

Report for The AAGBI Undergraduate Elective Funding 2010

Date: August 2010

Destination: Obstetrics at Mbarara Regional Referral Hospital, Mbarara, Western Uganda

Where I went and why?

Uganda is one of the poorest countries in the world with life expectancy of 53 years, the government spending on healthcare is about 20 US dollars per person per year. Mbarara is a major town in Western Uganda, about 6 hours drive from the capital of Uganda, Kampala. I worked in the Obstetrics Department of the Mbarara Regional Referral Hospital for a joint project between Mbarara and the Association of Anaesthetists of Great Britain and Ireland (AAGBI) aiming to reduce maternal mortality.

What I planned to do and what I actually did?

My main objective was to establish a quality improvement project in the Obstetrics Unit in the Mbarara Hospital. The aim is to reduce maternal mortality rate which is a major goal of the World Health Organization (WHO). The idea of this project stemmed from a list of problems observed by local staff including inadequate equipment, delay in decision making, staff shortage and lack of training. While primary research aims to discover new knowledge, quality improvement is about applying proven interventions to produce measurable improvement in quality of care.

Changing work culture is a very difficult task, we therefore decided to focus on one problem in a small number of patients. The first problem that we wanted to tackle was the lack of observations for critically ill patients. The high dependency bed is located in the general obstetrics ward, its only difference from a regular bed is the fact that it has a functional water tap and located directly opposite to the nurses' desk. The tool we planned to implement was the Modified Early Warning System (MEWS), which is a tool to allow early detection of deteriorating vital signs to identify acutely ill patients. This allows appropriate medical interventions to occur at the earliest possible opportunity.

Taking regular observations and recording the results on an observation chart is taken for granted in the UK. However, in the process of piloting the MEWS in Uganda, numerous issues arose which prevented its successful implementation. Basic equipment such as thermometer and sphygmomanometer are either missing or malfunctioning, while the idea of observation chart is a completely novel to most staff.

My reflection of the experience in Africa

It is very easy to fall into the trap of being judgemental as a foreigner in a developing country such as Uganda. Compared to UK standard, one can easily judge that the standard of care is unacceptably low in Uganda. However, the healthcare workers are under stresses that are unimaginable in the UK. For instance, all doctors and nurses have to supplement their income from doing private work at the weekends as the pay from the state hospital is insufficient to cover basic expenditures like food and accommodation. The lack of healthcare service means that medical staffs are risking their own health or even life if they contract any serious illnesses from the patients. The dedication and personal sacrifice of the Ugandan nurses and doctors will remain a constant source of inspiration for me.

Improving Peri-operative Obstetric care at Mbarara Regional Referral Hospital, South West Uganda: a pilot study

Background

The aim of the World Health Organization (WHO) Millennium Development Goal 5 (MDG 5) is to reduce the 1990 maternal mortality ratio (MMR) by three-quarters in 2015. A report from this group in 2010 showed that there had been little progress in reaching MDG 5 in sub-Saharan Africa.

The Uganda Ministry of Health reported a MMR of 440 between 2003-2008, adjusted to 550 by the WHO to estimate the actual MMR in 2005. This is equivalent to 1 in 25 lifetime risk of maternal death. At Mbarara Regional Referral Hospital (MRRH) 10 000 deliveries were performed in the year 2009. The Caesarean section rate is 25-30%, much the same as that in developed countries, but the maternal and newborn outcomes are much worse. Maternal Mortality Ratio was 500 per 100,000 in the same year (50 deaths a year), compared to 13 per 100,000 in the UK over the same time period. In Mbarara, as in the majority of sub-Saharan African hospitals, there is a severe shortage of trained healthcare workers, equipment and drugs, with late patient presentations.

Aim

The aim is to describe the current standard of care in the Obstetrics Department of the MRRH and patients outcomes to quantify the areas for improvement. This study defines the questions for future quality improvement projects.

Methods

This is a prospective descriptive study. Data collection sheets were prospectively designed and were completed by trained data abstractors. Data on five areas were collected: (1) Patient demographics, (2) Antenatal Care, (3) Delivery, (4) Post-delivery care and complications and (5) measurement and record of vital signs.

Result

1. Patient Demographics (table 1)

In a 10 day period from 2nd to 12th of August 2010, 83 mothers were admitted and delivered in the obstetrics unit of the MRRH. The median age was 25 years old, Gravity 2, Parity 1+0. The median gestational age was 39 weeks plus 6 days. 60% of the mothers were admitted at full term while 5% of the mothers were preterm (gestation <37 weeks) and 12% of the mothers were post-term (gestation >42 weeks). Notably, 23% of the mothers have unknown gestation age on admission. 1 in 4 of the mothers were village peasants, the next commonest occupations were professionals (16%) and skilled workers (16%). Commonest co-morbidities are HIV or AIDS (13%), premature rupture of membrane (4%), pre-eclampsia (1%) and syphilis (1%). 1 in 4 mothers (27%) had abnormal labour diagnosed on admission.

2. Antenatal Care (table 2)

Antenatal care is most commonly provided by midwives in the community, the median number of antenatal visits to midwives is 3. When all visits to any healthcare professionals including nurses, midwives, non-obstetrics doctors and obstetricians are combined, the

median number of antenatal visit is also 3. An overwhelming majority of patients self-referred to MRRH, only 2 of 83 mothers were referred by healthcare professionals.

3. Delivery (table 3)

73% of patient had spontaneous vaginal delivery, while 13% and 12% of patients received emergency Caesarean Section and elective Caesarean Section, respectively. Only 1 of 83 patients received vaginal instrumental delivery. The time from onset of labour to ward admission was long, with median time of 11h17m. For patients who received emergency Caesarean section, the median time from decision of Caesarean section to delivery was 3h23m. It was not possible to calculate the time from arrival at hospital to triage as time of arrival was not recorded in any of the patient's records.

4. Post-delivery care, complications and maternal outcome (table 4)

19% of the patients had a drug chart in the medical record, 16% of the patients received analgesia in the first 24h post delivery as recorded in their drug chart. 4 in 5 patients (81%) did not have a drug chart. Similar number of patients was discharged from hospital without any review by obstetrician after delivery (82%). Early warning system or observation chart was not used in any of the patients.

The commonest postpartum complications were postpartum haemorrhage (5%), Anaemia (1%), pre-eclampsia (1%) and eclampsia (1%). All 83 mothers survived at 48h, with the majority (92%) returned home and the rest as inpatients in post-natal ward.

5. Measurement and record of vital signs (table 5)

Observations at three points in time were recorded: at triage, within 4h after delivery and within 24h after delivery. At triage, the commonest observation taken and recorded in the notes was blood pressure (11%), temperature (1%) and respiratory rate (1%). In the first 4 hours after delivery, there is complete absent record of observations except for 1 patient who had her blood pressure measured and recorded. Heart rate, neurological status and pulse oximetry were not recorded in any of the patients notes at any point.

Discussions

The obstetrics unit is a busy unit that has on average 8 deliveries per day. Most patients are young mothers who are generally in good health, although the rate of complicated pregnancies and HIV infection are high. The majority of pregnancy are full term although 1 in 4 mothers have unknown gestation age on admission, this may reflect the lack of antenatal care as the median number of antenatal visit is only 3, less than the WHO recommendation. Although MRRH is a tertiary hospital, the majority of patients presented directly to this hospital. Mbarara Hospital is effectively a district general hospital for the local population.

The lack of accurate medical record is a recurring finding in many parts of this study. This has great impact on several aspects of care including providing analgesia after delivery, record of vital signs to detect early deterioration, discharge planning and assessment by obstetricians. The lack of observations at triage and immediate post delivery period is worrying as there is currently no other system to detect deteriorating patients.

Conclusion

The obstetrics department of the MRRH has a challenging patient population. Poor record keeping and lack of vital sign measurements are two key areas for improvement. Quality improvement methodologies can be applied to improve these areas of concern to ultimately reduce maternal morbidity and mortality.

Appendix

Table 1 – Patient Demographics, % of total in brackets.

Total No. of Mothers Admitted	83
Age (median)	25 years
Gravity and Parity (median)	G2 P1+0
<u>Details of Gestation</u>	
Weeks of Gestation (median)	39 weeks + 6 days
No. of term mothers (37-42 weeks)	50 (60.2%)
No. of preterm mothers (<37 weeks)	4 (4.8%)
No. of post-term mothers (>42 weeks)	10 (12.0%)
Unknown Gestation	19 (22.9%)
<u>Occupation</u>	
Village Peasant	20 (24.1%)
Professional	13 (15.7%)
Skilled worker	13 (15.7%)
Housewife	7 (8.4%)
Unknown	31 (37.3%)
<u>Co-morbidities at Admission</u>	
HIV positive or AIDS	11 (13.3%)
Premature Rupture of the Membrane	3 (3.6%)
Preclampsia	1 (1.2%)
Syphilis	1 (1.2%)
<u>Diagnosis at Admission</u>	
Normal Active Labour	43 (51.8%)
Normal Latent Labour	18 (21.7%)
Slow Progression of Labour	4 (4.8%)
Uterine Rupture	2 (2.4%)
Other	12 (14.5%)
Not recorded	4 (4.8%)

Table 2 – Antenatal care, % of total in brackets.

<u>Median no. of antenatal visits with:</u>	
Nurse	0
Midwife	0
Non-obstetrics doctor	3
Obstetrician	0
Total	3
<u>Referral to MRRH by:</u>	
Self	81 (97.6%)
Midwife	1 (1.2%)
Obstetrician	1 (1.2%)

Table 3 – Mode of Deliveries, % of total in brackets.

Spontaneous vaginal delivery	61 (73.5%)
Instrumental vaginal delivery	1 (1.2%)
Emergency Caesarean Section	11 (13.3%)
Elective Caesarean Section	10 (12.0%)

Table 4 – Provision of care in the first 24 hours after delivery, % of total in brackets.

	Yes	No	Not Recorded
Analgesia was given and recorded in drug chart.	13 (15.7%)	3 (3.6%)	67 (80.7%)
Patient received 1 or more review by an obstetrician.	15 (18.1%)	64 (77.1%)	4 (4.8%)
Use of early warning system.	0 (0%)	83 (100%)	0 (0%)

Table 5 – Number of patients with measurement and record of vital signs in medical record at three different time points, % of total in brackets.

	Heart Rate	Blood Pressure	Temperature	Respiratory Rate	Neurology	SpO2
At Triage	0 (0%)	9 (10.8%)	1 (1.2%)	1 (1.2%)	0 (0%)	0 (0%)
Within 4h after delivery	0 (0%)	1 (1.2%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Within 24h after delivery	0 (0%)	6 (7.2%)	0 (0%)	4 (4.8%)	0 (0%)	0 (0%)

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