

# Health Care Providers and Community Health Care-worker's Perspectives on the Factors Contributing to Continued Neonatal Deaths in Gicumbi District, Rwanda

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## ABSTRACT

**Introduction:** Rwanda's neonatal mortality remains high and estimated to be 20 per 1000 live births according to the 2014-15 Rwanda Demographic and Health Survey (RDHS 2014-2015). Improving outcomes of maternal and child health outcomes in low and middle-income countries remains a major challenge. Globally, the United Nations estimated that the Maternal Mortality Ratio (MMR) was 216 per 100,000 births and the under-five mortality rate 43 per 1,000 live births in 2015 and that the majority of these deaths occurred in Sub-Saharan Africa. Factors like poor maternal health, management of pregnancy and delivery complications and poor medical and nursing care during childbirth or shortly after birth of neonate predispose to neonatal deaths and morbidities. These factors predisposing neonatal deaths and morbidities are poorly measured in developing world but some studies have revealed that neonatal asphyxia, severe neonatal sepsis, prematurity and low birth weight complications and tetanus are believed to be major components. The aim of this study is to explore health care providers and community health workers' perspectives on the factors contributing to continued neonatal deaths.

**Methods:** We conducted key informant interviews with 24 health care providers (medical doctors, nurses, and midwives) and Community health workers. Interviews were recorded and analyzed thematically.

**Results:** We conducted a total of 24 in-depth interviews and results concluded that 91.6 % of respondents believed that the main challenges in providing care to women who are delivering or in postpartum are inadequate number of staff (medical doctors and midwives), Close to 90% reported that mother's education is the area to be improved, Near 70% of our respondents pointed on proper labor monitoring by midwives and medical doctors as the area to improve during delivery, and finally above 50% of respondents described that mothers who are delaying to reach health facility is important factor contributing to neonatal mortality and morbidity.

**Conclusion:** Our findings suggest that delaying to reach health facility is a big contributor to continued deaths; therefore, this study recommends for Ministry of health to allow maternity services in health posts which are being rolled out at cell's level in Rwanda.

**Keywords:** Perspective; Neonatal deaths; Gicumbi; Diarrhoea; Immune

## INTRODUCTION

Improving outcomes of maternal and child health outcomes in low and middle-income countries remains a major challenge. Globally, the United Nations estimated that the Maternal Mortality Ratio (MMR) was 216 per 100,000 births and the under-five mortality rate 43 per 1,000 live births in 2015 and that the majority of these deaths occurred in Sub-Saharan Africa [1]. An estimated 75% of maternal deaths and more than 80% of newborn deaths worldwide

are preventable. Factors like poor maternal health, management of pregnancy and delivery complications and poor medical and nursing care during childbirth or shortly after birth of neonate predispose to neonatal deaths and morbidities [2]. These factors predisposing neonatal deaths and morbidities are poorly measured in developing world but some studies have revealed that neonatal asphyxia, severe neonatal sepsis, prematurity and low birth weight complications and tetanus are believed to be major components.

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Rwanda's neonatal mortality remains high and estimated to be 20 per 1000 live births according to the 2014-15 Rwanda Demographic and Health Survey (RDHS 2014-2015). The interventions that aim at reducing number of deaths of neonates vary in different ways and by actors involved in implementation. These interventions are categorized in two classes based on demand or supply. A study in Rwanda, for hospitals located in Kigali [3]. Their sample size was 8424 births. They found that perinatal mortality rate was at 32/1,000 births. Factors contributing to deaths of neonates were delay in care seeking (39%), provision of poor care at hospitals and health centres (37%) and delay to reach to health centres of hospital (10%) secondary to lack of money as complained by community members. Other studies have linked lack of midwives, walking long distances from home to health facilities, lack of adequate items in delivery with maternal health. The aim of this study is to determine perspectives of health care providers and community health care workers on the factors contributing to continued neonatal deaths in Gicumbi District, Rwanda [4].

## METHODS

### Study design

This was qualitative study that enrolled 24 participants working in Byumba Hospital and 5 health centres representing 24 health centres in Gicumbi District in key informant interview.

### Study population and sample size

Key informants Interview was done for 24 health professionals working in Byumba Hospital and 5 sampled health centres with 4 medical Doctors, 4 health center managers, 4 midwives working at hospital, 4 midwives working at health center, 4 nurses who were working at ambulances and 4 community health workers who worked in Byumba Hospital and sampled health centres [5,6]. This study excluded medical doctors, community health workers, nurses and midwives who did not work in sampled health facilities or who did not work there during the study period [7].

### Sampling health centers

**Data collection:** Interviews were recorded using phone voice recorder by a trained nurse. Interviews were directed using six research themes [8] (Table 1).

**Qualitative themes:** During interview, 6 themes were covered:

- Challenges in providing care to women who are pregnant, delivering or in postpartum
- Areas to be improved in follow up of pregnant women
- Areas to be improved during delivery
- Areas to be improved in postpartum follow up
- Factors contributing to continued neonatal mortality in Gicumbi District
- Recommendation on areas of improvement for maternal and neonatal care in Gicumbi District

**Table 1:** Top three health Centres with highest number of deliveries in Gicumbi district.

Health center	Total births ( April-June 2019)
Rutare health center	164
Miyove health center	155
Kigogo health center	143

Challenges in providing care to women who are pregnant, delivering or in postpartum. Areas to be improved in follow up of pregnant women [9]. Areas to be improved during delivery. Areas to be improved in postpartum follow up. Factors contributing to continued neonatal mortality in Gicumbi District. Recommendation on areas of improvement for maternal and neonatal care in Gicumbi District [10].

## ETHICS

This study ensured that patient privacy is respected by keeping all the information obtained from the files of patients confidential and avoiding to be disclosed to anyone except the research supervisors. Participants had always the right of deciding the right to decide the time, overall situations and degree at which his/her information can be shared. Records were de-identified before being transferred for analysis. Only the researcher was able to link any personally identifiable information to the de-identified dataset. A locked cupboard of researcher kept all written documentation. The Computer with a protected password stored all digital data. No information identifying any person would be presented in any written reports resulting from this research. Ethical approval was obtained from Byumba ethical committee and Mount Kenya Institutional Review Board [11-14].

## RESULTS

### Thematic analysis

This was qualitative method. 24 key informant interviews were recruited and included healthcare providers and community health workers. The mean age of participants in qualitative component were 40.2 years and female to male ratio were 1.1:1. The mean for their experience were 9.7 years. Table 2 is for qualitative themes (Table 2).

### Theme 1

**Challenges in providing care to women who are pregnant, delivering or in postpartum:** 91.6% of respondents pointed out that the main challenges in providing care to women who are delivering or in postpartum are inadequate number of staff (medical doctors and midwives) as reported by respondent 5 who said that: "The most challenge we are facing as health care provider to satisfy the maternal needs of having a live newborn is lack of enough medical, nursing and midwives staff, most of time we are 2 or three midwives with one medical doctor in labor and average number of mothers to do labor monitoring are 7 per shift" [15].

### Theme 2

**Areas to be improved in follow up of pregnant women:** Close to 90% of our respondents pointed out on continued mother's

**Table 2:** The following table resumes the six themes for qualitative component.

Theme No.	Theme Name
1	Challenges in providing care to women who are pregnant, delivering or in postpartum
2	Areas to be improved in follow up of pregnant women
3	Areas to be improved during delivery
4	Areas to be improved in postpartum follow up
5	Factors contributing to continued neonatal mortality in Gicumbi District.
6	Recommendation on areas of improvement for maternal and neonatal care in Gicumbi district

education is the area to be improved in following up pregnant women to expect good neonatal outcomes. This has been reported for example by respondent 12 who said that: "If we work on mother's education and they are sensitized on importance of completing four antenatal cares, good nutrition during pregnancy and early consultation of mothers when they start labor, for sure we can expect good outcomes" [16].

### Theme 3

**Areas to be improved during delivery:** 66.7% of our respondents reported that the area to improve during delivery is proper labor monitoring by midwives and medical doctors and as an example the informant 14 said: "Because of few staff we are not able to do the labor monitoring as required and many times our interventions like c/section, vacuum delivery are applied late" [17].

### Theme 4

**Areas to be improved in postpartum follow up:** Close to 80% of respondents informed that postnatal care and immediate postpartum follow up if are done adequately can improve the postpartum follow up, hence contributing to reduction of neonatal morbidity and mortality. The key informant number 9 said: "If we do adequately the postnatal care and mothers postpartum follow up, the neonatal outcomes can be improved" [18].

### Theme 5

**Factors contributing to continued neonatal mortality in Gicumbi District:** Above half of respondents described that mothers who are delaying to reach health facility is important factor contributing to neonatal mortality and morbidity as reported by respondent 11: "Some mothers came delayed to health centers and no labor monitoring has been done, this significantly contributes to worse outcomes like birth asphyxia, immediate neonatal deaths and so, on" [19].

### Theme 6

**Recommendation on areas of improvement for maternal and neonatal care in Gicumbi district:** Near 70% of respondents have claimed to extend maternal services to health posts. The respondent 8 said: "The government, Gicumbi district and Byumba hospital must allow health post to offer maternal services, this will help too much mothers to receive maternal health services and if delivery is done in health post the mortality can be reduced significantly" [20].

## DISCUSSION

The present study found that delay to seek care by mothers is main factor contributing to neonatal morbidity and mortality. Delaying of mothers to reach health facility is linked to quantitative finding of active and expulsive phase of labor strongly associated with mortality during multivariate analysis. Other studies have found the quite similar on association of delaying to reach health facility with neonatal morbidity and mortality. A study in Rwanda, for hospitals located in Kigali. Their sample size was 8424 births. They found that perinatal mortality rate was at 32/1,000 births and stillbirth rate at 20/1000 births. Factors contributing to mortality were delay in care seeking (39%), provision of poor care at the health facility (37%) and delay to arrive at the health facility (10%) secondary to lack of money as complained by community members [21-22].

## CONCLUSIONS

Health care providers and community health care workers pointed

out on delay to seek care by mother, poor labor monitoring and delay to intervene in health facility as top factors contributing to continued neonatal deaths.

## RECOMMENDATIONS

This study reported prevalence and predisposing factors of neonatal mortality and morbidity in Gicumbi District. Based on the findings from the study the following recommendations should be considered respectively.

### To the ministry of health, Rwanda biomedical center and Gicumbi district

Ministry of health to give accreditation of health posts to offer maternity services to cut down mother coming for delivery in active or expulsive phase of labor. Gicumbi District and Ministry of Health to scale up mothers' education and health promotion messages aiming at cutting down the delay to seek care by laboring mothers.

### To Byumba hospital and health centers in Gicumbi district

To improve the quality of labor monitoring. To work on services delivery in maternity and cut delays to intervene. To sensitize mothers with previous scarred uterus to consult as early as possible.

### To the community health workers

Community health workers should organize campaigns to promote maternal and child health.

## AUTHOR'S CONTRIBUTIONS

Corneille Killy Ntihakose and Nicholas Ngomi conceived the study, designed the study, performed the statistical analysis, and wrote up the manuscript.

## COMPETING INTERESTS

The authors declare no competing interests.

## FUNDING STATEMENT

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## ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Ethical clearance was obtained from Mouth Kenya Institutional review Board and Byumba Hospital Ethical Review Committee (ERC).

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