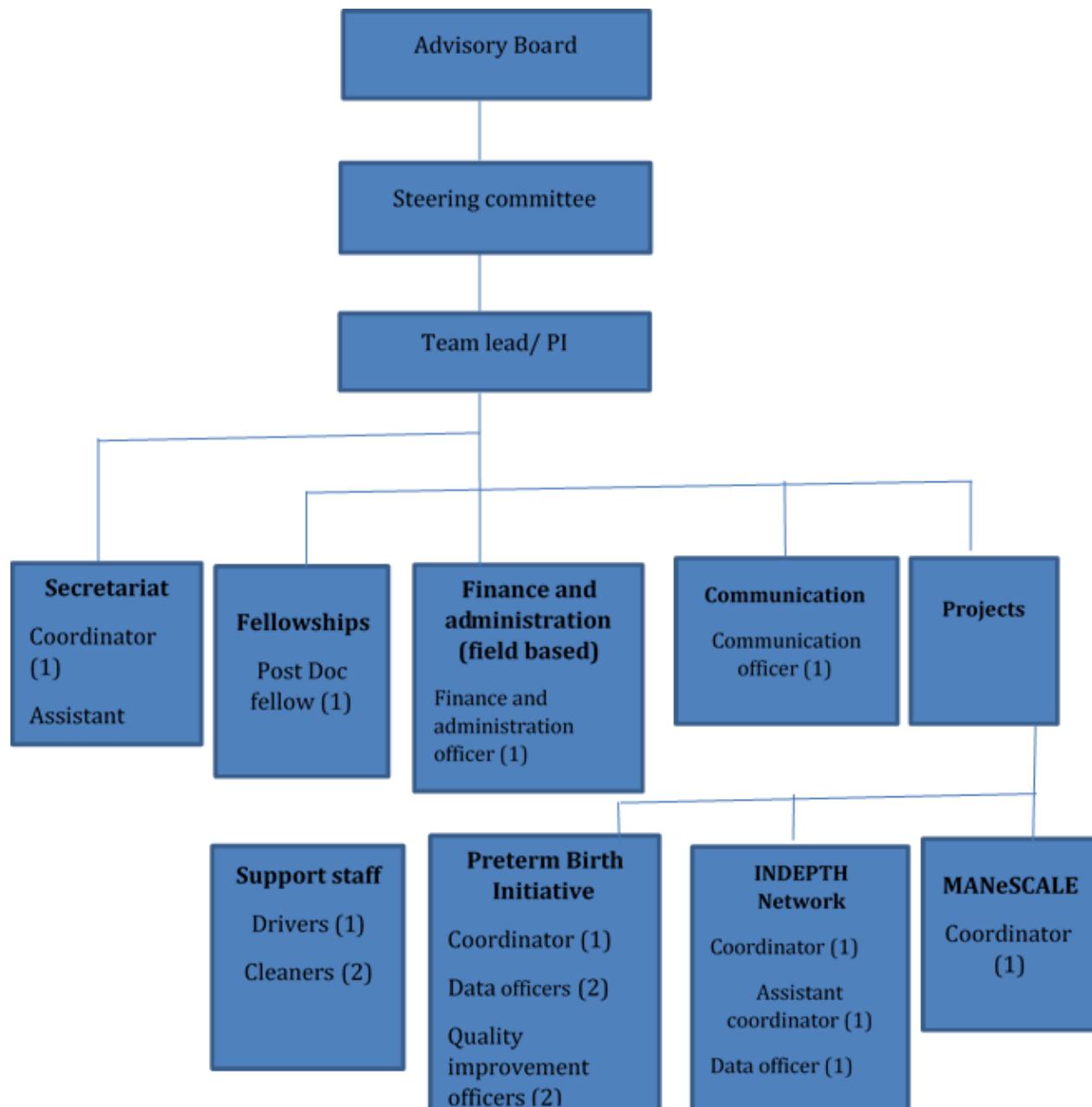
*"But the beauty with that is that the universities have a lot of flexibility so they allow us as a centre to make a lot of decentralised decisions under their supervision, but we are always aware of the university rules and regulations." (IDI, MakSPH)*

External partners were not aware of the CMNHR administrative structure and reported that it was not clear to them. They indicated that the CMNHR was run by a handful of young doctors. Many of the partners who responded to this question answered by saying, "I really don't know much about their administration."



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**Figure 2: Organigram of the CMNHR**



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## The CMNHR's evolution

The CMNHR has evolved since its establishment as the number of team members and scope of activities have expanded. **Table 3** describes the chronology of administrative events undertaken from 2013 to 2017, including the expansion of the core team. As the CMNHR has expanded its reach, more stakeholders are engaged in the CMNHR's work. From 2014, the secretariat team grew from three to five staff, with 10 field staff working on various projects. Although the CMNHR initially started as a catalytic project of Save the Children, it also began receiving funds and help from outside the country through various research projects (**Table 4**). In the final year, the CMNHR leadership made the decision to incorporate child and adolescent health into the centre of excellence. Hence it evolved from an MNH centre into a Maternal, newborn, child and adolescent health (MNCAH) centre.

In May 2017, the CMNHR's institutionalisation meetings started by first co-opting more members including the MNCAH researchers at the school. Two meetings were held for purposes of buy-in and to map out where intersections in work may be.

The CMNHR also expanded its efforts over time in each of its activity areas. Its capacity has reportedly broadened in scope, especially with regard to trainings. That function includes developing its own staff as well as training people from the outside. Besides giving scholarships for capacity building, the CMNHR gives advice in areas of research and information sharing, as another means of strengthening capacity. With regard to knowledge management, the CMNHR has developed and subsequently revamped a website and has initiated various mechanisms to further dissemination efforts, such as an electronic newsletter.

In terms of the scope of topics covered, the CMNHR evolved from focusing primarily on newborn health to doing more work on maternal health and then ultimately deciding to expand into MNCAH. The CMNHR's key staff described this evolution as occurring with more people coming on board.

*"Now we have opened up to be more than just a maternal and newborn Centre but a maternal, newborn, child and adolescent centre. That is because we want to encompass all the researchers—maternal, newborn, and adolescent health researchers—in MakSPH."* (IDI, MakSPH)

CMNHR leadership noted that setup has been a step-by step process that cannot be rushed. The CMNHR leaders decided to proceed slowly, concentrating on having quality products so that these would "sell" or marked the CMNHR's skills to the rest of the school, which would then call for further strengthening of its activities.

*"So in this process of going all the way you have to be careful. ... we have tried to do is to become a credible institution that does good products and eventually it comes to even when the school itself and the university will demand them. So we are pushing in that direction ... it remains a limitation but we are very careful about it. Because there have been many failures before—I mean, people have failed to take off. The good thing with us is that we have taken off and everybody in the University appreciates the Centre ... yeah, a step at a time."* (IDI, MakSPH)

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**Table 3: Timeline of key administrative events**

Year	Activities
2013	Developed the concept of an MNH Centre of Excellence
2014	First signed agreement between SNL and MakSPH, to fund the CMNHR for 21 months Recruited a project coordinator and assistant coordinator Preparatory activities initiated for each of the objectives
2015	Addendum for additional funds for the year 2015 (in May)
2016	CMNHR hired a part time person to manage its website and communications Launch of website ( <a href="http://mnh.musph.ac.ug">mnh.musph.ac.ug</a> ) Created and started sending out a bi-monthly e-newsletter to over 1,500 stakeholders globally Obtained office space for the CMNHR located outside Kampala (in Kasangati) in June
Jan-June 2017	Completing pending activities and phasing out In January 2017, the CMNHR leadership made the decision to incorporate child and adolescent health into the CMNHR. Hence the CMNHR became the Maternal, Newborn, Child and Adolescent Health (MNCAH) Centre in January. Institutionalisation meetings conducted



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**Table 4: CMNHR projects (ongoing and closed) beyond SNL funding**

Project name and aim	Study area	Start date	End date	Funding sources
<b>Preterm Birth Initiative (PTBi)</b> <b>Feasibility and acceptability of an individually randomised trial of early kangaroo mother care for clinically unstable infants weighing 2000g or less</b>	Uganda, Kenya, Rwanda	June 2015	May 2019	University of California San Francisco
<b>MANeSCALE project</b> <b>This project set out to pilot a model for improving quality of care for mothers and babies around the time of birth at six hospitals in eastern Uganda</b>	Uganda	2014	2018	Carnegie Investment
<b>LiST: Development and Use of the Lives Saved Tool</b> <b>Implementation of a Lives Saved Tool (LiST) Regional Centre; capacity building and technical support in LiST</b>	Regional	2016	July 2017	Johns Hopkins University
<b>Maternal and Newborn Working Group – ENAP# Project</b> <b>Focuses on live births, still births, and newborn deaths using pregnancy history, live birth history and routine Health and Demographic Surveillance System</b>	6 sites globally	2015	2018	INDEPTH Network
<b>RefNET</b> <b>Aimed at strengthening health district referral networks to reduce facility-based maternal and early neonatal deaths in rural Uganda</b>	Iganga District	April 2015	Oct 2016	Alliance for Health Policy and Systems Research (WHO)
<b>A regional model for strengthening a network of hospitals for maternal and newborn care in Uganda</b>	Busoga region	April 2015	Dec 2016	Alliance for Health Policy and Systems Research (WHO)
<b>TRAction</b> <b>Systematic documentation of community-oriented approaches to improve recognition of and appropriate care seeking for newborn and/or maternal complications</b>	Mayuge Namaingo	Jan 2015	Aug 2016	USAID through URC
<b>CODES Implementation of the Global Action Plan for Pneumonia/Diarrhea in Uganda</b> <b>This project aims to develop and evaluate the effect of a focused approach to scaling up high-impact interventions to accelerate mortality reduction from pneumonia and diarrhea</b>	Uganda	2012	2016	UNICEF

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<b>MANEST*</b> (Maternal and Neonatal Implementation for Equitable Systems)—innovations for increasing access to integrated safe delivery, PMTCT and newborn care in rural Uganda)	Uganda	2012	2015	World Health Organization
<b>The goal is to learn how to integrate and scale up interventions aimed at increasing access to institutional deliveries and care or complications and improving newborn care and uptake of prevention of mother-to-child transmission (PMTCT) of the HIV virus</b>				
<b>The Ultrasound Study</b> <b>To test the feasibility of introducing ultrasound scanning in early pregnancy and the third trimester to identify pregnancy complications</b>	Luuka	2015	2016	Grand Challenges Canada
<b>MANIFEST*</b> (Maternal and Neonatal Implementation for Equitable Systems)  This project aimed to scale up and test community-based, facility-linked interventions aimed at improving maternal and newborn health outcomes	Uganda	2012	2016	Comic Relief
<b>Saving Brains</b> <b>New approaches to ensure children thrive by protecting and nurturing early brain development, providing a long-term exit strategy from poverty.</b>	Uganda	2014	2016	Grand Challenges Canada

#ENAP: Every Newborn Action Plan; \* Initiated prior to the establishment of the CMNHR and woven into the CMNHR's work plans after its establishment



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## Looking forward:

The CMNHR began engaging MakSPH beyond its immediate host department at the beginning of 2017. The secretariat was also reported to be in the process of establishing a steering committee to oversee its strategic planning. The committee will be primarily internal, including representatives from the Department of HPPM, sister institutions, and professional associations. Following the establishment of this steering committee, the CMNHR's structure will include an advisory board involving external partners.

*"We don't have a board and that is one of the gaps. ... Let me say yes we have a board and no we don't have a board, because by being under the HPPM department and the school there is a board that regulates, but that [board] looks at more issues than the Centre. The Centre is currently the business of the school. Now ideally we would love to move to an affiliate independent organization of Makerere but that requires [more effort]. ... It is something we are still working on but we want to grow naturally. There is a lot of steps you go through to establish a centre in the University, like the Regional Centre, Infectious Diseases Institute and others. So I think we have not rushed to go to that stage, and by doing so we miss on getting other people on board, but still we can have a Steering Committee that [functions as] a board." (IDI, MakSPH)*

The CMNHR also reported that it was focusing heavily on mobilising resources to sustain its work. One staff member indicated that the CMNHR was "even struggling" now that the funds from Save the Children have ended. Staff acknowledge that they would need to leverage funds from other projects. Another possible way to sustain the CMNHR is by trying to engage other partners and pursue consultancies, notably by writing proposals for such work and seeking support from funding bodies like UNICEF, WHO and others, including an understanding with MoH.

The CMNHR is actively seeking grants to sustain its activities; possible funders include the following:

- Living Goods Limited (for conducting formative research for its new community-based family planning project)
- UNICEF (waiting to sign a partnership agreement to conduct a situation analysis of newborn care in the Karamoja and West Nile regions)
- ELMA philanthropists to support the CMNHR after July 2017

## Enabling factors of establishing and operating

### 1) Demand and need for a Centre of Excellence for MNH in Uganda

Many of the respondents identified a gap in Uganda with regard to knowledge management and research in MNH. Thus, there was demand for a CMNHR that would bring together the various work being done in MNH, identify and deliver on a research agenda and facilitate the promotion of basic practices for MNH.

*"The first facilitation was the need. We saw an opportunity ... we still had bad indicators for maternal and newborn care; whereas we have other areas like HIV, TB and malaria which are a burden, for those they have [existing] Centres of Excellence, the likes of IDI, BAYLOR. ." (IDI, MakSPH)*

*"I think the Centre was established as a repository for MNH resources where you can access links to new information, all the information in research, and that is what has been done so far." (IDI, partner)*

*"The main objective really was to develop a Centre of Excellence which can provide examples of the best practices in MNH care and as a way of helping stakeholders and learning institutions to improve their practices and as result reduce maternal and newborn mortality." (IDI, MakSPH)*

*"So we saw that this was a gap that we could actually fill and that led us to develop the Centre." (IDI, MakSPH)*

*"There was a need for a local indigenous institution that would help [to push forward] the work of SNL that was started way back in 2006 to promote the agenda for MNH. It was basically to promote the agenda for NBH, to identify research priorities that needed to be addressed to inform newborn health in general in Uganda, and also to facilitate the promotion of basic practices about the need to improve the status of NBH." (IDI, partner)*

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## 2) Qualified, well known and passionate founders/champions

The roles of key individuals and institutions involved in setting up the CMNHR influenced the ability to establish and sustain the CMNHR. For individuals, the CMNHR Director was identified as a prime driver of the process who described himself as a “champion of the Centre”; many key stakeholders also identified the current Director as the main driver of the CMNHR. Other researchers were identified as having critical roles at the CMNHR, including the project coordinator, program assistant and communications specialist. Other informants mentioned the role of “people in the field” who work on different projects and have been quite important.

Initially, the CMNHR built up support from various people in Makerere, but it also collaborates with the Association of Obstetrics, the Uganda Pediatric Association, the Nurses Association, the government, and others. The CMNHR was also engaged in the Uganda Newborn Study.

In addition, the CMNHR’s initial developers had reportedly built a strong level of credibility, first as researchers and academics from a credible institution in the country and region, but also as strong leaders in the network of partners working in the field of MNH. These leaders had effective local, national, international and field-based partnerships, and even good relations with the media.

Many respondents reported their view that the CMNHR in effect started without a name, since there was a perception that the CMNHR was building on what MakSPH was already doing.

*“You know many people start centres in different ways, some start a centre by having a centre and name ... but we started and then mobilised the money. We started by building on what we already have and taking advantage of it ... and having an agenda and having a place.”* (IDI, MakSPH)

## 3) Catalytic funding: through Save the Children and research projects

Funding from Save the Children’s SNL 3 project was crucial and catalytic. It supported activities like the conference and fieldwork, and it also provided some administrative funds. The CMNHR management agreed-upon activities based on each of the objectives; and the SPH was to implement and carry out the agreed activities with SNL. SNL’s role was basically to provide the funding and ensure that accountability took place up to the agreed-upon point.

The CMNHR has also used existing research projects, such as INDEPTH, to support ongoing activity costs and some overhead expenses.

## 4) Association with a respected local University that was willing to host the CMNHR

Another contributing factor to the CMNHR’s establishment and operations was MakSPH’s desire to host this Centre of Excellence in order to address the knowledge gap regarding maternal and newborn health in Uganda. The Head of Department (at HPPM, which hosts the CMNHR), other colleagues in the department and the Dean, who gave the official go-ahead, were identified as important to the process. Ongoing oversight support from MakSPH to the CMNHR has supported the establishment and sustainability processes as well. Multiple external respondents noted that the affiliation with MakSPH provided credibility to the CMNHR.

*“Without him [the dean] signing the grant we could not have the money to run it. It was very important. If he were to resist, it could have been very problematic.”* (IDI, MakSPH)

*“I think there is consistent support from the leadership of the School of Public Health, helping them to accomplish whatever they have to do. Even if they had challenges in the field of finance, there is proper leadership that comes in to see how things are going on. That is the advantage of linking it to the School of Public Health.”* (IDI, external stakeholder)

## 5) Engagement of in-country experts and institutions and global MNH experts in concept and start-up

Outside the CMNHR circles and MakSPH, colleagues at Save the Children and the Karolinska Institutet were identified as having a critical role in supporting and advising the establishment and sustainability processes. The CMNHR also consulted with other similar centres and institutions, like the MARCH Centre at the London School of Hygiene and Tropical Medicine (LSHTM); the Healthy Newborn Network; the Maternal Health Task Force at Harvard University, and the Maternal, Newborn and Child Health Institute at the Mbarara University of Science and Technology, which focuses much more heavily on pre- and in-service skills training. The CMNHR reportedly works closely with MoH, and

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other important partners include the Uganda Paediatric Association, Association of Obstetricians and Gynaecologists of Uganda (AOGU), PATH, WHO, and UNICEF. Everyone who does MNH in Uganda is targeted as a partner.

## Challenges of establishing and operating the CMNHR

### 1) Bureaucracy burden

The biggest barrier in establishing the CMNHR as reported by secretariat staff was navigating the University bureaucracy. The hierarchy in administration was reported as a hindrance to smooth operations and decision making. One has to pass through the Department (HPPM), through the School (MakSPH), then to the School board, the College board, and finally to the (University) Senate. Different procurement processes between Save the Children and MakSPH also delayed funding of some activities. The CMNHR staff reported that office space was a challenge linked to the bureaucratic processes. Although the CMNHR now has an office, it is located outside Kampala, making it difficult to engage with the rest of the University.

*"It [was] not easy getting past those levels to get a Centre accomplished and recognised." (IDI, MakSPH)*

*"The establishment of the Centre was not an easy process and you cannot start up the Centre without approval, so you have to go through the whole process." (IDI, partner)*

### 2) Limited core funding

Funding was highlighted as a main challenge. Although the funds from Save the Children were catalytic, this support ended in mid-2017 and the CMNHR had no immediate or foreseeable funder to cover operating costs. Though engaging partners has reportedly not been successful, it was noted that the process is ongoing.

*"I said that the main funder initially was Save, so Save has gone and we still exist and we are trying to mobilise resources internally in terms of some overhead but also taking advantage of other projects that we run. So to be successful we need to continue winning grants, which process is becoming more challenging, and now we are encouraging local stakeholders. Actually we were supposed to sign an MOU between the School and the Ministry of Health and UNICEF, but it was postponed so we need to follow up on that issue so that we will be doing some activities for the government." (IDI, MakSPH)*

A more innovative approach suggested was to develop a business-style plan to ensure the CMNHR's sustainability, looking beyond donor funding and engaging in some form of income generation.

*"I think we need a business plan; we may need to look beyond donor funding. We have to look at ways of generating income as a Centre that are not donor-dependent. Maybe through vigorously looking for consultancies and opportunities to network with organizations that are doing consultancy work, and also maybe bidding for consultancy work as a Centre." (IDI, MakSPH)*

In addition, grantseeking was suggested as a means of widening the scope to more opportunities than what the CMNHR had primarily been applying for—that is, moving from the usual to newer opportunities.

### 3) Few other centres of excellence for MNH to learn from within the country or region

There were not many other centres to learn from within the country or region. The CMNHR reportedly wanted to go beyond building clinical capacity to do more in the areas of research, knowledge management and advocacy, which had not been done before. Given that nothing like this existed for MNH within Uganda prior to the CMNHR, even key partners were confused regarding the mandate. One external partner reflected that a Centre of Excellence should do clinical skills development (similar to what is done at Mbarara University of Science and Technology), indicating misunderstanding about the purpose and objectives of the CMNHR.

*"Some of the existing centres were really big, with several million dollars a year to their credit: lots of funding infrastructure, vehicles, offices, buildings, which we didn't have." (IDI, MakSPH)*

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*“If they say that [they are] a Maternal and Newborn Centre of Excellence, that means they are doing clinical work, a place we can learn from and see proof that things work but ... doing research ... I don’t know.” (IDI, partner)*

## **4) Management and oversight challenges, including lack of a strategic plan**

Issues around the efficiency of the CMNHR management were presented as a challenge by respondents from MakSPH but also observed by partners.

*“I think the biggest challenge is a management challenge ... management in the sense that the School of Public Health needs to have, I think, the governing structure for the School or for the college.” (IDI, partner)*

*“Where we have not moved much is that management structure. The management structure is still wanting and also funding right now is not clear. I think we didn’t do much as far as planning for post-Save the Children time is concerned.” (IDI, MakSPH)*

Many respondents called for the development of an oversight board or advisory group for the CMNHR. Most of the external partners felt that the CMNHR needed to attract more partners to work with them.

*“Since I didn’t see the documents written in the setting up of the Centre of Excellence, I don’t know how it is structured. Is the accountability to the principal of the College of Health Sciences? Is it to the Dean? I don’t know who heads the school. ... I got the impression that the Centre of Excellence was driven by one or two persons in the School of Public Health.” (IDI, partner)*

The lack of a strategic plan and an advisory board prevented accountability mechanisms to ensure greater buy-in, delivery of objectives and sustainability.

*“Basically for sustainability, I think it’s critical that a Centre has either a steering committee or an advisory board to which they are accountable. In that way, the advisory board serves several purposes. It could be accountability, they could be out to seek more funding for Centre activities, things like that. My thoughts are that this is very important in the beginning.” (IDI, MakSPH)*

*“I think they need a strong board. A board where you have people who are interested in the Centre, but people who can help inform the strategic direction and also help in the mobilisation of resources. ... If they have a board, that board should be regularly sitting to review and make sure they are on track, performing what they expected to achieve, and set targets for what they want in terms of being in line with their strategy. I remember they didn’t have a strategic plan; I hope they have been able to establish one. Whether they have established it, I don’t know. But that is one critical thing they need to have, at least, and this strategic plan must be approved by the school.” (IDI, partner)*

## **5) Limited buy-in by key actors and partners both internally at MakSPH and externally**

Although the secretariat staff reported participating in national structures such as the National Newborn Steering Committee, the perceptions of the external partners revealed that more needed to be done to engage them and other stakeholders.

The CMNHR staff indicated challenges around engaging people to start a centre when there is no core financing and a limited pool of experts working on MNH. Therefore, it was not easy to motivate people with whom they worked or collaborated. Because maternal and newborn health is complex, the CMNHR needs to engage many more stakeholders than it is garnering already. One respondent alluded to the HIV community, which has pulled together massive support by engaging many other stakeholders.

*“One of the biggest strengths, for example, that the HIV response has had is really drawing a huge pool of people who can participate in moving this agenda forward. You cannot deal with such a complex issue by just a handful of people. Like, if you have Peter alone, he can talk and talk and talk but wherever he is not, nothing is happening. So generating a pool of people who understand the area, who are interested in it, who can do research in it, who can even pay for it is very critical.” (IDI, MakSPH)*

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Failure to institutionalise the CMNHR was and still is a barrier. The initiators of the CMNHR have not yet succeeded to institutionalise it properly. “*It is a Centre, yes, but it is not yet fully institutionalised within Makerere University*” (IDI, MakSPH).

The perception of the secretariat staff is that most of its money goes for overhead to MakSPH, leaving little to run the CMNHR and forcing the CMNHR’s administration to be creative in working within its limited resources.

“*In Makerere University, people tended to work as individuals, and so working together was a challenge where there was a need to learn together.*” (IDI, MakSPH)

## Major Accomplishments and Lessons

Major Accomplishments will be presented in the following subsections, organised according to the three objectives: knowledge dissemination, technical capacity and research agenda. In each case, we provide an overview of the current status, the successes and facilitators, and the barriers and challenges.

### Objective 1: Strengthen MNH knowledge management and information dissemination efforts in Uganda

With regard to knowledge dissemination and visibility, the CMNHR has adopted the following major approaches:

- A website and an e-newsletter distributed every two weeks to about 1,500 subscribers.
- Evidence and policy briefs and reports that are shared with Save the Children, partners and MoH.
- Social media: Facebook and Twitter are quite active; the Centre has WhatsApp as well but this is more internal, still reportedly a small group.
- Conferences: The CMNHR holds an annual conference and has also actively participated in other partners’ conferences.
- Engagement in national policy structures like the newborn steering committee and others under MoH, as well as other opportunities.
- Conducting seminars and also going out into the field; the CMNHR takes advantage of existing projects to engage people like district health officers, heads of hospitals, and departments at the district level of implementation.
- Documentaries uploaded on a YouTube channel.

As for knowledge management, the CMNHR has developed 10 unique policy briefs, seven documentary films, and 26 blogs. Dissemination events have included regular attendance and engagement at the National Newborn Steering Committee and hosting 10 seminars and three MNH-related conferences (**Table 5**). The qualitative findings indicate that the CMNHR is best known for its online platform engagement, such as its webpage and semi-monthly newsletter, although assessments of the newsletter’s impact by the partners interviewed were mixed.

“*The emails [newsletters] that they send out help, but if they do not send out those emails, it is very difficult to actually know what they even have on their webpage where you should go.*” (IDI, partner)

“*I have attended symposiums and meetings where the findings of the project have been disseminated. I have seen actual materials used on the ground. ... They have been holding meetings with policy makers and program people, and what they have gotten out of their district implementation has been disseminated to different categories of people to influence policies in health facilities and a bit of community programming.*” (IDI, partner)

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*“Yes, I have heard of the newsletter but I cannot vouch for it as an important outreach or say which audience it actually targets. It is not clear to me which audience it actually reaches and what impact it could have on policy regarding best practices.” (IDI, partner)*

*“I can’t speak for Uganda; I can say that maybe for me as an individual I have been able to see and access new information and materials. I get an email, then I can keep the links and read whatever they have posted.” (IDI, partner)*

The CMNHR also engaged in two media dialogues with over 40 health journalists from Kampala, Jinja and Hoima to strengthen their reporting capacity. Although the social media outreach is currently limited (e.g. only 143 Twitter follows), external stakeholders recommend strengthening this engagement, in view of its wide use by the younger population in Uganda. The CMNHR monitors MNH-related literature published in and about Uganda and ensures promotion and dissemination of suitable materials through various communication channels.

*“On knowledge sharing … they have been quite innovative … they have a website and they compile a simple newsletter with links to information that you can access and get to know what is happening, what is new research, what is the new information that is coming up. … This sharing of information is important because if you are an active person, it is a good source of information.” (IDI, key stakeholder)*

Engaging the media as stakeholders or partners in knowledge dissemination was also crucial.

*“There is a need to engage the media. The website could engage more of the stakeholders. … If it is involving the government [or] parliamentarians, it may appear to be a small step, but I think it is important to keep going. … The media can be a tool, but they can also be partners. A lot should be done to build capacity. Information dissemination is very expensive. As such, public health issues may fall off the agenda if they are not sure. A lot has to be done in terms of capacity building. Public health issues generally do not support advertising … so the media support is where they own these issues. They need to be involved.” (IDI, partner)*

**Table 5. Timeline of key events: seminars, conferences and symposia**

Seminars			
No	Name of presenter	Topic	Date of presentation
1	<b>Dr. Alex Coutinho (Accordia Global Health Foundation), Assoc. Prof. Peter Waiswa (MakSPH)</b>	Centres of Excellence The MakSPH Centre of Excellence for MNH	Early 2015
2	<b>Dr. Malalay A (technical adviser, UNICEF), Dr. Flavia Namiiro (pediatrician, Mulago hospital), Dr. Deo Munube (UPA)</b>	Continuum of care: newborn and childhood	12 August 2016
3	<b>Dr. Farah M Shroff, adjunct professor in the Department of Family Practice and School of Population and Public Health, Faculty of Medicine, University of British Columbia, Canada</b>	Public health and social justice: health advocacy for women and child health	24 August 2016
4	<b>Prof. Stefan Peterson, Head of Health, UNICEF Global</b>	The role of academia in achieving the SDGs	31 August 2016

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5	Associate Professor Peter Waiswa and Mr. Eric Segujja	Strengthening district health systems to improve child health programming through use of evidence based planning: the CODES randomised controlled trial in Uganda	7 Sept 2016
6	Dr. Janna Patterson	Advancing newborn health and survival in the SDG era	27 September 2016
7	Ms. Susan Einhorn	Leadership	25 November 2016
8	Assoc. Prof. Peter Waiswa	Maternal and newborn health in Uganda: What can champions do?	17 February 2017
9	Dr. Elizabeth Ekirapa (MakSPH), Dr. Nalwadda Christine (MakSPH), Dr. Monica Okuga (MakSPH) and Dr. Sisay Sinamo (World Vision)	The contribution of community health workers to maternal, neonatal and child health	22 February 2017
10	MakSPH: Assoc. Prof. Peter Waiswa, Assoc. Prof. Freddie Ssengooba  Cehurd, Ms. Noor Nakibuuka, Mr. David Kabanda  JSI: Dr Possy Mugenyi.	Where law meets public health policy: the case of maternal health in Uganda	25 May 2017
<b>Conferences and symposia</b>			
1	2015 MNH conference	Theme: “Moving from policy to practice: saving mothers and newborns at national and local levels”	15–17 June 2015
2	2016 MNH symposium	Theme: “Maternal and newborn care in Uganda: high-impact innovations for scaling up”	19 Oct 2016
3	Organised with Aga Khan East Africa	An East African symposium on sustainable strategies for achieving the SDGs	7–8 April 2017

## Knowledge dissemination successes

Most of the respondents mentioned that the CMNHR's core mandate was to promote science by generating evidence, communicating new knowledge, and getting more people to use the evidence. A majority of respondents mentioned knowledge dissemination as one of the major achievements of the CMNHR. Access to new information and updated materials by users of the CMNHR's resources was highlighted by all respondents as very useful. Critically, the newsletter was consistently described as widely disseminated and useful.

*“I can't say just one positive thing; I will give you three things. Creating people with expertise, local evidence generation and the sharing of evidence both from us and from others. (IDI, MakSPH)*

*“One of the objectives was to share information and they have shared information about best practices, so I think in that area they have done well.” (IDI, partner)*

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*"They have done their best to try and put out things that people need to use. ... Their newsletter has been consistent every week and I actually look at the stories; some are local, some are international." (IDI, MakSPH)*

*"I just like reading articles to see what is working and what is not working, so I would generally just scan through it and once in a while I read the articles because I like to keep myself up to date." (IDI, partner)*

The newsletter and website were seen as opportunities for promoting the image of the CMNHR as a Centre of Excellence. In addition, respondents mentioned that they had accessed online resources from the CMNHR's website, blogs and newsletters. Some noted that they are always eagerly waiting for material on new issues that the CMNHR would produce. Other partners indicated that they received emails with the newsletter and found them very useful and got hooked on reading it.

*"I will start with the one where they publish what they do in the journals, but they also have websites, they have blogs where they frequently send emails to us, or when something new comes up you know they always have news. They have a full communications officer and I must say that he is really active in providing updates to the different stakeholders. (IDI, partner)*

Respondents from academia mentioned that the major achievement of the CMNHR was its ability to pull together all the important articles in maternal and newborn health for them to access at a one-stop location. The added benefit was that they could share important information with their other groups, thus further disseminating the knowledge.

*"These continuous electronic circulations are actually good because we are very busy people. Even when there are workshops, we might not come, and if we come we do not stay for too long because we are always on the move. So having some of these materials come up, nicely packaged in a way that you can read when you are at your desk, is quite helpful. And if there is a topical issue that has come up or an article that is really of critical importance, you can flag it and share it with people and synthesise the implications and the messages. So I think these work well for us in academia." (IDI, MakSPH)*

Documentation of research work done in the country is a major accomplishment by the CMNHR. Some respondents reported that searching for and finding published work both in and outside the country has been a challenge and that they are now able to access such information from the CMNHR.

*"Documentation has been a huge challenge so as a country we may not be able to showcase our work. Coming up with a Centre like this helps to ensure that some of the good work that is being done with the different partners is well documented and can be shared. So it is a good forum. They give us an opportunity to share. (IDI, partner)*

Conferences were mentioned as another major achievement regarding the centre's ability to impact MNH in the country. During the conferences, both academics and policy makers meet and discuss new evidence and other products that are meant to improve care for mothers and newborns.

*"I think the conference is a big initiative because it attracts high-profile people among maternal and newborn experts—professors from around the world, as well as local researchers with broad experience from elsewhere in the world." (IDI, partner)*

*"I have been able to see and access new information and materials. I can see that there is this conference coming up, whether we can participate and if we have an abstract to submit. That is how actually I have been able to use this resource." (IDI, partner)*

Conducting conferences with partners produces close collaboration between policy makers and members of academia, enabling them to agree on how to work together. In addition, the conferences and symposia allow young researchers to learn and become interested in continued research, since they attract national and international audiences.

*"They had this really large conference, it was well attended. There were many policy makers and people in academia. I was also there and also chaired some sessions. We launched this issue where they had published a lot of papers and we had side meetings, workshops for capacity building and for young faculty. That was good, because it really generated interest and it was written about in the media." (IDI, partner)*

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*“Accomplishments? I think we have been able to bring the maternal and newborn agenda forward, even growing nationally and globally. When we started those conferences, no one was talking about it much, but now after the conference, everyone is talking about it. They are blowing the trumpet through the website and the newsletter. At least people know that there is something happening in Uganda, so we are doing some advocacy in that area.” (IDI, MakSPH)*

## **Knowledge dissemination barriers and challenges**

The CMNHR generally targets its work towards academia, policy makers, program managers, researchers and then media, in Uganda and around the region. More recently, the CMNHR’s audience has been composed of the people it has closely worked with. The director admitted that the CMNHR had not attained much global reach yet except through Facebook and Twitter where people share the information, especially the newsletter and the policy briefs. They have also done video clips, including some videos and documentaries available through YouTube. These reportedly have led to some stories that have ended up in the international media.

One acknowledged limitation, however, is that the CMNHR has not yet developed its own communication strategy for labour and frontline health workers, or for the relatively educated layperson; that is an area that they hope to work on, but lack resources for.

However, the CMNHR communications person was invited to work with the communications people at Save the Children in Washington, DC, where he learned more about how to brand, how to present information, etc. Now, compared to the original website, the current one is much better—a welcome development for the CMNHR’s communication system—in terms of how the information is presented.

*“I also got one-time funding to obtain some training from the team at Save the Children in the US. Actually, that’s where I learnt to automate the newsletter..” (IDI, MakSPH)*

Other challenges include:

- Hacking of the system, and steps taken to remedy: There reportedly were as many as three hackings into the website, causing it to be shut down. Measures were put in place to enhance security of the website.
- Getting the right messages across to reach everybody, at a cost: The less educated (illiterate) and literate laypersons have been reached to some extent. However, the most reached groups include people attending programmes, those in academia, and the media, but not so much the common man. The blogs are available freely online, though more strategic dissemination is needed. One difficulty was that sometimes if you want social media to reach many people, you have to pay money to reach them (e.g. through favoured placements).
- Need for more blog writers and communicating more effectively with colleagues and key players: Another challenge was the need for more blog writers. Additional experts have been invited to come on board, especially members of professional associations such as the AOGU and UPA.

*“Can you imagine if all the obstetricians sent us all their emails? We could then add them automatically to the newsletter. So if the associations send us their contacts, it is good for them too. Then, if they want to communicate with their members and others, one email could go to thousands of people and their activities could be shown on this Centre’s website. So it’s not really so much about us only; we are so inclusive. (IDI, MakSPH)*

- Weak or poor readership: The readership in Uganda was reportedly weak. The CMNHR tracks the newsletter to see people who open it. It found that few people in Uganda opened the newsletter and that these few never gave feedback, whereas more and more foreigners were reading it. Thus, there is a need to be innovative in seeking ways to reach local people. Generally, the Ugandans have a limited reading culture. Those on the email list did not respond to emails or blogs either.

*“The readership is a bit disappointing, especially within Uganda. You cannot believe that most of our readership is from the US, from Sweden, from Britain, and Uganda is somehow down there at the bottom. But we know the problem of Ugandans; they don’t like reading so it a bit of an uphill task to get time to read. If*

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*"we insist and continue sending them this information, you never know, one day someone will decide to open it and read." (IDI, MAKSPH)*

- Need for more stakeholder response and engagement: The innovation of gathering and putting out information from different stakeholders, through the CMNHR, to become a knowledge hub where one can find all the documents one needs on MNH plus other information is a very important idea. However, collecting such information from people was a big challenge.

*"I think sometimes just getting information is a problem, and getting to know what is happening in the entire country so that we could package it is still a challenge." (IDI, MAKSPH)*

Finding the time to gather the information was also reportedly a challenge. The CMNHR has recognised the need to prepare summaries of all strong policy documents that can be used for policy influence, but this has not been achieved.

## **Objective 2: Strengthen internal and external technical capacity for MNH in Uganda**

The CMNHR focused on capacity building for clinical care, planning and programming and for young researchers. Its investment in building MNH expertise through training the next generation of academics and champions has been a critical contribution. Fifteen post-graduate students have benefited from CMNHR-hosted grants to support their research across multiple disciplines, including three PhD students. In addition, the CMNHR hosted six foreign PhD students to work with them on various research projects.

*"The [CMNHR] team has been very aggressive in pulling smart young people into their pool to do work in maternal, neonatal and child health areas. This increases the pool of people who understand this field, who are interested and who can move it forward. ... The HIV response has had a huge pool of people who can participate in moving that agenda forward; you cannot deal with such a complex issue with just a handful of people." (IDI, partner)*

The extensive training on maternal and newborn care given to over 300 health workers in the Busoga region, together with engagement of hospital leadership and provision of drugs and equipment through various projects, such as MANeSCALE, Referral Network (RefNet), Preterm Birth Initiative and the High Risk Babies project, resulted in a change in facility-based practice. The CMNHR also developed expertise in relevant maternal and newborn health tools for program managers and implementers. It facilitated trainings both within and outside Uganda reaching 80 Ugandans with LiST and 26 Ugandans with the Equitable Strategies to Save Lives (EQUIST) tool. The team reports having trained as many as 1,000 Ugandan health providers. **Table 6** summarises the trainings conducted during the project.



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**Table 6. Trainings conducted by the CMNHR**

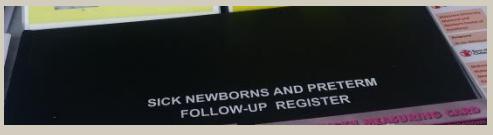
Name	Dates of training	Total number trained
Health workers in small and sick newborns	Hoima: 3-5 May 2017 Mulago/Nsambya: 19-22 Jan 2016	51
Lives Saved Tool trainings	<b>National trainings</b> 20-22 Nov 2014 3-5 Nov 2015 27-29 July 2016 7-8 Dec 2016 <b>International trainings</b> Dubai: 5-7 Oct 2016 Washington, DC: 13-17 July 2015	76
Helping Babies Survive	4-6 April 2017	30
Helping Mothers Survive	6 April 2017	30
Pronto	Sept-Oct 2016 Feb-March 2017	>250

Multiple tools and innovations have been developed, adapted and used by the CMNHR, including foot size care (under UNEST), a register for small and sick newborns, a training guide for the advanced newborn care curriculum, and the LiST curriculum. See **Table 7**. Innovative approaches have been undertaken and linked to research projects: community systems for early dating of pregnancy with linkage to care (Ultrasound study); a regional system for care of mothers and newborns in hospitals (MANeSCALE study); community-based care for preterms, other newborn and maternal care (Preterm Birth Initiative study); integrated systems for identification, referral and follow-up of mothers and newborns (High Risk Babies study); and improving referral networks through quality improvement approaches (REFNET study).



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**Table 7. Tools developed by COE**

Product	CMNHR contribution	Evidence of tools
Foot size card	Adapted and piloted in Uganda through a UNEST sub-study	
Register for small and sick newborns	Developed by the CMNHR	
Training guide for advance newborn care/management of small and sick newborns	Developed by the Uganda Paediatrics Association with funding from the CMNHR	Still being finalised. A copy of the draft manual was provided.
LiST curriculum	Adapted from tools developed by Save the Children and Johns Hopkins University	A PowerPoint presentation was shared with evaluators and is available from the CMNHR on request

The CMNHR contributed to in-service training through comprehensive emergency care obstetrics courses that it conducted to build the capacity of health workers. Other courses included involved modelling the impact of certain interventions using tools such as LiST and EQUIST. In the LiST training, almost 80 implementers participated in four separate training sessions, including program staff and academicians within the country. In addition, the CMNHR took part in two other LiST trainings outside Uganda in collaboration with Johns Hopkins University, one in Washington and one in Dubai, where its staff trained people from the World Bank, WHO and UNICEF. Respondents mentioned that the training using the LiST tool helps not only to build capacity but also to assess whether a particular intervention reduced mortality, so as to aid in better decision making for maternal and newborn health.

## Technical Capacity Facilitators/Successes

The CMNHR reported conducting training to improve healthcare planning, such as in-country training on the LiST tool. Currently, it is the only institution doing LiST training outside the US. Reportedly, as noted above, the CMNHR has trained about 80 people and is now working on tools to be used by Makerere University, MoH, NGOs and the private sector.

Another training success was the EQUIST training; the CMNHR became the first EQUIST centre in Africa and has also supported other countries.

*“Spot-on ... I think we have done quite a job in strengthening technical capacity and also in building capacity.”*  
 (IDI, MakSPH)

The CMNHR developed an advanced newborn training manual for in-service health workers, in partnership with AOGU, UPA, nurses and other experts to develop the materials. Respondents thought that this undertaking was very successful—for example, in skill development for health workers at all hospitals in eastern Uganda.

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*"I have seen health workers being trained in that advanced newborn course, and also through the Preterm Birth Initiative which is under the Centre. It's doing a lot of training in six hospitals in the Busoga sub-region—not only clinical skills, but data people in this hospital have also been trained. We also have training for community health workers. Some of our projects have involved training managers in how to manage these health facilities. We have been facilitating leadership engagement meetings and leaders from different hospitals and facilities have come together." (IDI, partner)*

*"It involves a lot of resources, in both technical capacity and in financial capacity. I don't imagine that they had everything they needed, but they must have worked within what they had to make sure that they made a real impact. We were definitely able to see results in terms of health status improvement, quality of guidance materials, improvement in skills and satisfaction of the health workers, who felt more satisfied with their skills and better equipped." (IDI, partner)*

Another one of the CMNHR's major accomplishments in technical capacity building was in bringing together experts working with newborns and those in other areas to identify training and mentoring needs, as well as to provide supplies and equipment to facilitate health workers' improved service delivery.

*"The Centre brings together technocrats or experts in certain fields. They mobilise and coordinate neonatologists, the pediatricians who are working with newborns, and other people, and then together they can identify where there is need for training. There is also mentoring. So the technical skill development is mainly through training, but they also have projects. ... some projects they have been able to provide the health facilities with equipment and supplies so that when somebody is trained that person can actually use the equipment." (IDI, partner)*

Respondents mentioned that the complete process of training, mentoring, data collection and use, documentation, and provision of equipment as a package was the key to improving quality of care and was appreciated by partners.

*"They have tried to give a complete package which will help to improve quality of care. We do the training, we do the mentorship but also where possible we provide the equipment. And the Preterm Birth Initiative worked a lot on the data component, documenting what has been done and making use of the data generated to inform what happens next. This has been lacking for some time—namely, having a systematic way of collecting data and looking at it and seeing where are we going." (IDI, partner)*

The CMNHR respondents mentioned that skills training and capacity building represented an especially successful activity because they trained partners both nationally and internationally.

*"We have worked with UNICEF headquarters, we have trained about 20 people. We are the first EQUIST Centre in Africa. And now we are going to be supporting other countries in this. In fact, even for LiST we have trained people in the US, Asia and Africa as well as in Uganda." (IDI, MakSPH)*

One respondent reported that the CMNHR has trained over 1,000 health workers in Uganda's eastern region in maternal and newborn care (the evaluation did not seek to verify this data).

## **Technical Capacity Barriers/Challenges**

The CMNHR staff found it challenging to coordinate the expert stakeholder input in the development of tools and curricula due to the MNH community being fragmented. Partners interviewed had differing perspectives on whether the CMNHR had undertaken appropriate consultation by stakeholders in the development of these tools and curricula. Both CMNHR staff and partners acknowledged that one-time trainings by themselves are not sufficient to establish effective, sustainable practices.

Other challenges were noted around capacity building for health workers, such as limited human resources, supply shortages and transfers of staff who have been trained. Moving from pilots and projects to implementation at scale by government requires strategic advocacy and buy-in from key players within MoH, which has also been a challenge for the CMNHR.

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*“Getting key stakeholders together so that they respond is a very big problem, as Uganda is so fragmented. This requires government leadership and no one else can do it for them.” (IDI, MakSPH)*

It also requires addressing the human resource challenge. One partner respondent noted that in a hospital setting, the same midwife is supposed to do many things; and there are overwhelming numbers of patients. If staff are overloaded, they may not really perform at their best. Health system barriers may not have been sorted out by the CMNHR’s supported projects due to system challenges like the lack of supplies for newborns and also for maternal health care.

### **Objective 3: Develop and monitor implementation of an evidence-based national MNH research agenda in Uganda**

The research agenda is a key aspect of the CMNHR’s mandate. Lack of a research agenda was a recognised need that led the CMNHR to engage many other people in the research process. The CMNHR team involved over 400 people in specific research areas or initiatives, both inside and outside Uganda, through a consultative process and methodology called the Child Health Nutrition Research Initiative. In this way, it was able to develop a research agenda for newborn care.

*“The methodology basically identifies experts in the field to come up with questions in the various domains. These are weighted to prioritise the questions. It is important to map out the key people very well.” (IDI, MakSPH)*

The CMNHR set out to specifically develop a newborn research agenda for Uganda, drawing on and learning from the experiences of others elsewhere, like the International Outreach Centre. Evidence generation and research often led to or opened up opportunities for more research and thus further growth.

*“In my understanding, the Centre was established, among other things, to find out what can be done by collaborating in new and continuing research; developing capacity in research; and bringing different stakeholders together—academicians, NGOs, and other partners focusing on maternal and newborn health. This is an area that cannot be resolved only from the medical perspective; it requires a multi-sector approach.” (IDI, partner)*

*“It had to be understood that part of the Centre is around evidence generation … the research you do opens up opportunities for another research project. And that is how to grow research.” (IDI, MakSPH)*

Engagement of stakeholders in MNH and the national health research agenda for MNH has reportedly been one of the key processes used, including the Uganda National Health Research Organization (UNHRO) and MoH:

*“They contacted the people who matter in the area of maternal and newborn health, and there were meetings which were held in line with stakeholder engagement. All that was excised and they came down to fifteen questions. What I think remains is engaging national health research organisation and the Ministry of Health to see what will be taken forward.” (IDI, MAKSPH)*

Other stakeholders have appreciated such efforts by the CMNHR and felt that they were part of what was happening on the ground:

*“I have been part of some of their work in their research districts, I have attended symposiums and meetings where the findings of the project have been disseminated. I have seen actual materials used on the ground. So I have been part of this whole process from the beginning as they have developed. I have seen them, I have listened to them, and I have been in some of the areas where they worked” (IDI, PARTNER)*

*“It is as well a training Centre supporting a number of students in understanding better the whole area of maternal and newborn health, both in community and in health facilities, and how to improve interventions. So I consider it a very big opportunity for research, obtaining evidence for the Ministry of Health and other related sectors, and training people.” (IDI, partner)*

*“[The goal is] to improve really evidence-based programming and policy for MNH. That is where I have seen most of the research done, programs at the district level. The symposiums are all meant to improve local evidence.” (IDI, partner)*

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**Table 8: Top 15 Uganda newborn research agenda priority questions**

No	Question	Domain	Research Priority Score (%)
1	How can we effectively sustain partograph use for labour management?	Delivery	80.6
2	Can participatory and women's groups improve neonatal health in the Ugandan setting?	Delivery	80.5
3	How can we effectively maintain clinical competencies for newborn care in health facilities?	Delivery	79.9
4	How can we improve newborn outcomes among vulnerable populations?	Delivery	79.6
5	What low-cost technologies improve neonatal survival in community and facility settings in Uganda?	Development	79.3
6	What is the etiology of stillbirths in Uganda?	Other	77.7
7	Does knowledge of essential newborn care practices among mothers have an impact on newborn survival?	Delivery	74.9
8	How can male involvement be used to improve neonatal outcomes?	Delivery	74.3
9	Can integration of essential neonatal care into lower health facilities improve neonatal outcomes?	Delivery	74.1
10	How can newborn referral and follow-up be improved at the community and facility level?	Delivery	73.7
11	Can involvement of newborn champions in the political, social and economic arena improve newborn outcomes?	Delivery	73.6
12	What is the skill level of midwives in neonatal resuscitation in Uganda?	Delivery	73.5
13	Can the use of simple algorithms by community health workers to identify and refer neonates with danger signs improve neonatal outcomes?	Delivery	73.4
14	Can integration of culturally relevant practices within maternal and newborn care improve uptake of institutional deliveries?	Delivery	73.0
15	What is the feasibility of improving access to neonatal sepsis management using simplified antibiotics for newborns when referral to a hospital is not possible?	Delivery	72.8

*Source: Centre end of year report 2017*

Some activities undertaken by the CMNHR include monitoring the research agenda each quarter together with the Makerere University IRB, the National Council for Science and Technology (UNCST), Mbarara University, and the College of Health Sciences at Makerere University:

*"We try to gather what newborn research is currently going on, and in that way we see which parts of the research agenda are being filled in terms of research and evidence being provided" (IDI, MAKSPH)*

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## Research Facilitators/Successes

Establishment of a newborn research agenda to influence policy and service delivery in MoH was noted as a major accomplishment. The most important factors that facilitated formulating a research agenda were realising a gap in MNH research, having many researchers and a network of people to consult, and having some resources to hold the meetings. Identification of gaps so as to facilitate formulation of the research agenda occurred through interaction with policy makers, work in the MNH field and research.

*"So as for the policy gaps, as academicians we know that we can find them in various ways, through engagement; in a lot of these meetings we organise, they should come up. We attend a lot of meetings including the newborn steering committee and the maternal cluster as forms of policy engagement, we go into the field and do research, and we look at existing literature government documents and international literature. We participate in a lot of both local and international meetings. So we were able to get the issues. (IDI, MakSPH)*

In addition, having a good response to the process of initiation and formation of the research agenda was in itself a facilitator. Many participants from different areas, including international experts, were reportedly enthusiastic about participating in the research agenda process.

*"Of course the response from researchers was quite good; they were quite enthusiastic in sending in the questions and the ideas that they thought would reduce mortality in Uganda. So for me, the need is for a specific context-based research agenda in Uganda and the enthusiasm of researchers in responding to this [was helpful] ... also the fact that the people who developed the global research agenda were available and willing to help in the process of guiding how to take the next step. (IDI, MakSPH)*

Facilitators of the research agenda and its perceived successes were the result of having not only a global newborn research agenda in place, but more so the recognised need to develop a Ugandan context-specific newborn research agenda.

*"I think we have been very successful because we have a research agenda already developed, reported on, disseminated and monitored. So I think that has been a successful deliverable for us." (IDI, MakSPH)*

*"One of the facilitators is the fact that we have a global newborn research agenda, but we need a context-specific newborn research agenda in Uganda. What happens in Europe may not be the same things that happen in Uganda. That is why the context is very important, so that was one of the drivers because everyone sees the need context of Uganda." (IDI, MAKSPH)*

In addition, CMNHR respondents attributed success to persistent and concerted efforts at continuous monitoring of new research.

*"We actually track especially the newborn research that is going on. The assistant coordinator of the Centre looks out for new articles and puts them on the website." (IDI, MAKSPH)*

Great spinoffs were reported by the CMNHR respondents. They mentioned that the CMNHR's products were being used by partners both locally and internationally, both in terms of newborn health and the MNH research agenda. One respondent reported that their research was being used to change the focus of newborn care in other countries or to guide other studies.

*"The American government told us that an article we wrote was being used for their focus on newborn health. So wow, I didn't know. Then the other day someone told us 'Every time you do a blog I like reading them and now am starting my PhD' ... So you can't know the power [of information]." (IDI, MakSPH)*

The CMNHR, the School, and other stakeholders believe their products are making an impact. Many of the young people involved are doing research, attaining higher degrees, and making a difference.

*"We have provided 15 small grants for dissertations for young researchers and all of them have been completed. They have actually completed their studies, so to me those are measures of success for us." (IDI, MakSPH)*

*"We are doing master's and PhD work, there are so many students everywhere. It's not just the Centre, we all play roles. We are participating in the Centre's impact." (IDI, MakSPH)*

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## Research Barriers/Challenges

Barriers and challenges identified included poor stakeholder response and engagement, lack of leadership from the responsible government ministry, and financial constraints limiting participation in the research agenda setting process.

The challenge was basically how to get all the issues right, take them up and bring all the stakeholders on board. The best approach involved the use of email:

*"In our situation we said we got 40% response, which in fact was a little bit higher than the international average and good enough for the program people and the researchers who were involved." (IDI, MakSPH)*

Engaging other stakeholders on this research agenda is important. Getting money to elevate the research agenda and then getting researchers to buy into the idea, especially in countries where they did not have money for research, was a challenge.

*"I think more stakeholders coming together, government and partner leadership, is very important. It should not be just academic. The easiest way to get local funding for research is to embed it in program money. So I think embedded research or implementation research is going to be important." (IDI, MakSPH)*

Monitoring work done internally, especially unpublished work, is a challenge; people do not part with their products easily.

*"We are monitoring the maternal and newborn work based on the literature but most of the research is not yet published ... most of [what we know] is from published work; we don't have most of the unpublished work. Getting people to respond to a question on who did what is difficult."*

The country's research management systems may present another barrier.

*"They want us to go to the IRB, and from National Council we have tried. I think they need to understand that we just need to know what is going on so that we can track it. It is just monitoring and not research." (IDI, MakSPH)*

The maternal and newborn research agendas are connected, and many respondents expressed confusion as to why the CMNHR developed a newborn only specific research agenda rather than an integrated MNH research agenda. Although they claimed that they clarified to stakeholders that a maternal research agenda already existed and that the CMNHR sought to fill the research agenda gap specially on newborns, a neglected area.

*"I think maternal and newborn are connected, but also what we are saying is that even if we have not done the research agenda yet for child health and newborns, we can monitor what kind of research is going on, which can later help to inform the development of the maternal and child agenda. But currently the task we are doing is the newborn research agenda." (IDI, MAKSPH)*

Some respondents reported that often policy makers criticise academic researchers for doing work without consulting them. But then the policy makers fail to review the evidence for further applications to policy and practice. Such research would thus be wasted in terms of both time and resources, thus calling for better collaboration between researchers and policy makers.

*"Sometimes you proceed in this way and do the research and bring the findings, and they say, 'Why did you do this, why didn't you ask about this?' So that closer working relationship must be generated. ... When you work together, it is very easy to get the policy makers to pick up the evidence because they were part of the work and know it, and this is nice." (IDI, Partner)*

## Additional overall challenges

How the CMNHR gets people on board can be a challenge, since at the university, people tend to work as individuals. One respondent observed that one of the driving forces at MakSPH since its existence was passion. The CMNHR's attempts to get others on board started with those who thought like them; they identified those they could engage with in the first instance. Then they invited other colleagues within the school and other stakeholders, such as colleagues in other

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professional organisations like the presidents of obstetrics and gynaecology as well as paediatrics to their meetings, because they desire to improve MNH. Many engagements in the School began through newsletters, seminars, workshops, field activities, etc., thereby attracting more people.

*"When you do good things, you are able to win over people ... like when we did a seminar here it was oversubscribed; so many people came. So that has been one of the key areas for the Centre in terms of its emergence, and getting people on board"* (IDI, MakSPH)

In addition, seeking partnerships with new players from local institutions and those involved in similar work, such as the Mbarara MNH centre, was important to strengthen the CMNHR's own work.

Leadership challenges within MNH circles, including at the top (MoH) and institutional levels, were identified as an overarching challenge. There was concern with the seemingly fragmented approach by the key players. Lack of cohesion was observed among professional associations such as AOGU and UPA, each of which was doing its own things (whether with mothers, newborns, preterm births, etc.). At the national level, MoH leadership has not helped matters. There seems to be a severe lack of leadership regarding MNH at MoH, which affects how the partners in MNH work together.

*"I think we would be stronger if we went with one voice ... in fact, our silence is bad. Neonatal health has not improved in Uganda for 15 years and we are silent!"* (IDI, MakSPH)

Some type of forum or conference for discussing this dire situation was suggested as a desirable way forward.

*"We should find a way of mapping out who are the key people organising the conferences and come together, so that together we influence policy. ... And then there are administrative issues. So I thought, maybe we should come together for a three-day conference. For two days we could the general things and then one day go to the more clinical stuff and, if need be, the leadership issues."* (IDI, MakSPH)

## Stakeholder Recommendations

We analysed the recommendations provided from all respondents and grouped these recommendations into themes and sub-themes that emerged from analysis into four categories: CMNHR structure and scope; activities; advocacy/engagement; and funding. The recommendations were mostly in the form of suggestions or requests for improvement, change, or continuation in the particular areas of interest.

### CMNHR structure and scope

- **Need for a CMNHR office:** a good, independent, accessible office that focuses and shows CMNHR's brand.
- **MNH research requires a multi-disciplinary approach:** Most MNH research in Uganda is clinical and partners perceive this as sole need for MNH research (see below quote). A multi-disciplinary approach is needed across disciplines including social sciences and gender department.

*"Research on maternal and newborn issues is basically clinical. It's not like child health, which can improve through many public health issues. In MNH, the health system failures are clinical health system issues."* (IDI, partner)

- **New players are needed:** Most MNH researchers trained as doctors. There is a need to intentionally bring other health cadres into research such as nurses.
- **Strategic plan and budget:** There needs to be a budget of everything that is planned because without a budget, some of those things may not be operationalised.
- **A more suitable CMNHR name:** The CMNHR has acknowledged that its acronym is "not even pronounceable". The CMNHR has reportedly been thinking about those issues and considering establishment of a new brand name.
- **Need for a CMNHR communication strategy and information digest:** Not having developed a communication strategy especially for frontline health workers and other employees is a limitation. The CMNHR needs people who can digest information and unpack it for people in the field.

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- **Visibility, value, and business:** One respondent said: “What is our visibility, what is our value, what are we adding to the people out there, and does it make business sense for us?”  
*“Increasing the visibility of MNH is a critical area in public health and the newsletter could be an opportunity to create that image of a centre of excellence.”* (IDI, partner)
- **Strengthen the “M” component in MNH:** The CMNHR is strong on the “N”, but some respondents felt more needs to be done with the mothers; collecting more evidence is needed, plus more work with both women and men, so as to take into account the whole family. Regarding adding M to MNH, *“It has started a bit but I think we need to do better.”* (IDI, MAKSPH)
- **CMNHR should be ready to invest for a long time:** To see results in maternal and newborn health one must make long-term investments. Short-term results are rarely the best.
- **More staff are needed:** There is a lot of work to do, e.g. the need for a monitoring and evaluation staff as well as assistants to the CMNHR coordinator, communications coordinator and others.

## Activities

- **Prioritize online system to disseminate:** Access to materials is often not possible because not everybody can attend the conference or workshops. Documentation of the workshops can be shared online. Online mechanisms are inexpensive and can reach many people. Short videos of practice sessions can enrich the website’s ability to target health workers and practitioners.
- **Strengthen social media engagement and plans:** Young people use social media heavily, so effective, innovative uses of Facebook, Twitter, smartphone technology tools, etc. should be encouraged.
- **Engage key partners in development of the national research agenda:** Engage MoH in this regard. This process has been started and is almost complete because the questions are identified. What remains is to engage the Uganda National Health Research Organization (UNHRO) and MoH so as to move forward.
- **Develop a common national MNH research agenda:** Working together requires coming up with a common agenda. The CMNHR has specifically developed a newborn research agenda for Uganda, based on that of the International Outreach CMNHR. Professor Mirembe led development of the maternal research agenda, which still needs to be revisited. There is a need for wider consultation in a more systematic way.
- **Organize a leadership/systems conference:** There are many competing conferences, such as those held by AOGU, UPA, nurses, etc. Leadership of these organisations should be brought together, perhaps for a three-day conference.

## Advocacy/engagement

- **The CMNHR should have an advocacy and accountability component.** The CMNHR could share experiences from other countries about successful advocacy and accountability. A new forum for accountability is being promoted by other partners including local non-governmental organizations, which the CMNHR should take advantage of.
- **Annual forum/dialogue for all stakeholders:** It is advisable once or twice a year to bring all stakeholders together to share what the CMNHR has done, discuss the way forward, and strengthen areas of focus. Webinars could be held so that people could hold discussions and not wait for the big conference. The CMNHR needs to collect information locally from different partners as dialogues take place at different forums.
- **Bring civil society on board:** Civil society should be encouraged to have an interest in the CMNHR’s courses. The CMNHR could develop short courses and post them on its website, including materials on short trainings and tips on various available products.
- **Strengthening evidence-based knowledge:** This requires wider sharing of best practices with other learning institutions, policy makers and Parliament.
- **Share best practices with MoH:** The CMNHR should share its best practices with MoH and other areas of the government, and it should be encouraged to replicate good practices, and to sustain them where they exist. Sharing could take place with the MoH technical working group.

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- **Expand to include work on adolescent pregnancy:** Since the CMNHR and School of Public Health are also interested in adolescent pregnancy, which is very linked to maternal and newborn health outcomes, the CMNHR should expand work to engage campaigns such as the White Ribbon Alliance campaign on ending teenage pregnancy.
- **Do more district-based advocacy and stakeholder engagements:** Good practices that have been demonstrated should be scaled up, at least in the districts where they are working. Considerable advocacy is required to ensure that good practices established in Busoga districts are clearly written down and disseminated. The mottos for this work could be “Spread out beyond Busoga” and “Push out more papers”.
- **Engage the beneficiaries:** Women, men and children must all be strongly engaged in different ways so that they understand the need for the behaviour change that they need to implement.
- **Platform for and partnership with the media:** The media plays an important role in partnership with the CMNHR and in advocacy efforts for MNH in the country at large. Sharing of information and knowledge is critical for any centre to make a strong impact. Media work must be viewed as an integral part of policy change efforts.

## Funding

- **Funding for policy engagements:** Policy engagement activities need to be funded. Academic institutions are not funded for doing such work, but only for research.
- **Resources for strengthening technical and financial capacity:** Both technical and financial resources are important and needed. Sources could include the Global Financing Facility for reproductive, maternal, newborn, child and adolescent health. It is necessary to mobilise resources and stakeholders to satisfy the demand being created.
- **Continued Save the Children support:** Save the Children was requested to find a way to continue supporting the CMNHR or to mobilise others to work with it. The CMNHR staff felt that they have tried to do a lot or themselves, including some sustainability efforts: “it’s when you are out there that you see value in these things.”
- **Looking for funding for the CMNHR from non-donor sources:** The CMNHR should complete a business plan; look beyond donor funding to other ways of generating income; or explore possibilities with the private sector.

## Discussion and Recommendations to the CMNHR

The CMNHR was established to bridge the knowledge-policy-implementation gap of maternal and newborn health programs. The need to generate evidence driven and shaped by local demand for knowledge, to guide the implementation and scaling up of newborn care, was the main force behind the CMNHR's creation. The CMNHR was to operate as a knowledge management arm for the National Newborn Steering Committee, to increase access to and availability of reliable knowledge and information so as to stimulate action and improve service delivery.

### CMNHR structure and scope

Sustainability beyond the Save the Children's catalytic funding was evident through efforts to institutionalise within the MakSPH structure, including shared overhead costs, use of the same financial administration structure, and internal meetings on how to sustainably anchor CMNHR within MakSPH. Additionally, the CMNHR has secured new funding through other donors and implementing partners. However, the CMNHR has not yet finalised a strategic plan, communication strategy or business plan, although these processes have been initiated.

The CMNHR is producing considerable useful information to inform policy and practice; however, it has yet to capture the critically important audience. There is a need to develop a communication strategy that will help to digest and package information and then unpack it for the CMNHR's different audiences. Going beyond academic circles to capture the policy and programmatic audiences would be a worthy investment that could in turn offer the opportunity to achieve the desired image of a centre of excellence.

The CMNHR should have a business plan and needs to look beyond donor funding towards other ways of generating income or explore possibilities with the private sector. The CMNHR should be ready to invest resources in strengthening its technical and financial capacity. Sources of additional funding could include the Global Financing Facility for reproductive, maternal, newborn, adolescent and child health (RMNCAH). It needs to mobilise stakeholders as well as resources to satisfy the demand being created. In addition, Save the Children should consider continuing support through investment or technical engagement and mobilise other partners to work with it.

Based on the perceptions of the partners interviewed, the CMNHR has a suboptimal public image. Many stakeholders outside the school did not know details about the CMNHR's activities and governance. Innovative strategies are therefore needed to bring more stakeholders on board. Some mentioned that this was the Director's project and could not offer useful advice because they did not know the CMNHR deeply. There was also confusion among some stakeholders about the mandate and scope of CMNHR, including a concern that the CMNHR was too focused on clinical and medical research and training. Some stakeholders recommended expanding to child and adolescent health while others suggested staying narrow. Given the CMNHR's need for stable funding sources, there are incentives to expand; however, the CMNHR should be cautious about expanding too soon and too wide and should consult MakSPH and other experts. Engaging MakSPH at a more technical level including the MNH department—not just at the administrative level—will be pivotal to sustainability.

### Activities

The CMNHR should try to implement a multi-sectoral approach when looking for new players. Its current MNH research is clinical; hence the need to bring in obstetricians, midwives and nurses. This need for the multi-disciplinary approach focusing on the core disciplines of MNH cannot be over-emphasised.

Although currently the local readership is low, online access remains a viable alternative and should be strengthened. The CMNHR needs to look for innovative ways and attract readership. It is not possible for everybody to attend conferences

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or workshops, but the information from these events, if shared online, could reach a wider readership. This sharing could include clips of short practice sessions to enrich the website and to target health workers and practitioners.

The internal capacity of the CMNHR is reportedly increasing, especially among young researchers who have obtained grants to build their research potential and to encourage a culture of evidence generation, use and dissemination. However, getting all the inputs such as the financial resources and key stakeholders together and coordinating all experts to cohesively impact M NH in Uganda is too big a task for the CMNHR. This requires government leadership, and MoH should be taking the lead in that regard.

## Advocacy/engagement

The CMNHR has developed a research agenda for newborns. However, it is not yet popularised amongst stakeholders and especially at MoH. Avenues for its dissemination and advocacy for its adoption must begin quickly for this research agenda to be useful.

Respondents mentioned that the maternal health research agenda was developed earlier by other people but hastened to say that they had not looked at it. This scenario continues to separate newborns from mothers in the realm of research, yet the two are intricately linked. Currently, the CMNHR is strong on the ‘N’ component of M NH but needs to do more with mothers to complete the package. Efforts by the CMNHR should focus on combining the two research agendas for a stronger M NH front.

The disconnect between the CMNHR and MoH was evident from the partner interviews, even though the CMNHR aims to gather and share knowledge that can impact policy and practice. The CMNHR needs to find a way to target and increase government interest, especially regarding the research agenda and the newborn training curriculum. The most relevant forums would be the Maternal Child Health technical working group and the National Newborn Steering Committee. The CMNHR should also consider navigating through the government system to influence others, rather than focusing on just one individual at MoH; possibly, it should be engaging at a higher level at MoH.

The CMNHR has the potential to become a knowledge hub for all M NH information, but at present it seems to be limited to public health and has very few partners. There is an urgent need to purposefully create a platform that will bring all stakeholders together to share in what the CMNHR has done—the lessons learned and the way forward for the CMNHR—and discuss how to work together to strengthen areas of focus in M NH.

## Key recommendations for the CMNHR

1. Strengthen the CMNHR by establishing an external expert advisory board, finalising a strategic plan with a robust communication strategy, and developing a business plan to attract more funding.
2. Strengthen stakeholder engagement and information sharing mechanisms to showcase the multi-disciplinary approaches employed by the CMNHR and address common misconceptions, such as that the CMNHR does only clinical research or focuses only on newborn health.
3. Popularise the national newborn research agenda, especially to key agencies and MoH.
4. Continue to strengthen, promote and invest in the online system to disseminate information, especially to reach more Ugandans.
5. Further institutionalise the CMNHR at MakSPH through intentional engagement with its other technical departments.
6. Identify and undertake innovative approaches to incorporate local evidence into policy through strategic advocacy and buy-in from key players, especially within MoH and through the National Newborn Steering Committee.

## Conclusion

The CMNHR provides an example of how a centre of excellence for M NH research can contribute to strengthening information, research and capacity building. With supportive individuals and institutions, appropriate investment, and

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buy-in from key stakeholders, a centre of excellence has the potential to contribute to evidence-based knowledge, policy and effective implementation at scale:

1. It can build MNH expertise in a country through training and nurturing the next generation of academics and champions, program implementers, and frontline health workers.
2. It can facilitate and centralise MNH-related research projects to ensure multi-sector, cross-cutting learning across disciplines, technical areas and institutions.
3. It can strengthen MNH knowledge management and information sharing through multiple channels (newsletter, blogs, website, conferences, seminars) to influence policy makers, program managers, academics, and civil society.
4. It can ensure that new and adapted MNH training modules are evidence-based and developed in collaboration with academics and professional associations.
5. It can develop and monitor the implementation of an evidence-based, robust, widely owned national MNH research agenda.

The main lessons drawn from this evaluation that should be considered by stakeholders interested in starting, strengthening or investing in a centre of excellence for MNH research include the following:

- **Key individuals and institutions involved in setting up the CMNHR influence the ability to establish and sustain the centre:** The CMNHR was founded by a local, qualified, well-known and passionate champion, with support from leaders at MakSPH. The CMNHR received guidance and mentorship from well-established centres and experts in the field. The ongoing support from MakSPH facilitated the setup and ensured respect from partners.
- **Demand and need for a centre of excellence:** The CMNHR filled a perceived gap in Uganda for knowledge management and dissemination, research and capacity building in the area of maternal and newborn health.
- **Catalytic funding:** The CMNHR benefited from a three-year investment by Save the Children and harnessed funding from research projects, enabling a strong foundation.
- **Recognition that it takes time to set up a centre of excellence:** Bureaucratic barriers delayed some activities, and it took time to build rapport and deliver on objectives in order to build the CMNHR's visibility and demonstrate its value.
- **Intentional and continuous engagement with key stakeholders supports achievement of objectives:** Engagement with MoH, MakSPH, and professional associations and implementing partnerships has been central to the CMNHR's achievements and at the forefront of some of its challenges. Regular visibility through continuous communications, e.g. the newsletter and participation in meetings, ensured that partners knew about the CMNHR; however, it was not sufficient to facilitate the translation of evidence into policy and practice.
- **Flexibility to grow in capacity and scope:** Over the initial three-year period, the CMNHR staff capacity grew (both in numbers and capacity), took on new projects, and expanded its scope from MNH to MNCAH.

## Appendices

### Appendix 1: List of the CMNHR's publications by project

#### YOUNG RESEARCHERS

Kabwijamu L, Waiswa P, Kawooya V, Nalwadda CK, Okuga M, Nabiwemba EL. Newborn Care Practices among Adolescent Mothers in Hoima District, Western Uganda. *PLoS One.* 2016;11(11):e0166405.

Mutanda JN, Waiswa P, Namutamba S. Community-made mobile videos as a mechanism for maternal, newborn and child health education in rural Uganda; a qualitative evaluation. *Glob Health Action.* 2016;16(4):923-8.

Nantale G, Tumwesigye NM, Kiwanuka N, Kajjura R. Prevalence and factors associated with food insecurity among women aged 18-49 years in Kampala slums Uganda: a mixed methods study. *Journal of Food Security.* 2017;5(4):120-8.

#### UNEST

Waiswa P, Pariyo G, Kallander K, Akuze J, Namazzi G, EKirapa-Kiracho E, et al. Effect of the Uganda Newborn Study on care-seeking and care practices: a cluster-randomised controlled trial. *Glob Health Action.* 2015;8:24584.

Waiswa P, Namazzi G, Kerber K, Peterson S. Designing for action: adapting and implementing a community-based newborn care package to affect national change in Uganda. *Glob Health Action.* 2015;8(1):24250.

Waiswa P, Akuze J, Peterson S, Kerber K, Tetui M, Forsberg BC, et al. Differences in essential newborn care at birth between private and public health facilities in eastern Uganda. *Glob Health Action.* 2015;8(1):24251.

Sitrin D, Guenther T, Waiswa P, Namutamba S, Namazzi G, Sharma S, et al. Improving newborn care practices through home visits: lessons from Malawi, Nepal, Bangladesh, and Uganda. *Glob Health Action.* 2015;8(1):23963.

Timsa L, Marrone G, EKirapa E, Waiswa P. Strategies for helping families prepare for birth: experiences from eastern central Uganda. *Glob Health Action.* 2015;8(1):23969.

Okuga M, Kemigisa M, Namutamba S, Namazzi G, Waiswa P. Engaging community health workers in maternal and newborn care in eastern Uganda. *Glob Health Action.* 2015;8(1):23968.

Namazzi G, Waiswa P, Nakakeeto M, Nakibuuka VK, Namutamba S, Najjemba M, et al. Strengthening health facilities for maternal and newborn care: experiences from rural eastern Uganda. *Glob Health Action.* 2015;8(1):24271.

Nalwadda CK, Waiswa P, Guwatudde D, Kerber K, Peterson S, Kiguli J. 'As soon as the umbilical cord gets off, the child ceases to be called a newborn': sociocultural beliefs and newborn referral in rural Uganda. *Glob Health Action.* 2015;8(1):24386.

Kiguli J, Namusoko S, Kerber K, Peterson S, Waiswa P. Weeping in silence: community experiences of stillbirths in rural eastern Uganda. *Glob Health Action.* 2015;8(1):24011.

Kayemba Nalwadda C, Waiswa P, Kiguli J, Namazzi G, Namutamba S, Tomson G, et al. High compliance with newborn community-to-facility referral in eastern Uganda: an opportunity to improve newborn survival. *PLoS One.* 2013;8(11):e81610.

Kayemba Nalwadda C, Guwatudde D, Waiswa P, Kiguli J, Namazzi G, Namutumba S, et al. Community health workers: a resource for identification and referral of sick newborns in rural Uganda. *Trop Med Int Health.* 2013;18(7):898-906.

Nalwadda Kayemba C, Naamala Sengendo H, Ssekitooleko J, Kerber K, Kallander K, Waiswa P, et al. Introduction of newborn care within integrated community case management in Uganda. *Am J Trop Med Hyg.* 2012;87(5 Suppl):46-53.

Waiswa P, Peterson SS, Namazzi G, EKirapa EK, Naikoba S, Byaruhanga R, et al. The Uganda Newborn Study (UNEST): an effectiveness study on improving newborn health and survival in rural Uganda through a community-based intervention linked to health facilities—study protocol for a cluster randomized controlled trial. *Trials.* 2012;13:213.

#### EQUIP

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Hanson C, Waiswa P, Marchant T, Marx M, Manzi F, Mbaruku G, et al. Erratum to: Expanded Quality Management Using Information Power (EQUIP): protocol for a quasi-experimental study to improve maternal and newborn health in Tanzania and Uganda. *Implementation Science*: IS. 2015;10:152.

Baker U, Okuga M, Waiswa P, Manzi F, Peterson S, Hanson C. Bottlenecks in the implementation of essential screening tests in antenatal care: Syphilis, HIV, and anemia testing in rural Tanzania and Uganda. *Int J Gynaecol Obstet*. 2015;130 Suppl 1:S43-50.

Marchant T, Schellenberg J, Peterson S, Manzi F, Waiswa P, Hanson C, et al. The use of continuous surveys to generate and continuously report high quality timely maternal and newborn health data at the district level in Tanzania and Uganda. *Implementation Science*: IS. 2014;9:112.

Hanson C, Waiswa P, Marchant T, Marx M, Manzi F, Mbaruku G, et al. Expanded Quality Management Using Information Power (EQUIP): protocol for a quasi-experimental study to improve maternal and newborn health in Tanzania and Uganda. *Implementation Science*: IS. 2014;9(1):41.

Marchant T, Schellenberg J, Peterson S, Manzi F, Waiswa P, Hanson C, et al. The use of continuous surveys to generate and continuously report high quality timely maternal and newborn health data at the district level in Tanzania and Uganda. *Implementation Science*: IS. 2014;9:112.

## **INDEPTH Network**

Kadobera D, Waiswa P. Comparing performance of methods used to identify pregnant women, pregnancy outcomes, and child mortality in the Iganga-Mayuge Health and Demographic Surveillance Site, Uganda. 2017;10(1):1356641.

## **MANIFEST**

Ajeani J. A cascade model of mentorship for frontline health workers in rural health facilities in eastern Uganda: processes, achievements and lessons. *Glob Health Action*. 2017;10(sup4):1345497.

Ekirapa-Kiracho E. Maternal and neonatal implementation for equitable systems: A study design paper. *Glob Health Action*. 2017;10(sup4):1346925.

Ekirapa-Kiracho E. 'Nurture the sprouting bud; do not uproot it': using saving groups to save for maternal and newborn health: lessons from rural eastern Uganda. *Glob Health Action*. 2017;10(sup4):1347311.

Kisakye AN, Muhamuza Kananura R, Ekirapa-Kiracho E. Effect of support supervision on maternal and newborn health services and practices in rural eastern Uganda. *Glob Health Action*. 2017;10(sup4):1345496.

Muhamuza Kananura R, Tetui M. Effect of a participatory multisectoral maternal and newborn intervention on birth preparedness and knowledge of maternal and newborn danger signs among women in eastern Uganda: a quasi-experimental study. 2017;10(sup4):1362826.

Namazzi G. Working with community health workers to improve maternal and newborn health outcomes: implementation and scale-up lessons from eastern Uganda. *Glob Health Action*. 2017;10(sup4):1345495.

Namusoke Kiwanuka S. Balancing the cost of leaving with the cost of living: drivers of long-term retention of health workers: an explorative study in three rural districts in eastern Uganda. *Glob Health Action*. 2017;10(sup4):1345494.

Ekirapa-Kiracho E, Namazzi G, Tetui M, Mutebi A, Waiswa P, Oo H, et al. Unlocking community capabilities for improving maternal and newborn health: participatory action research to improve birth preparedness, health facility access, and newborn care in rural Uganda. *BMC Health Serv Res*. 2016;16(Suppl 7):638.

Kananura RM, Tetui M, Mutebi A, Bua JN, Waiswa P, Kiwanuka SN, et al. The neonatal mortality and its determinants in rural communities of eastern Uganda. *Reprod Health*. 2016;13:13.

Kananura RM, Wamala R, Ekirapa-Kiracho E, Tetui M, Kiwanuka SN, Waiswa P, et al. A structural equation analysis on the relationship between maternal health services utilization and newborn health outcomes: a cross-sectional study in eastern Uganda. *BMC Pregnancy Childbirth*. 2017;17(1):98.

Namazzi G, N KS, Peter W, John B, Olico O, A AK, et al. Stakeholder analysis for a maternal and newborn health project in Eastern Uganda. *BMC Pregnancy Childbirth*. 2013;13:58.

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## Appendix 2. List of main activities

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SN	Name	Year	Number	Comment
<b>Curricula and trainings</b>				
	Guidelines on caring for small and sick babies in hospitals (advanced newborn care)	2015-2016	1	Developed in collaboration with Uganda Paediatric Association
	Health worker trainings on caring for small and sick newborns in hospitals		2	One pilot in Nsambya/Mulago, the other in Hoima RRH. Total of 51 health workers trained.
	Lives Saved Tool (LiST) curriculum	2015	1	Co-funding from Johns Hopkins University
	Trainings in LiST	2014-2016	4 national, 2 international (Dubai and, Washington, DC)	76 trained in the national trainings
	Helping Babies to Survive training	4-6 April 2017	30 participants	Done in collaboration with Aga Khan EA
	Helping Mothers Survive training	6 April 2017	30 participants	Done in collaboration with Aga Khan EA
	Pronto training	2016-2017	Over 250 HWs trained	Done in collaboration with Preterm Birth Initiative. Over 250 HWs in east central region trained.
<b>Conferences and symposia</b>				
	2015 MNH conference	15 <sup>th</sup> -17 <sup>th</sup> June 2015	Over 300 participants	Theme: “Moving from policy to practice: saving mothers and newborns at national and local levels”
	2016 MNH symposium	19 <sup>th</sup> Oct 2016	250 participants	Theme: “Maternal and newborn care in Uganda: high-impact innovations for scaling up”
	An East African Symposium on Sustainable Strategies for Achieving the SDGs	7-8 April 2017	120 participants	Organised with Aga Khan East Africa
<b>Grantees</b>				
	2014 grantees		3	These received small grants to do their final theses (see separate list attached for details)
	2015 grantees		6	
	2016 grantees		6	
<b>Communications</b>				
	MNCH website	2014/15	1	Mnh.musph.ac.ug
	Blogs	2014-17	26	Blogs available on website

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	E-newsletters	2015-17	47	This is an e-newsletter sent to over 1,500 recipients globally.
	Seminars	2015-17	10	Invited external speakers including global figures.
	Archiving MNH publications from 2010 to date	2010-17	Over 200 publications	These are archived on the website; links provided
	Documentaries on MNH in Uganda		7 produced	These can be accessed on the You Tube channel “Maternal & Newborn Health@MakSPH” ( <a href="https://www.youtube.com/channel/UC0UQM1Eniy5k3-u8wEUZtBg">https://www.youtube.com/channel/UC0UQM1Eniy5k3-u8wEUZtBg</a> )
<b>Tools and innovations</b>				
	Register for small and sick babies		1	Has been taken up by MoH
	Foot size card		1	Developed earlier with other researchers
<b>Research agenda</b>				
	Newborn research agenda for Uganda	2016	1	Developed and disseminated to stakeholders
<b>Projects beyond SNL funding</b>				
	Ongoing and recently completed projects		13	See end of project report for more details
	New grants won		3	ELMA: work on MNH UNICEF: work on newborn care in Karamoja and Westnile regions Living Goods: work on family planning

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## Appendix 3: Questionnaires used for data collection

Makerere University Centre of Excellence for Maternal-Newborn Health Research Evaluation

Tool 1: Key informant interview guide – Individuals actively engaged in the CMNHR

*Check box that corresponds to participant type:*

- CMNHR staff
- Save the Children staff involved in establishment of CMNHR
- Current members of the CMNHR governance board

<b>Interview Number:</b>	<b>Interview date</b> <u>   _D_ _D_ _M_ _M_ _Y_ _Y_ </u> <b>DD/MM/YY</b>
<b>Interviewer:</b>	
<b>Interviewee Name:</b> _____	
<b>Interviewee Title/Role:</b> _____ _____	
<b>Interviewee Affiliation:</b> _____ _____	

### **Introductory Script:**

*Good morning/afternoon, I would like to thank you for giving the time to speak with me today. We would like to learn more from you about The Makerere Centre of Excellence for Maternal and Newborn Health – which we will refer to from now on as “the Centre”. Firstly, let me introduce myself. I am [name] and I have been engaged by Save the Children to conduct a study on the Centre. The purpose of this study is to evaluate the progress to date of the CMNHR, in order to inform actions to improve and sustain it beyond 2017. This evaluation will provide a good understanding of the processes for establishing a maternal and newborn health Center of Excellence at a university in Africa. It will also determine the impact of the Centre in terms of number of people reached through knowledge dissemination and number of people trained through extended and new courses. Information generated from this study will inform the establishment of other such centers of excellence as well as support the Centre in refining their current efforts to sustain after the end of the Saving Newborn Lives project of Save the Children. We want to hear your opinions about the Centre. This is a study approved by the ethical review boards at Save the Children and at Makerere University.*

*You have been asked to participate in this interview because you have been involved in the establishment, running and/or governance of the Centre. We are interested to hear your views and opinions during the interview. As such, there is no right or wrong answer to any of the questions we may ask. No information that might identify you, such as your name and position will be reported when results are presented. You are free to choose to not answer questions if you wish.*

*You've probably noticed the microphone. We'd like to tape record the session because we don't want to miss any of your comments. People often say very helpful things in these discussions and it can't be written fast enough to get them all down.*

*We would like to ask you whether or not you wish to participate before we proceed. You do not have to participate if you do not wish to do so. I will read through the written consent form now.*

[Read out informed written consent & obtain signature)     Consent Obtained

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*[If consent to record is provided, make sure that the recorder is turned on here.]*

## Interview Questions

### SECTION I. ESTABLISHMENT AND OPERATIONS OF THE CENTRE

*Thank you very much for agreeing to participate. To start, we would like to ask some questions about how the Centre was established and how it is run.*

1) Can you please describe to me how the Centre was established?

➤ *Probes:*

- a. What were the objectives of the Centre when first established?
- b. What factors facilitated the establishment of the Centre?
- c. What barriers were faced in establishing the Centre?
  - i. Of the barriers you just spoke of, what was done to address them?

2) What individuals and organizations were involved in establishing the Centre?

➤ *Probes:*

- a. What were their roles?
- b. Which of the original individuals and organizations are still active in the Centre?
- c. Who is no longer involved?
- d. For what reason are they no longer involved?
- e. Who are new players?
  - i. For what reasons?
  - ii. How did they become engaged?

3) How is the Centre structured?

➤ *Probes:*

- a. For each element of the structure (secretariat, advisory board, other): What are its roles/responsibilities?
- b. Who is responsible for decision-making?
- c. What is relationship of the Centre to MkSPH (financial, administrative, governance, other)?

4) Let's talk about the Centre's Secretariat. Could you tell me what you know about it?

➤ *Probes:*

- a. When was it established? What was the process for establishing the secretariat?
- b. How is it structured (what staff, what roles)?
- c. How often do they meet?
- d. How are its actions points established?
- e. To whom is the Secretariat accountable? What is the relationship of MkSPH to the Secretariat (frequency of meetings, what is included in reporting)? What is the relationship of the Advisory Board to the Secretariat (frequency of meetings, what is included in reporting)?
- f. How often do they meet/report to the Makerere School of Public Health on progress?

5) Now let's talk a little bit about the Advisory Board. Could you tell me what you know about it?

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➤ *Probes:*

- a. When was it established? What was process for establishing the advisory board?
- b. How is it structured (numbers, representation)?
- c. How often do they meet?
- d. How are its actions points established?
- e. Are their actions points established and followed up after each meeting?
- f. Have there been challenges that need to be addressed for sustainability, accountability and ownership?

*Now that we have talked about the establishment of the Centre and its structure, let's discuss its core activities.*

6) What approaches has the Centre carried out to share and disseminate information related to MNH?

- *[POSSIBLE RESPONSES MAY INCLUDE NEWSLETTER, WEBPAGE, CONFERENCES, ETC.]*
- *Probes [ASK EACH PROBE FOR EACH APPROACH MENTIONED BY THE INTERVIEWEE]:*

- a. What is the target audience for [approach]?
- b. Who has the [approach] been most successful in reaching?
- c. What kinds of information is shared and disseminated via [approach]?
- d. What challenges have been encountered via the [approach]?
- e. What recommendations would you have improving [approach]?

7) What activities has it carried out to date to strengthen internal and external technical capacity for maternal and newborn health in Uganda?

8) What activities has the Centre carried out to date to establish a national MNH research agenda?

• *Probes:*

- a. What have been the challenges?
- b. What are the Centre's recommendations to improve the research agenda?
- c. To what extent has the Centre been able to monitor progress on Uganda's MNH research agenda?

## SECTION II: OUTCOMES AND IMPACT OF THE CENTRE

*Now that we have talked about the Centre's establishment, its structure and its core activities, we would like to discuss what the Centre has been able to achieve to date.*

9) In your opinion, what have been the Centre's major accomplishments?

10) In your opinion, to what extent has the Centre been successful in strengthening technical capacity for maternal and newborn health in Uganda?

*[TO INTERVIEWER – LOOKING FOR EXAMPLES SUCH AS, INCREASING NUMBER OF POST-GRADUATE STUDENTS FOCUSING ON MNH, PROVIDING IN-SERVICE COURSES FOR HEALTH WORKERS, STRENGTHENING PRE-SERVICE CURRICULUM]*

• *Probes:*

- a. What has been the Centre's most valuable contribution in this area? Why?
- b. What have been the successes in strengthening technical capacity?
- c. What have been the challenges in strengthening technical capacity?

11) In your opinion, to what extent has the Centre been able to improve access to evidence-based knowledge, including MNH policy and research?

• *Probes:*

# Evaluation Report

- a. What has been the Centre's most valuable contribution in this area? Why?
- b. What have been the Centre's successes in strengthening technical capacity?
- c. What have been the Centre's challenges in strengthening technical capacity?

12) In your opinion, to what extent has the Centre been successful in establishing and monitoring a national MNH research agenda?

- *Probes:*

- a. What are the factors have facilitated or supported the Centre in establishing and monitoring a national MNH research agenda?
- b. What challenges to success have arisen in this process?

## SECTION III: MAINTENANCE AND SUSTAINABILITY OF THE CENTRE

*Now that we have talked about the Centre's outcomes and impact, we would like to explore your thoughts on its sustainability, over time.*

13) How has the Centre evolved since it was first established?

- *Probes:*

- a. How has the Centre's objectives evolved?
- b. How have the Centre's resources changed?
- c. How has the Centre's staffing changed?

14) Is there a strategic vision and plan for the Centre?

- *Probes:*

- a. When was it established?
- b. For what time period does apply to?
- c. How was it developed?
- d. Who developed it?
- e. How will it be operationalized?

15) Can you please describe to me how the Centre has been supported since it started in 2014?

- *Probes:*

- a. How has the Centre been resourced?
- b. Who are the key players that drive support?
- c. What role does the Makerere School of Public Health play in the support?
- d. Do you have any other thoughts to share on how it has been sustained or what needs to be done to sustain the Centre?

### Closing Script:

*This concludes our interview questions today. Do you have anything else related to the Centre that you wish to share with us?*

*Thank you for sharing your time and experiences with us.*

Makerere University Centre of Excellence for Maternal-Newborn Health Research Evaluation  
Tool 2: Key informant interview guide – Other key national level stakeholders in MNH in Uganda

To be asked from national level stakeholders in MNH in Uganda including representatives from:

- Other academic institutions
- Government officials

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- Implementing partners
- Professional associations

Interview Number:	Today's date I_D_I_D_J_M_J_fv1_I_Y_J_V_I DD/MM/YY
Interviewer:	
Interviewee Name: _____ Interviewee Title/Role: _____ Interviewee Affiliation: _____	

## Introductory Script:

*Good morning/afternoon, I would like to thank you for giving the time to speak with us in this interview. We would like to learn more from you about the Makerere Centre of excellence for maternal and newborn health – which we will refer to from now on as “the Centre”. Firstly, let me introduce myself. I am [name] and I have been engaged by Save the Children to conduct a study on the Centre. Our main focus is to record, describe and evaluate the effect of the Centre on maternal and newborn health in Uganda. This evaluation will provide a good understanding of the processes for establishing a maternal and newborn health Center of Excellence at a university in Africa. It will also determine the impact of the Centre in terms of number of people reached through knowledge dissemination and number of people trained through extended and new courses. Information generated from this study will inform the establishment of other such centers of excellence as well as support the Centre in refining their current efforts to sustain after the end of the Saving Newborn Lives project of Save the Children. We want to hear your opinions about the Centre. This is a study approved by the ethical review boards at Save the Children and at Makerere University.*

*In the interview we will be interested to hear your views and opinions. As such there is no right or wrong answer because you are only expected to share your experiences. No information that might identify you, such as your name and position will be reported when results are presented.*

*You've probably noticed the microphone. We'd like to tape record the session because we don't want to miss any of your comments. People often say very helpful things in these discussions and it can't be written fast enough to get them all down.*

*We would like to ask you whether or not you wish to participate before we proceed. You do not have to participate in this discussion if you do not wish to do so. I will read through the written consent form now.*

*[Read out informed written consent & obtain signature]*

**Consent Obtained**

*[If consent to record is provided, make sure that the recorder is turned on here.]*

## Interview Guide

### SECTION I. ESTABLISHMENT AND OPERATIONS OF THE CENTRE

*Thank you very much for agreeing to participate. To start, we would like to ask some questions about how the Centre was established and how it is run.*

16) Can you please explain your understanding of why the Centre was established?

➤ *Probes:*

- What were the Centre's objectives?

17) Can you please explain your understanding of how the Centre links to the Makerere School of Public Health?

### SECTION II: OUTCOMES AND IMPACT OF THE CENTRE

18) How has the Centre contributed to the strengthening of technical capacity for maternal and newborn health in Uganda?

*[TO INTERVIEWER – LOOKING FOR EXAMPLES SUCH AS SETTING RESEARCH AGENDA, INCREASING NUMBER OF POST-GRADUATE STUDENTS FOCUSING ON MNH, PROVIDING IN-SERVICE COURSES FOR HEALTH WORKERS, STRENGTHENING PRE-SERVICE CURRICULUM, KNOWLEDGE SHARING]*

➤ *Probes:*

- What courses, in-service trainings, materials, and other items have been developed to strengthen capacity?
- How would you demonstrate that capacity has been strengthened (for example in research, practice, policy development)?
- What have been some of the challenges?
- What would be your recommendations for other Centres or for your work in this area moving forward?

19) To what extent does the Centre improve access to evidence-based knowledge including MNH policy and research?

➤ *Probes:*

- Describe to me relevant platforms or mechanisms the Centre uses to improve access to knowledge?

*[TO INTERVIEWER – LOOKING FOR EXAMPLES SUCH AS WEBPAGE, NEWSLETTER, CONFERENCES, COURSES, GUIDELINES, POLICY BRIEFS, BLOGS, RESEARCH ARTICLES, WORKSHOPS]*

- Which of these platforms has been most effective and why? Give specific examples.
- Which of these platforms has been least effective and why? Give specific examples.
- Of these platforms discussed, which would you advise are priority to strengthen and sustain in the future for the Centre? Give specific examples.

20) In your opinion, which workshops or courses developed by the Centre have had the most lasting impact for Ugandan colleagues working in MNH? For what reasons do you feel so?

21) In your opinion, which policy briefs from the Centre have had the most impact on influencing policy in Uganda and why? For what reasons do you feel so?

22) We have a couple of questions about the Centre's webpage. Are you aware of the Centre's webpage?

➤ *Probes:*

- If so, how did you learn about the webpage? *[TO INTERVIEWER: LOOKING FOR SOURCE OF INFORMATION ABOUT THE WEBSITE -- E.G. FRIEND, COLLEAGUE, MAKSPH NOTICE BOARD, MAKSPH NEWSLETTER, COURSE, CONFERENCE/MEETING. DO NOT LIST OUT OPTIONS.]*
- How often do you access the webpage?
- For what kinds of information do you use the webpage?

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23) Do you receive the newsletter? If so, what information do you find most useful?

## SECTION III: KEY ACCOMPLISHMENTS AND SUSTAINABILITY OF THE CENTRE

24) In your opinion, what have been the Centre's major accomplishments?

➤ *Probes:*

- a. To what extent do you think that these accomplishments have been aligned with the original objectives of the Centre?\*

25) Looking forward, what suggestions would you offer on how the Centre efforts can be sustained?

➤ *Probes:*

- a. What needs to be done in terms of finances, administration, governance, other

### Closing Script:

*This concludes our interview questions today. Do you have any additional comments about the Centre that you wish to share with us?*

*Thank you for sharing your time and experiences with us.*

## References

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