

## Factors that Led to Third Delays in the Management of Obstetric Emergencies in Midigo Health Centre IV - Yumbe District, Uganda

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### Abstract

**Introduction:** The third delay is the delay in receiving adequate and appropriate treatment at the healthcare facility by mothers during and after pregnancy. A number of factors are attributable to this delay.

**Aim:** To identify factors that led to internal delay in management of obstetric emergency, to identify measures to address them and determine the lived experiences of mothers who received obstetric emergency care in Midigo HC IV.

**Methods:** Purely descriptive cross-sectional design; both qualitative and quantitative in nature. Sample size was 36 participants (33 health workers and 3 mothers).

**Results:** Factors like long hours of work due inadequate staffing (80%), inadequate refresher training on EmONC (66.7%), poor referral system, poor lighting system, inadequate blood transfusion services and hostility of the community led to delays. Qualitative analysis from mothers confirmed these factors. Measures that could be used to address them were; use of Workload Indicator of Staffing Needs (WISN) to adequately allocate staffs – 90%, holding periodic refresher training on EmONC -93.3%, availability of full-time doctors and anaesthetists (93.3%). Other measures were revamping referral system (93.3%).

**Conclusion:** Third delays in accessing Emergency Obstetric Care (EmOC) are still a huge challenge in Uganda \_ Midigo HC IV.

**Keywords:** Workload Indicator of Staffing Needs (WISN), Emergency Obstetric Care (EmOC), Emergency Obstetric and Neonatal Care (EmONC).

## Introduction

### Background

Internal delays, also known as third delays, are the barriers to the receipt of timely and appropriate obstetric care at the facility level (Hannah, Alice and Stephen, 2013). In their work on substandard emergency obstetric care in a regional hospital in Tanzania (Bjarke, et al., 2010), it was argued that if the internal health facility delays are a major contributing factor to maternal deaths then the delays must be reduced. This reduction must be to an acceptable level before the other delays are addressed.

In yet another study, third delays in the management of EmOC were noted in the United Nations Population Fund report [UNFPA] report (United Nations Population Fund [UNFPA],

2014). In this report, third delay was defined as “delay in receiving care at health facilities”. The report noted that, these delays involve factors within the health facility, including organization, quality of care, and availability of staff and equipment. Addressing these situations is an essential condition for ensuring that obstetric emergency situations are efficiently managed.

According to World Health Organization (WHO, 2009; 2015), the three-delay model focuses on the three major factors affecting the outcome of emergency preparedness during pregnancy. These factors, in their respective orders, are the lengths of the delays in the decision to access healthcare, delay in the identification of healthcare facility and transport to the said facility and delay in receiving adequate and appropriate treatment at the

facility. Poor patient outcome usually occurs if any of these factors contribute to an undue delay. For example, an inability to recognize an emergency at any level may increase the delay in the decision to seek care or give appropriate obstetric care. Similarly, the ability of the patient or a health worker to recognize an emergency is partially dependent upon the patient's or health worker's level of education among other factors (WHO, 2009; 2015).

Much as it seems intuitive that longer time to treatment for emergencies would result in poorer outcomes, what is not clear is how long women have to wait before being provided with life-saving care once they reach a health facility. The magnitude of the effect of that third delay on birth outcomes is huge. It is, therefore, important to determine the burden of maternal and perinatal deaths attributable to these third delays (Cavallaro and Marchant, 2013).

The matter is worse in the absence of accepted guidelines defining what constitutes a delay to care within a facility. In fact, Cavallaro and Marchant (2013), in their four studies gave definitions of delay to care within health facilities as untimely caesarean section within 30 minutes (Cavallaro and Marchant, 2013).

Borgen Project (2016), a non-profit organization addressing poverty and hunger, argued that in the third delay (delay in the provision of adequate care), postpartum hemorrhage accounts for 27% of maternal deaths while obstructed labor constitutes 8%. They further stressed that in developing countries, a shortage of staff, insufficient training, inadequate sanitation and antibiotic unavailability among others means health facilities are often ill-equipped to respond to a mother's needs during and after her pregnancy.

It is important to note that Goal Three, Target 3.1 of the 2015 Sustainable Development Goals seeks to "reduce the global maternal mortality rate to less than 70 per 100,000 live births by 2030" (United Nations Development Programme [UNDP], 2017). Therefore, achieving this goal may need a lot more in tackling the three delays that play a central role in the causes of maternal mortality (WHO, 2016). Yet in another study, it was found that 25.7% of the delays in receiving obstetric care were related to quality of medical care at the health facility (Rodolfo, et al., 2014). This finding is similar to that of Mismay & Morrow

(n.d), whose work on delay and seeking of emergency obstetric care in Eritrea, showed that delay due to poor quality of services at healthcare facility was at 25%.

In the third delay, which is barriers to the receipt of timely and appropriate obstetric care at the facility level, there are basically six (6) factors. These factors are grouped as follows; Drugs and equipment factors, Policy and guidelines factors, Human resources factors, Facility infrastructure, Patient-related and Referral-related factors. In fact, in a study on why women are dying when they reach hospital on time, it was found that the most commonly cited barriers were inadequate training/skills mix (86%); drug procurement/logistics problems (65%); staff shortages (60%); lack of equipment (51%) and low staff motivation at 44% (Hannah, Alice and Stephen, 2013). Another study also found that shortages of staffs, essential equipment, medicines and blood as well as inadequate management, late or wrong diagnosis and incorrect actions were the commonest third delays in Eritrea (Mismay and Morrow, n.d).

Similarly, other studies found that the most frequently mentioned barriers to timely provision of treatment within health facilities were shortage of medical supplies (65%), surgery facilities (49%) and staffing (46%). Lack of EmOC skills, including errors in management and shortage of trained personnel, were mentioned in 38% of articles, and were reported more frequently than the organization of care. Institutional factors, such as administrative processes and lack of protocols for treating obstetric complications, were reported less frequently 4-30% (Cavallaro and Marchant, 2013).

Thadeus and Maine (1994) found ill-equipped health facilities, ill-staffed health facilities and mothers' perception of quality of care at the facility as the key attributable factors. They pointed out that Quality of care is an important consideration in the decision process of the mother to seek care. Emergency obstetric care at facility level is divided into two; Basic emergency care and Comprehensive emergency care services. Mothers must be assured of both services. The services are for all kinds of complications during pregnancy, childbirth and early postpartum period and their neonates. Basic emergency obstetric care refers to lifesaving services for maternal complication

being provided by a health facility or healthcare professional. It includes administration of parenteral antibiotics, oxytocin and anticonvulsants drugs for pre-eclampsia and eclampsia, manual removal of placenta and retained products and assisted vaginal delivery. In the same way, comprehensive emergency obstetric care covers all above basic care plus two other services, that is, performance of caesarean section and blood transfusion (Bhandari and Dungal, 2014).

A study (Helelo, Zungu, and Chiegil, 2015), also found out that Care that is life-saving, safe, timely, responsive and given in a clean environment, where the service providers show humility, respect, equal treatment and encouragement in an effort to meet the clients' needs and expectations, creates a good experience of the mothers. They concluded that Clients' experiences during the provision of EmOC influence their future decisions on whether to seek care or not.

### Statement of the problem

Internal delays, also known as 'Third delay', still remains a major challenge in most rural health facilities in Uganda. This has dramatically affected the provision of both basic obstetric emergency care and comprehensive obstetric emergency care services. Sustainable Development Goal (SDG) 3, target 3.1 stresses on the reduction of the global maternal mortality ratio to less than 70 per 100,000 live births by 2030 (UNDP, 2017).

Therefore, achieving this goal may need a lot more in tackling all the three delays that play a central role in the causes of maternal mortality (WHO, 2016). If Uganda is to contribute to this global development agenda, then a lot still has to be done to bridge these delays. Midigo Health Centre IV is just one healthcare facility in the country that is grappling with the problem of internal delay. The current situation surrounding this category of delays is inadequate staffing, poor referral system and inadequate staff skills on the subject matter, among others.

### Objectives of the Study

The specific objectives were as follows

1. To identify factors that lead to internal delay in management of obstetric emergency at Midigo Health Center IV.

2. To identify possible measures to address the factors that lead to internal delay in management of obstetric emergencies at Midigo Health Centre IV.
3. To determine the lived experiences of mothers who received obstetric emergency care in Midigo Health Centre IV by August, 2017.

## Methods

### The study design

The study employed purely descriptive design, both qualitative and quantitative in nature. This design gave detailed information that could collect the required information.

### The study area

This research was done in Midigo Health Centre IV, located in Midigo sub county, in Yumbe district (West Nile region), Uganda. Midigo Health Centre IV is a government health facility. By then it was the only health centre IV in the district. The total bed capacity of Midigo Health Centre IV is 73beds (Ministry of Health [MoH], 2015). On the other hand, Midigo Sub-County has a total population of 37,100people which is 7.64% of the total population of Yumbe district of 485,582 persons (Uganda Bureau of Statistic [UBOS], 2014).

### Study population

The study population was 95 (35 healthcare professionals and 60mothers). Therefore, these were the healthcare professionals of Midigo health Centre IV and mothers who got emergency obstetric services from the health facility within the month of August, 2017.

### Sample size estimation

The population size of healthcare professionals in Midigo health centre IV was known (35 health workers). *Taro Yamane* (1967) formula for calculation of sample size was used to compute the sample size (Israel, 1992; Polonia, 2013). Assuming a 95% confidence level and maximum degree of variability of the attributes in the population,  $P = 50\%$  (0.5), the sample size was calculated as below

Thus, using the formula;  $n = \frac{N}{[1+N(e^2)]}$

Where  $n$  is the sample size,  $N$  is the population size and  $e$  are the level of precision

(Sampling error – 5%).

Hence

$$n = \frac{N}{[1+N(e^2)]}$$
$$n = \frac{35}{[1+35(0.05^2)]} = \frac{35}{[1+0.0875]} = 32.184 \sim 33$$

### Health workers

The researcher intended to have all the four (6) midwives available in the facility as part of the healthcare professional respondents. One of the six midwives, the most senior with at least 5years experience, was used as a key informant alongside with the health facility in-charge.

Similarly, there were three (3) randomly selected respondent mothers who had ever had, at least three (3) emergency obstetric care services from Midigo Health Centre IV. These services were received at different times of pregnancy.

### Sampling procedure

A purposeful sampling technique was employed for midwives and simple random sampling techniques for the other health workers. Mothers were randomly selected from the register for the month of August, 2017 only when they met the inclusion criteria. This included having had at least 3 emergency obstetric care services, ranging from referral services, good maternal outcome and bad maternal outcome.

### Data collection tools and techniques

The following tools were used; pre tested Semi-structured questionnaires which were prepared in two languages; both English and Aringa, the local language. Interview guide was also used for the key informants and the respondent mothers.

### Data management, analysis and presentation methods

Data was cleaned, edited, coded and tallied manually. Microsoft excels and other computer software, such as SPSS was used for analysis. The data was presented in tables and figures.

### Ethical considerations

The following ethical considerations were taken care of; Approval by relevant Institutional Review Board, informed consent and voluntary participation.

## Results

### Socio demographic characteristics respondents

The response rate of the respondent healthcare professional was 90.9% (30 respondents) out of the expected 33health workers. Of these, 50% were males and 50% were females. Majority of the respondents were in the age group of 20-30years constituting 43.3% whereas the minority age group was above 50years accounting for 10% of the respondents. Up to 86.7% of the respondents completed tertiary level education while the rest, 13.3% completed secondary level. The majority of the health workers were nurses (40%). Doctors, clinical officers, midwives and other cadres constituted 6.7%, 10%, 20% and 23.3% respectively.

Out of the 3 respondent mothers, two were in the age group of 20-30years whereas one was in the age group of 31-40years. Again, two of them had primary education while one had no education. Similarly, two of the mothers had received Emergency Obstetric Care (EmOC) 4-5times from Midigo Health Centre IV and one had received more than 5times. When asked about history of having been referred out, one mother had been referred out for EmOC services while two were not. Two mothers had had good maternal outcomes while one mother had bad maternal outcome.

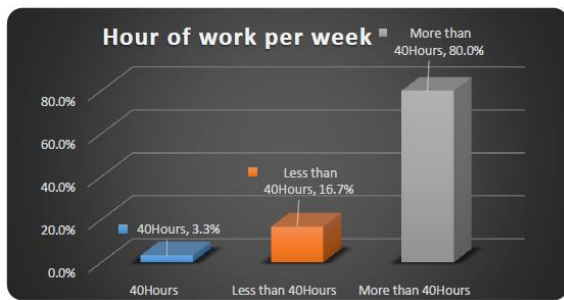
### Factors that led to internal delays in the management of obstetric emergencies

Respondent health workers were asked whether some specific factors affected the management of obstetric emergencies in Midigo Health Centre IV and responses were elicited for the said factors.

The factors that affected management of obstetric emergencies were related to working hours of staffs, history of attendance of refresher training on EmONC, job dissatisfaction and others respectively.

### Percentage hours of work for staffs of Midigo HC IV

To determine whether long hours of work affected the management of obstetric emergencies, analysis was run and the results are as displayed below.



**Figure 1.** Percentage hours of work per week

Figure 1 above shows that 80% of the staffs of Midigo HC IV worked for more than 40hours per week, contrary to the expected 40hours per week. This indeed probably greatly affected the management of emergency obstetric care. Out of the 80% of the staffs who worked long hours, all the midwives (100%) reported to have worked for more 40hours. Similarly, all the doctors (100%) reported to have also worked for more than 40 hours. When asked about which other factors affected their management of emergency obstetric care, midwife A.M (initial) stated

*“[...] work over load, midwives working for long hours, averagely 12hours a day [...]”*

A key informant from maternity ward was asked whether they adequately had enough staff to manage EmONC and she answered

*“[...] No, we currently work two shifts each being 12 hours [...]”*.

### **Refresher training on EmONC**

Frequency of attendance of refresher training also greatly affected the management of emergency obstetric care. Refer to table 1.

Table 1 shows that up to 66.7% of the staffs never attended any refresher training on emergency obstetric and neonatal care (EmONC). Even then, among the midwives, the study found that 83.3% of those midwives attended refresher training on EmONC just once. In fact, only one midwife attended EmONC refresher training more than once.

However, the health facility in-charge as another key informant, when asked about how often their staffs go for refresher training on EmONC, he answered

*“[...] It’s planned at district level. So, it can be once in two or three years depending on district priorities.”*

### **Job dissatisfaction of the staffs**

Levels of job dissatisfaction of the staffs was ascertained to find out whether or not it affected the management of obstetric emergency and neonatal care. The study found out that job dissatisfaction did not significantly affect the management of EmONC in Midigo HC IV as shown in table 2.

Table 2 shows that most of the staffs (60%), were satisfied with their job whereas 40% were dissatisfied with their job. However, among the midwives alone, the study found that 66.7% were satisfied while 33.3% were dissatisfied. Worst still, all the doctors (100%) were dissatisfied with their job just like clinical officers who were also all dissatisfied with their job (dissatisfaction rate of 100%).

### **Other factors that affected management of EmONC**

The staffs were asked to state other factors that affected their management of emergency obstetric and neonatal care. Majority of the factors listed were; inadequate staffing, poor referral system, poor lighting in the facility, inadequate blood transfusion services and hostility of the community, among others.

### **Measures that could be used to address the factors that led to internal delays**

Staffs of Midigo HC IV were asked to state the measures that could be used to address the factors affecting the management of EmONC. These were discussed under the sub-sections below.

#### **Use of workload indicator of staffing needs (WISN)**

As per the table 3 90% of the respondent admitted that the use WISN to allocate required number of staffs would help to avert some of the factor affecting management of EmONC.

#### **Holding periodic refresher training on EmONC**

Again, when the opinions of the staffs were sought about holding refresher training to improve management of EmONC, 93.3% admitted that this could improve EmONC management in the facility. See the summary in table 4.

### Availability of full-time doctors and anaesthetists

As shown in table 5, 93.3% of the respondents argued that availability of full-time doctors and anaesthetist indeed could improve the management of EmONC.

### Revamping referral system, non-financial staff motivation and holding community dialogues

Similarly, 93.3% of the staffs argued that revamping referral system, non-financial staff motivation and holding community dialogues would respectively improve case management of EmONC in Midigo HC IV. Refer to the respective tables 6, 7 and 8 below.

### List of tables

**Table 1:** Attendance of refresher training on EmONC

**Table 2:** Effect of job dissatisfaction on management of EmONC

**Table 3:** Use of WISN to improve management of EmONC

**Table 4:** The use of periodic refresher training to improve EmONC Management

**Table 5:** Availability of full-time doctors and anaesthetists to improve EmONC management

**Table 6:** Revamping referral system to improve EmONC Management

**Table 7:** Non-financial staff motivation to improve EmONC Management

**Table 8:** Community dialogues to improve EmONC management.

**Table 1.** Attendance of refresher training on EmONC

Refresher training on EmONC		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Once	8	26.7	26.7	26.7
	More than once	2	6.7	6.7	33.3
	Never	20	66.7	66.7	100.0
	<b>Total</b>	<b>30</b>	<b>100.0</b>	<b>100.0</b>	-

**Table 2.** Effect of job dissatisfaction on management of EmONC

Level of job dissatisfaction		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Satisfied	17	56.7	56.7	56.7
	Very satisfied	1	3.3	3.3	60.0
	Dissatisfied	10	33.3	33.3	93.3
	Very dissatisfied	2	6.7	6.7	100.0
	<b>Total</b>	<b>30</b>	<b>100.0</b>	<b>100.0</b>	-

**Table 3.** Use of WISN to improve management of EmONC

Use of WISN		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	27	90.0	90.0	90.0
	No	3	10.0	10.0	100.0
	<b>Total</b>	<b>30</b>	<b>100.0</b>	<b>100.0</b>	-

**Table 4.** The use of periodic refresher training to improve EmONC Management

Periodic Refresher Training on EmONC		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	28	93.3	93.3	93.3
	No	2	6.7	6.7	100.0
	<b>Total</b>	<b>30</b>	<b>100.0</b>	<b>100.0</b>	-

**Table 5.** Availability of full-time doctors and anaesthetists to improve EmONC management

<b>Full time Doctors and Anaesthetist</b>		<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
Valid	Yes	28	93.3	93.3	93.3
	No	2	6.7	6.7	100.0
	<b>Total</b>	<b>30</b>	<b>100.0</b>	<b>100.0</b>	<b>-</b>

**Table 6.** Revamping referral system to improve EmONC Management

<b>Revamping Referral System</b>		<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
Valid	Yes	28	93.3	93.3	93.3
	No	2	6.7	6.7	100.0
	<b>Total</b>	<b>30</b>	<b>100.0</b>	<b>100.0</b>	<b>-</b>

**Table 7.** Non-financial staff motivation to improve EmONC Management

<b>Non-Financial Staff Motivation</b>		<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
Valid	Yes	28	93.3	93.3	93.3
	No	2	6.7	6.7	100.0
	<b>Total</b>	<b>30</b>	<b>100.0</b>	<b>100.0</b>	<b>-</b>

**Table 8.** Community dialogues to improve EmONC management

<b>Community Dialogues</b>		<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
Valid	Yes	28	93.3	93.3	93.3
	No	2	6.7	6.7	100.0
	<b>Total</b>	<b>30</b>	<b>100.0</b>	<b>100.0</b>	<b>-</b>

### **Lived experiences of mothers receiving obstetric emergency care in Midigo HC IV**

Mothers were asked to share their lived experiences after getting EmOC services from Midigo HC IV.

One out of 3 mothers reported poor perceived quality of care at the facility. For example, mother A reported as

*"[...] The quality of care was too bad because I was referred out on a Boda-Boda motor cycle and yet an Ambulance was available. Even if there was no fuel, I would accept to meet the cost but this option was not given to me. The midwives were a bit in a rash to send me away," said Mother A*

On the same subject matter, an interview with the health facility in-charge, as a key informant, was made. He said,

*"[...] Indeed, our Ambulance broke down more than three years ago. Since then, it has never been repair. Mothers have been referred out find their own means of transport. Boda-boda is the most readily available means of transport."*

However, one mother who had good maternal outcome had this to say

*"[...] I delivered all my five children from there and they are all okay. I think I will continue to go to Midigo HC IV even if certain things are not good enough," reports Mother C*

The respondent mothers were also asked whether the services they got met their expectation. One out of the 3 mothers reported that her expectations were met. The two mothers whose expectations were not met were referred out and the other had poor maternal outcome

respectively. For example, mother C reported as follows

*“[...] My expectations were not met at all. I reached Midigo early but they delayed me and yet they knew the doctor was not around. After long hours in the facility, I was told to hire a motorcycle and go to Yumbe hospital. From Yumbe hospital, I took some time with the health workers who eventually referred me to Arua Referral Hospital. By the time I was to be operated from Arua Referral Hospital, my baby was already dead. Even me, I nearly died. So, my expectations were not met at all,”* **reports Mother C.**

When the mothers were asked about their satisfaction with services offered to them, two out of three were dissatisfied. One of the satisfied mothers (mother B) reported as follows

*“[...] For me, things have always been better because God has always been with me. God has always helped me to deliver faster and with minimal assistance from midwives”,* **Said Mother B.**

However, one of the dissatisfied mothers had this to say

*“[...] I think it would be better if these health workers go deep to the community to tell us more about the services that they don't have. This would help us to prepare early enough to go far away for delivery. Me and my husband are poor people and so when we are told at short notice, we cannot afford referral. This is why I lost my baby”,* **reports mother A**

### **Summary of findings**

The following factors led to internal delays in the management of emergency obstetric care in Midigo HC IV, by September, 2017. They are long hours of work due to inadequate staffing (80%), inadequate refresher training on EmONC (66.7%), poor referral system, poor lighting system in the facility, inadequate blood transfusion services and hostility of the community, among others. Uniquely speaking, most of the staffs (60%) were satisfied with their job hence job dissatisfaction had little effect on internal delays in the management of EmONC. Qualitative analysis from mothers who received

EmOC services from the facility actually confirmed that these factors were real. The study also found out that the following measures could be used to address the factors that led to internal delays in the management of obstetric emergencies at Midigo HC IV. These are; use of Workload Indicator of Staffing Needs (WISN) to adequately allocate staffs – 90%, holding periodic refresher training on EmONC -93.3%, availability of full-time doctors and anaesthetists (93.3%). Other measures were revamping referral system, non-financial staff motivation and holding community dialogues to improve EmONC management all accounting for 93.3%.

### **Discussion**

The findings of this study are similar to those of other studies done elsewhere (Hannah, Alice and Stephen, 2013; Cavallaro, and Marchant, 2013; Mismay and Morrow, n.d). Whereas the qualitative findings may not be generalizable, poor referral system and poor client satisfaction seemed to have impacted greatly on the facility. These qualitative findings were very negative lived experiences of the mothers as reported also in other previous studies (Cavallaro, and Marchant, 2013).

### **Conclusion**

Internal delays in the management of emergency obstetric and neonatal care are still alarming in rural health facilities in Uganda. The predominant causes are inadequate human resource for health, poor financing and management (leadership) gaps.

### **Recommendations**

Improvement of human resource allocation based on Workload Indicator of Staffing Needs (WISN), reviving the financing modalities and enhancing leadership training could be helpful.

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