MAKERERE UNIVERSITY

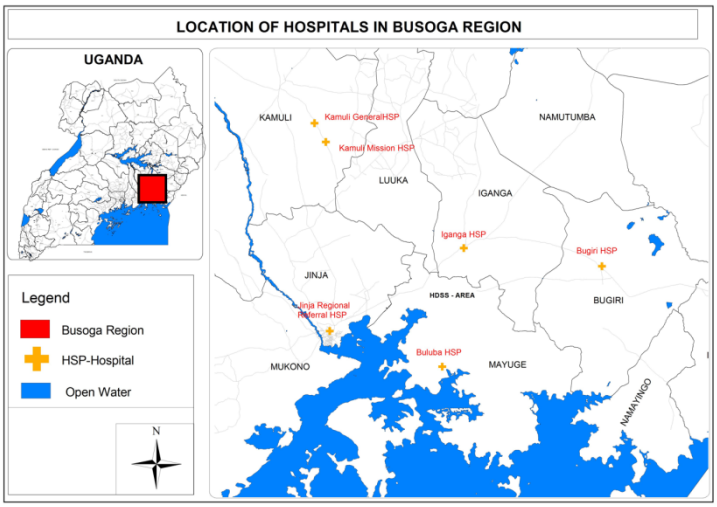
Regionalisation of health care: Experiences and lessons from the Maternal and Newborn Scale up (MANeSCALE) project in Eastern Uganda

The Problem

Uganda still has unacceptably high maternal and neonatal mortality rates. Annually, there are about 85,000 deaths around the time of birth. Of these deaths, 6000 are maternal, 39,000 newborns and 40,000 still births (ref sharpened plan). A critical gap for Uganda is that there's a policy to implementation gap especially in implementing maternal and newborn interventions at scale mostly in hospitals and district health systems. Substantial gaps in the quality of care exist across the continuum of women's and children's health. Many women and newborns do not receive quality care even when they have contact with the health system, before, during and after pregnancy and childbirth. In addition to this, hospitals and health facilities lack an adequate health information system especially for neonatal health as the MOH is yet to develop them. Emerging evidence suggests that strengthening of individual health units is not sufficient. Models of care that strengthen both hospitals and referring lower level units are needed and hence a regional approach.

Study setting

This study which started in 2013 and is on-going is found in the East Central (Busoga) region which has a population of about 4,000,000 people (approximately 10% of Uganda's population). This region also includes some islands on Lake Victoria and forested areas. Busoga region has ten districts – Iganga, Mayuge, Bugiri, Kamuli, Kaliro, Namutumba, Namayingo, Luuka, Buyende and Jinja.



This study is conducted in six hospitals and 6 high volume Health Centre IVs in the region. The hospitals include Jinja Regional Referral Hospital, and five general hospitals two of which are private not for profit mission hospitals (Kamuli Mission and St Francis Buluba Hospitals) and 3 District General hospitals (Iganga, Bugiri and Kamuli). All these hospitals provide general preventive, promotional, outpatient curative, maternity, inpatient health services, emergency surgery, blood transfusion, laboratory and other general services. In addition, they receive cases referred from the lower health units. The health Centre IVs included are: Busesa, Bumanya, Budondo, Kigandalo, Namwendwa and Buyinja. These HC IVs were selected based on the high volume of patients that they receive and manage.

Project activities include

1. Skills based training of a critical mass of health workers in the study hospitals and health Centre IVs in basic Emergency Obstetric and Newborn care course as well as an advanced newborn care course. Attained skills are strengthened and sustained through monthly mentorship and quarterly support supervision.

2. Strengthening leadership capacity and support for continuous problem identification and solving. This is done through engagement of leaders such as hospital directors, District Health Officers, heads of maternity and paediatric units, Ministry of Health and other partners in facilitated peer to peer meetings within the individual hospitals, health facilities and at regional level. The mentors also facilitate facility service delivery reorganization, better use of available resources and enhanced referral network among the health facilities at facility level.

3. Strengthening use of data as a key tool for decision making implementation. We provide patient (maternal and newborn) charts as well sick newborn and follow up registers tools to facilitate capture, easy analysis and summarizing maternal and neonatal events for daily, weekly and monthly reviews, and for use during mentorship and peer to peer meetings.

4. Revamping and strengthening maternal and newborn perinatal audits in all the study sites

5. Improve referral and communication within and between hospitals and high volume lower level facilities. We did this by developing caller groups within and between hospitals and health centre IVs.

6. Catalytic provision of key drugs, supplies and equipment for maternal and newborn care. This equipment supplied included radiant warmers, phototherapy machines, incubators, cots, patient monitors, pulse oximeters etc. One of the targets was to functionalize neonatal care units in all the study facilities.

7. Engagement of regional and national leaders throughout the entire process of design, set up, implementation and monitoring. Consultative meetings at the design stage were held in addition to performance review meetings for monitoring and evaluation of the project.

Key Findings

Establishment of newborn intensive care units (NICUs)

In all the six hospitals and 5 of the 6 health centre IVs, with support, reorganization was done to create space for NICUs with resuscitation and KMC corners as well as isolation space for babies with sepsis. All these NICUs were remodelled and given a facelift. In the remaining one health Centre IV, the project constructed and expanded space in maternity units to create a newborn care unit. The NICUs were then equipped with key newborn care equipment such as radiant warmers, phototherapy machines, incubators, cots, oxygen concentrators, patient monitors, pulse oximeters etc. We also provided essential drugs such as antibiotics, anticonvulsants etc; and supplies such as suckers, nasal prongs, feeding tubes etc. The establishment of these NICUs has increased health worker motivation to care for small and sick newborns; reduced referral and ultimately reduced neonatal mortality. Significantly, it has increased the number of babies coming for care including those born from outside the study facilities.

"…..We are now acting like a District Hospital because other facilities are referring babies to us to manage because of the newborn unit and equipment Makerere has put in place. We no-longer refer and we now have many newborns babies admitted unlike before…… "[midwife, Health Centre IV]

NICUs: On left: Iganga Hospital. On Right: Namwendwa HC IV

Building capacity and skills of health workers to manage high risk babies and mothers

A total of 138 health workers across the six hospitals and the six health centres were trained and mentored in management of maternal and newborn conditions/complications. Trainees included midwives, nurses, medical doctors and clinical officers. This has increased confidence among care providers to manage sick and high risk babies; and mothers.

"…..We have more babies than before because mothers now are confident we can look after the low birthweights unlike before when they would run away…."[midwife, hospital]

Institutionalisation and strengthening maternal and perinatal audit/reviews (MPDR) in facilities

The MPDRs have been identified as one the high impact interventions that can reduce mortality. Between 2015-2017, we built capacity and institutionalized MPDR in hospitals. For

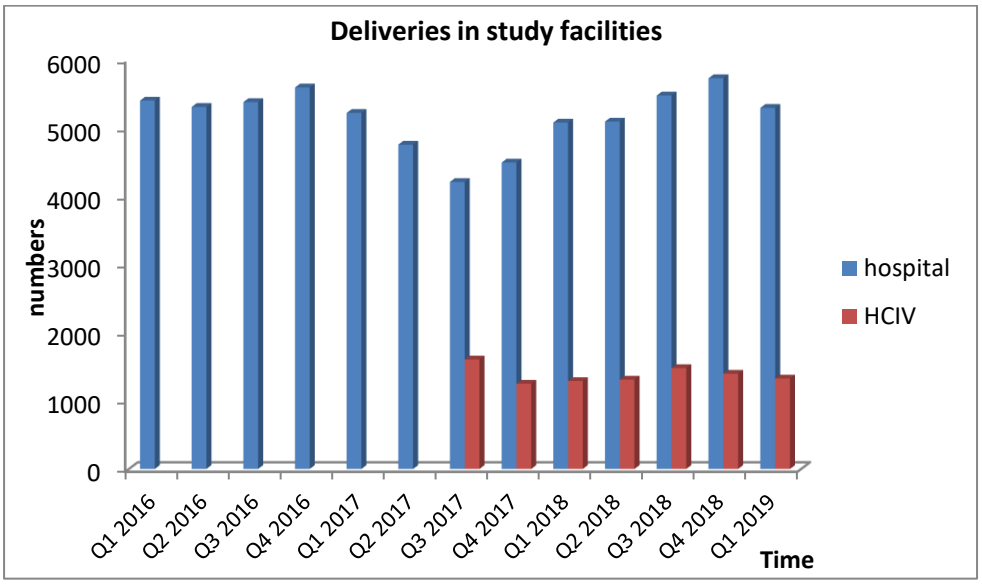
health centre IVs, this was done between 2017-2018. Currently, all hospitals regularly conduct audits without external technical support. However, Health Centre IVs still require some technical support. With audit teams in place, our focus is now on supporting teams to translate recommendations into actions; and strengthening the linkage of between lower level facilities and hospitals during MPDR to allow for a more grounded MPDR system.

MPDR in Bugiri hospital

Outcomes

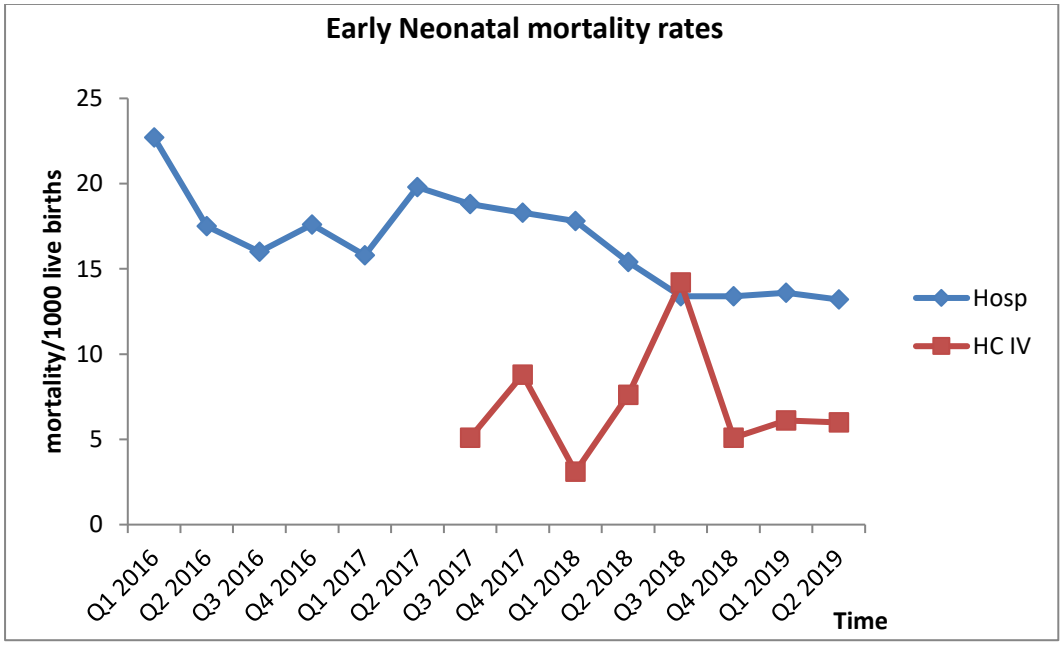
a) Deliveries

On average, the hospitals in this region conduct a total of about 5000 deliveries per month while the lower facilities in the study conduct an average of 1250 deliveries per month. The trends have remained almost constant at all levels.



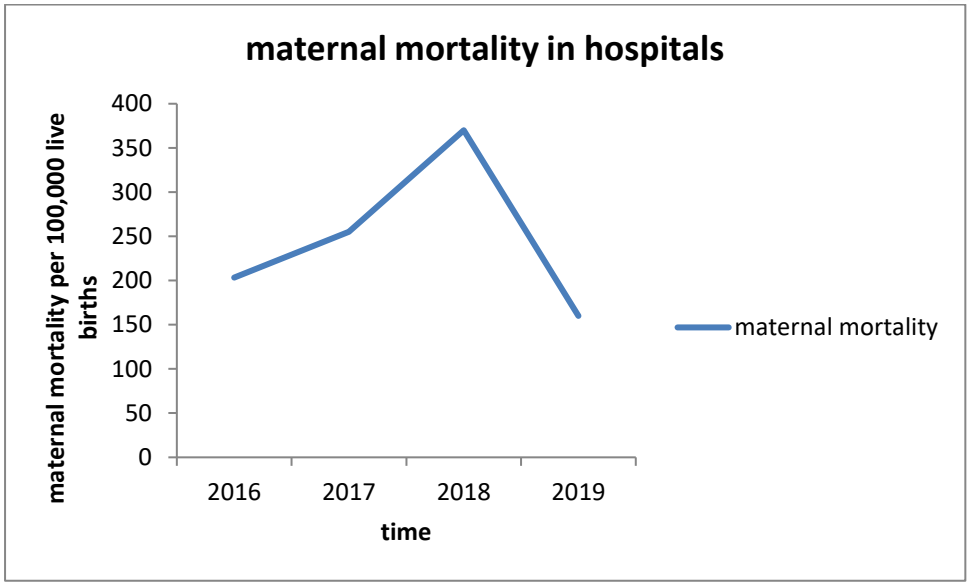
b) Reduced early neonatal mortality rates after an initial false rise

At hospital level, there was a sharp rise in early neonatal mortality rate in Q2 2017 due to data strengthening activities including provision of charts, sick newborn register and emphasis on data. The facilities started recording neonatal deaths in the respective charts. At hospital level, between Q1 2016 and Q2 2019, we reduced neonatal mortality by 41.8%. In the lower level facilities, the spike in Q3 2018 was due to data strengthening activities and thus all the deaths were recorded. From this point on, there is a gradual reduction in mortality due to functionalization of the newborn care units in the lower level facilities. Neonatal mortality reduced by 57.7% from Q3 2018 to Q2 2019.



c) Reduced maternal mortality rates

The trends for maternal mortality have been fluctuating since 2016 despite the interventions such as mentorship and coaching in facilities. In Q1 2019, we see a downward trend (reduction) in mortality in both hospitals.



What did we have an impact?

Initially, there was a faster reduction in maternal mortality compared to neonatal mortality. This is because the set-up for maternal care during labour at the hospitals and health centre IVs was moderately well established compared to the neonatal care component at the beginning of the study. However, in 2018 and early 2019, we strengthened and established neonatal care units (NICUs) at both levels and thus see a reduction in neonatal mortality.

We established a regional network of facilities (hospitals and health centre IVs) with improved service delivery for MNH, better referral and communication, and emergence of MNH champions.

We developed a sick newborn register for use at hospital and health centre IV level to facilitate capturing of data on small and sick babies. These data was initially not captured.

We, together with Uganda Paediatric Association, developed an advanced course for management of small and sick newborns. This course has been endorsed by the Ministry of Health.

We established newborn follow-up clinics in hospitals. These clinics run once a week on a particular day and serve as a review point for preterms and sick newborns.

Leadership engagement and use of emerging champions to drive the maternal and newborn agenda within the region. This led to formation of a WhatsApp group where all the health leaders and health workers within the region, some members from the ministry of health and

also members from research groups within the region are involved. This has provided a platform for quick communication and problem solving.

Challenges

Despite all the successes, we also faced some challenges during implementation. These included:

1- Bureaucracy and delays in the procurement processes by the university therefore leading to delays in procurement of drugs, supplies, equipment and also renovation of the facilities. We tried to mitigate this by engaging the procurement personnel in MakSPH to speed up the process.

2- General health system challenges such as inadequate human resource, limited supply of drugs and supplies. This negatively impacts on the quality of services provided.

3- Internal staff rotation of nurses already trained and mentored to other departments other than maternity and paediatric departments. For some facilities, this was mitigated this by holding discussions with facility in-charges concerning halting internal transfers of staff from maternity and newborn care units.

4- Slow uptake of some activities especially in the lower level facilities e.g. MPDR,

Study Implications

This study generates information on how to design and implement a regionalized care package to improve quality of maternal and newborn care and referral systems within existing health services successfully. It also provides lessons on how to successfully institutionalize newborn care units at hospitals and lower level facilities. This could serve as a model for replication in similar resource constrained settings.

Lessons learned

Based on our findings, these are the lessons:

1. It is feasible to functionalize newborn care units in health centre IVs and hospitals. However, this requires space, equipment and supplies as well as resources (human, time etc).
2. There is need to recruit additional staff to work specifically in the NICUs. These include neonatologists and neonatal nurses.
3. All health workers in the NICUs must undergo training in advanced newborn care so as to enhance their skills in management of small and sick newborns.

4. Leadership engagement is very critical for uptake of interventions e.g QI, MPDR, establishment of newborn units. The leaders to be engaged not only include those at facility level but also those at district level. The support of political district leaders such as the Chief Administrative Officer (CAO) is also very crucial.
5. There is need to intervene across the board/spectrum of the health system. Addressing one challenge for example provision of equipment may not result in the required benefits minus looking at human resource and skills.
6. It is usually more advisable to start small and then scale up interventions. This gives time to learn how to do things and also to pick up best practices. This is the model that we are currently used for some of the intervention strategies e.g testing infection prevention measures for newborn care units in hospitals, MPDR, etc
7. Taking a regional approach to care which includes all hospitals and busy health centres is a rapid and lower cost approach to scale up maternal and newborn care. It also improves access, quality and referral, thus reducing unnecessary mortality. However, these results require sustained efforts of working with and supporting the individual facilities but also joint leadership meetings

Call to Action

1. The Ministry of Health should start training specialised newborn cadres such as neonatologists and neonatal nurses in preparation for rolling out NICUs countrywide. Once trained, these should accordingly be deployed in hospitals and health centres where newborn sick babies are managed.

2. The MakSPH Centre for Maternal, Newborn and Child Health together with the Uganda Paediatric Association developed the Uganda guidelines for management of small and sick newborns. These guidelines were launched and should be disseminated for use countrywide by Ministry of Health.

3. There is need to address the wide spread practice of rotation of nurses and midwifes in health facilities and hospitals as it affects patient care. Future health systems should promote specialisation for some areas of health care such as newborn care.

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