

# Perceptions of health workers on the referral of women with obstetric complications: a qualitative study in rural Sierra Leone

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## Research article

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# Abstract

## Background

Sierra Leone has one of the highest maternal mortality ratios in the world. Timely and well-coordinated referrals are necessary to reduce delays in providing adequate care for women with obstetric complications. This study describes the perspectives of health workers in rural facilities in Sierra Leone concerning the referral of women with obstetric complications.

## Methods

We conducted semi-structured group interviews with health care workers in nine peripheral health units in rural Sierra Leone regarding the referral of women with obstetric complications. Themes discussed were based on an interview guide. The data was analysed by systematic text condensation.

## Results

Perspectives were grouped according to the following themes identified: 1) communication between health care workers; 2) underlying influences on decision-making; 3) women's compliance to referral; 4) logistic constraints.

## Conclusion

Several factors in rural Sierra Leone are perceived to complicate timely and adequate referral of women in need of emergency obstetric care. Notable among these factors are fear among women for being referred and fear among health care workers for having maternal deaths or severe obstetric complications at their own facilities. Furthermore, the decision-making of health care workers concerning referral is negatively influenced by an atmosphere of hierarchy between health care workers. Such factors must be considered in efforts to reduce maternal mortality.

## Background

Sierra Leone has one of the highest maternal mortality ratios (MMR) in the world. According to the Sierra Leone Demographic Health survey in 2013, the MMR was 1,165 per 100,000 live births (1). The need to reduce this extremely high ratio is evident. In order to work towards meeting the United Nations Sustainable Development Goal target of an MMR below 70 per 100 000 (2), the Ministry of Health and Sanitation of Sierra Leone launched the Reproductive, Maternal, Newborn, Child and Adolescent Health Strategy in 2017, aiming to reduce the MMR of 1,165 to 650 by 2021 (3).

An underlying factor of the high MMR in Sierra Leone is the persistent low rate of facility-based births (1). Country-wide in 2013, only slightly more than half of the women gave birth in a health facility; 49.7% of women in rural areas versus 68.1% in urban areas (1). The West-African Ebola outbreak from 2013 to

2016 led to a further reduction in facility-based births as a consequence of a lack of possibilities to access the health system during the crisis (4, 5).

Pregnant women in Sierra Leone face many barriers to facility-based birth, including long distances, inability to afford costs of transport and healthcare and lack of trust in health facilities (6). These factors contribute to a phase-1 delay in deciding to seek healthcare in case of an emergency obstetric complication, as described in the three-phase delay model by Thaddeus and Maine (7). Even after having decided to seek health care, women are often confronted with delays in phase 2, transport delay, and phase 3, delay in diagnosis and treatment at the facility (8). Timely and well-coordinated referrals are necessary to reduce delay in receiving adequate obstetric care for women with obstetric complications. Currently, there is no literature available analysing aspects of reasons for delay of care within the obstetric referral system in rural Sierra Leone.

This study describes the perspectives of health workers in rural facilities concerning the referral system for women with obstetric complications. This data will provide better understanding of challenges faced by women who are referred with emergency obstetric complications in rural Sierra Leone.

## Methods

### Study design and setting

This qualitative study was conducted between the 1<sup>st</sup> of September 2018 and the 15<sup>th</sup> of March 2019 in Tonkolili District. This district is located in the Northern Province of Sierra Leone and sub-divided into eleven chiefdoms. Three hospitals with Comprehensive Emergency Obstetric and Neonatal Care are present. Basic and Comprehensive Emergency Obstetric and Neonatal Care (BEmONC and CEmONC) are services fundamental to provide adequate health care during pregnancy and childbirth. The signal functions of BEmONC and CEmONC centres are summarised in Appendix 1. Three chiefdoms in the north of Tonkolili District, Kafe Simiria, Kalansogoia and Sambaya Bendugu, with a combined population of 113,521 (2018), are served by two CEmONC centres, Magburaka Government Hospital and Masanga Hospital, an NGO-supported government hospital. Besides the two CEmONC centres, these chiefdoms are served by fifteen peripheral health units (PHUs), including four BEmONC centres. The maternity services provided at each facility level in these chiefdoms, according to the Ministry of Health and Sanitation, are summarised in Table 1. However, not all facilities designated to provide BEmONC and CEmONC in rural Sierra Leone are able to provide the full range of signal functions (9, 10). Therefore, BEmONC and CEmONC services might not actually be provided in practice. Referral occurs both in consecutive order starting from Maternal and Child Health Posts (MCHPs) as well as between lower level health facilities and district hospitals. Sierra Leone has national protocols for emergency obstetric care, including referral indications (11).

**Table 1:** Maternity services purportedly provided at each level of health facility

<p>Maternal and Child Health Post (MCHP)</p>	<ul style="list-style-type: none"> <li>• Antenatal care <ul style="list-style-type: none"> <li>o Nutritional supplementation in pregnancy (e.g. iron, folic acid and multivitamins)</li> <li>o Risk selection and ensuing referral</li> <li>o Malaria intermittent preventive treatment</li> </ul> </li> <li>• Intra- and postpartum care <ul style="list-style-type: none"> <li>o Monitoring of labour by using the partograph</li> <li>o Cord clamping</li> <li>o Active management of the third stage of labour</li> </ul> </li> <li>• Postnatal care <ul style="list-style-type: none"> <li>o Clinical assessment of the neonate (e.g. fever, convulsions, feeding)</li> <li>o Exclusive breastfeeding recommendation</li> <li>o Cord care</li> <li>o Clinical assessment of mother (e.g. temperature, blood pressure, bleeding)</li> <li>o Family planning counselling</li> </ul> </li> </ul>
<p>Community Health Post (CHP)</p>	<ul style="list-style-type: none"> <li>• MCHP services (see above)</li> </ul>
<p>Community Health Centre (CHC)</p>	<ul style="list-style-type: none"> <li>• MCHP services (see above)</li> <li><i>plus</i></li> <li>• Maternal anaemia and urine sediment assessment</li> <li>• BEmONC services (see appendix 1)</li> </ul>
<p>District Hospital</p>	<ul style="list-style-type: none"> <li>• MCHP services (see above)</li> <li><i>plus</i></li> <li>• Maternal anaemia, urine, HIV, malaria and tuberculosis assessment</li> <li>• Ultrasound scan</li> <li>• CEmONC services (See appendix 1)</li> </ul>

The chiefdoms in northern Tonkolili District were selected, since these three combined comprise the catchment area for emergency obstetric complications belonging to Masanga Hospital, for reasons of

geography and accessibility by road.

## **Data collection**

The qualitative data used in this study was collected using nine semi-structured group interviews conducted by RP between November 2018 and January 2019. Purposive sampling was used to ensure variation between facilities where interviews were conducted. This was based on the chiefdom, care level provided by the facility, and accessibility of the nearest district hospital (Table 2). Homogenous sampling was used as each interview was conducted with health workers currently working in the same health centre. In total, nineteen health workers participated in the group interviews. Their respective health worker cadres and competencies are summarised in Table 3. The interview guide (Appendix 2), which was used as a framework of themes, was initially developed using themes described by Thaddeus and Maine (7), previous literature concerning pregnancy and childbirth in Sierra Leone (6, 12), and preliminary discussions with stakeholders such as medical officers, community health officers (CHO), midwives and logistical officers employed at district referral hospitals. The guide was piloted in one PHU with two health workers. The interviews were held in English, using open-ended questions.

**Table 2:** Facilities where interviews were conducted

Town	Level	Distance to district hospital (km)	Travel time to district hospital* (min)
Chiefdom Kafe Simiria			
Mabontor	CHC	18.9	40
Masumbrie	CHC	21.5	40
Makontande	MCHP	28.9	50
Chiefdom Kalansogoia			
Bumbuna	CHC	42.6	70
Kamasaypana	MCHP	50.0	100
Kemedugu	MCHP	58.5	110
Chiefdom Sambaya			
Bendugu			
Bendugu	CHC	81.4	150
Kunya	CHP	92.3	180
Dankawalia	MCHP	71.9	135

\* Travel time by motorbike during dry season (November – May). Travel time during rainy season (June – October) will be substantially longer. Travel time by ambulance will be shorter. Roads were unpaved.

**Table 3:** Cadres and competencies of respondents

Health worker (number interviewed)	Competencies
Maternal and Child Health aid (MCH aid) (10)	2 years training. Competent in basic obstetric care.
State Enrolled Clinical Health Nurse (SECHN) (2)	2,5 years training. Competent in basic obstetric care.
Community Health Assistant (CHA) (3)	2 years theoretical + 1-year practical training. Competent in basic obstetric care.
Community Health Officer (CHO) (2)	3 years theoretical + 1-year practical training. Competent in basic obstetric care. No training in emergency obstetric care.
Midwife (2)	SECHN training + 1,5 year-midwifery training. Competent in emergency obstetric care including oxytocin administration, manual placenta removal, first treatment for (pre)eclampsia. No training in vacuum extraction.

## Analysis

All interviews were audio-recorded and transcribed verbatim by RP using Express Scribe Transcription Software (NCH Software, Greenwood Village, Colorado, USA). Data was analysed by RP through systematic text condensation whereby themes were identified by systematic coding and categorisation of quotes, as described by Malterud (13).

## Ethical Considerations

The study proposal was endorsed by the Masanga Medical Research Unit Scientific Review Committee. Ethical approval was obtained from the Sierra Leone Ethics and Scientific Review Committee. Permission to conduct the study in Tonkolili District was obtained from the District Health Management Team. Written informed consent was obtained from interview participants.

# Results

From these interviews, four major themes emerged: 1) communication between health care workers, 2) underlying influences on decision making, 3) women's compliance to referral, 4) logistic constraints.

## 1) Importance of communication between staff of different health centres

**Giving and receiving advice surrounding referrals.** Most health workers mentioned the necessity of asking for advice when having to decide whether to continue management or refer the woman to a higher-level health centre. One community health assistant (CHA) explains:

*"I am not saying 100% I know what I am doing. I know myself. I learn, I can just know my own area and then there are people who know better. I am just a community health officer, assistant in fact."*

Advice was often asked for and given in mobile phone conversations. However, sometimes higher cadre health workers travelled to health facilities to review women themselves before advice was given. Those asked for advice include CHOs, midwives, the District Health Sisters (supervising midwives, members of the Tonkolili District Health Management Team), the head of a maternity ward or a medical officer at a district hospital. However, one maternal and child health aid (MCH aid) mentioned that if she recognizes a woman requiring urgent referral to a higher-level facility, she will not delay by first calling for advice but will directly refer the woman to the community health centre (CHC). She will not, however, directly refer the woman to a district hospital or inform the CHC that this woman likely needs further referral, since she believes that this decision must be made by CHC staff.

Besides needing advice on whether or not to refer the woman to a higher-level facility, participants also mentioned a need for advice over the phone regarding clinical management while waiting for the ambulance to arrive, since this could take up to several hours.

**Feedback after referral.** Many health workers indicated that they were interested in the clinical course after a woman had been referred to the district hospital, as illustrated by one CHO:

*"We are highly interested in feedback, because they are lives and when we call on you people to rescue, then we have interest over them."*

Health workers in lower level facilities expressed a specific interest in knowing the clinical management including decisions on mode of birth at the district hospital. These health workers were oftentimes approached by relatives of the referred woman requesting updates on her clinical condition and outcome. Health workers often indicated their phone numbers on the referral notes in order to receive feedback. However, many respondents complained never receiving a response from the district hospital. Instead, they were forced to call the district hospital themselves, indicating that this comprised a communication barrier, since this required them to spend their own mobile phone credits.

Similarly, health workers complained of never receiving discharge notes with follow-up information after the woman had been discharged from the district hospital. They generally relied on the information the woman could give them verbally.

## 2) Underlying influences on decision-making

**Referral, perceived as the safest option for health workers.** The necessity of referral, as expressed by one health worker, was often to avoid complications and maternal death occurring at their own facility.

*“If a maternal death is here, we are going to suffer.”*

Often, a referred woman was described as ‘not my case’. Another health worker mentioned that when a woman was referred to a CHC, it was up to that facility to manage the woman with the complication and decide what to do. Such transfer of responsibility after referral was further illustrated by a story recounted by an MCH aid about a woman she had recently referred:

*“Yes, I delivered her. Male baby. Fresh still birth. So it is not my problem, because I have already referred her.”*

**Endangering behaviour by women requiring referral.** Some women did not want to be referred and health workers were under a lot of pressure from women and relatives while making a referral decision. Many women and relatives were perceived not to tell the truth when questioned about history, since they wanted to prevent the woman from being referred. One health worker mentioned that he sometimes heard rumours in the community that the point in time a woman and her relatives indicated as when onset of symptoms occurred was not always correct. Most respondents described that when a woman and her relatives were told that she needed to be referred, they started begging health workers not to refer her but to continue clinical management at the same facility. Women and relatives would try to convince them that they, as health workers, would be able to manage the woman with the complication without referral. One MCH aid stated:

*“They will want us to do everything while we don’t have that ability.”*

A CHA voiced his frustration at the women’s and relatives’ behaviour and stated that it endangered his own work.

## 3) Women’s compliance to referral

**Influential stakeholders involved to improve compliance.** Referral to a district hospital comes with many fears and worries for a pregnant woman. Examples mentioned by health workers include fear of undergoing surgery, viral haemorrhagic fever (Ebola or Lassa virus) infection, blood donation, male health workers and an unfamiliar environment in terms of language and people. Such fears contributed to women returning home instead of travelling to the health centre they were referred to. Respondents identified three influential stakeholders who may potentially reduce fears around referral. The first

stakeholder was the chief of the village or town, whose advice and instruction were of substantial influence on the women's and relatives' referral compliance. The second group of stakeholders, which was recognised by health workers as similarly influential, consisted of relatives in Freetown, the capital of Sierra Leone. One state-enrolled community health nurse (SECHN) stated:

*"They will always listen to their relatives out there."*

These relatives in Freetown were contacted and requested to attempt to convince the woman of the necessity of the referral and to adhere to the referral instructions. Finally, according to the health workers, women who had previously been referred to a district hospital and returned safely had a positive influence on a woman's perceptions regarding referrals to district hospitals.

#### **4) Logistic constraints**

**Medicine shortage as a burden on the referral system.** The logistical constraints of dealing with stockouts of medication in PHUs comprised an additional burden on the referral system. Many health workers, especially those working in CHCs, complained of struggling with medication shortages. Injectable antibiotics were often mentioned as insufficient for the purposed term. When medication stocks had been exhausted, the health worker was faced with two options. The first option was to request money from the woman to purchase medication at a local pharmacy. One health worker described the friction this created with the Free Health Care Scheme for pregnant and lactating women, as it was by law illegal to request money from these women.

*"I am not going to ask her to pay for the service I am rendering but just to provide the drug. But me that is punishable crime, I cannot... Then I be in fault."*

However, sending a woman directly to the pharmacy to buy medication themselves was not safe according to several health workers. They expressed their distrust in local pharmacists as they suspected them of not being properly trained and sometimes giving the wrong medication as well as administering injectable drugs themselves against regulations.

Health workers were therefore often forced to resort to referral to a district hospital in order for a woman to access the correct medication. One CHA voiced his desperation:

*"So what would you do? You just have to refer."*

He also expressed his worry about the reaction from the district hospital after receiving such referrals. He feared that the district hospital would doubt the competency of the health workers at the PHU referring a woman who could potentially be managed at their own facility. Finally, some respondents pointed out that referring such a woman exposed them to additional adverse outcomes such as the relatives falling back on traditional medicine or going to a local pharmacy, since this was cheaper than paying for referral transportation.

**Inadequate ambulance availability.** Tonkolili District has a limited number of ambulances available for the transport of women with emergency obstetric complications. Many health workers complained about the fact that when they call for an ambulance, they are told that the ambulance has broken down or to wait since the ambulance is on its way to a different, sometimes very distant PHU. It was also noted that it sometimes takes a long time before the ambulance team, comprised of a driver and a nurse, is mobilised at the district hospital and the ambulance is finally under way. One CHA summarised the problem as:

*“So sometimes it’s very difficult; the time the ambulance is here, the patient is seriously in a critical condition.”*

Another problem reported was the road accessibility of certain PHUs. Some of these PHUs can only be reached by motorbike and on foot. Accessibility is worse during rainy season. Ambulance transport during the rainy season was even stated to be not possible at all for several PHUs.

## **Discussion**

This study highlights several aspects of the obstetric referral system in rural Sierra Leone, which require attention in order to provide timely and adequate management of women with emergency obstetric complications.

### **Importance of communication between staff of different health centres**

The importance of communication between health centres to achieve an effective referral system was widely acknowledged by participating providers. Health care workers generally concurred with each other on the advantages of receiving advice on whether to continue management or refer a woman instead. However, our findings concerning the practice of waiting for a higher-cadre health worker from a different health facility to arrive and personally examine the woman before advising on a referral decision, are in disagreement with protocol and indicate a type 2 delay. This delay can be largely abated by adequate use of mobile phones to communicate with higher-cadre health workers for advice regarding referral decisions (14), as well as further education for MCH aids who will not need a second opinion anymore. Furthermore, the reluctance of lower-cadre health workers in referring women directly to a district hospital and thereby bypassing the higher-cadre health worker’s judgment as well as the reluctance of referring women to a CHC with the advice to further refer to a district hospital reveal a potentially harmful hierarchy between health workers. From Tanzania, Ueno et al. reported a similar atmosphere of hierarchy and lack of cooperation between different cadres of health workers and levels of health facilities as a challenge to EmOC service delivery (15).

Our findings also imply that following referral, district hospitals need to take initiative in providing health workers in PHUs with feedback in order to improve and encourage future referrals and follow-up management of the woman after discharge from the district hospital. Studies in Ghana, Burundi and Northern Uganda reported similar demands for feedback after referral (16-18). Multiple other studies have

described related gaps in communication surrounding obstetric referrals (19, 20) and have specified the critical role of communication in an effective referral system (20-23). Improvement in communication between health facilities and health workers is a necessary first step towards improving the referral system in northern Tonkolili District.

### **Underlying influences on decision making**

Our findings point at a mind-set of some health workers regarding obstetric referrals that has potential adverse effects on the timely management of women with emergency obstetric complications. Maternal mortality and morbidity were seen as tragic events for the women and relatives, but also alarming for themselves as health workers. Referral and the ensuing transfer of responsibility was regarded as an option to prevent themselves from being blamed in case of a complication. It is hypothesised that this mind-set is an adverse result of the increased awareness of, and attention to, the high maternal mortality and morbidity rates in Sierra Leone. Obstetric audits have been proven to be an effective method of reducing maternal mortality and morbidity (24-26), but a negative impact on work satisfaction and motivation have also been reported (26, 27). However, our findings provide limited evidence and further research in rural Sierra Leone is essential to accurately analyse this information.

Another underlying influence which became apparent throughout the interviews was the persuasiveness of women and relatives who did not want to be referred to a different health facility. Such persuasiveness has potential to delay the referral decision made by a health worker and thus results in phase 1 and phase 2 delays. Also, it may lead to over-confidence of lower-cadre health workers respecting their ability in managing women with obstetric complications, as has been previously reported in Sierra Leone by Theuring et al. (12).

### **Improving women's compliance with referral**

Fears experienced by women, as reported by health workers, to accept referral to a district hospital such as fear of operations, blood donation, male health workers conducting births, and a new environment were largely similar to those previously reported by multiple studies in similar settings (16, 18, 28, 29). A lingering fear of Ebola in district hospitals in post-Ebola regions including Sierra Leone has been described by several other studies (12, 30, 31). Three groups of influential stakeholders were identified: local village chiefs, relatives in the capital, Freetown; and women who have previously been referred to a district hospital and have returned safely. Consulting these stakeholders in case of referral refusal will potentially increase women's compliance. These stakeholders are understood to be similarly influential in all rural areas of Sierra Leone.

### **Logistical constraints**

The influence of medication shortage in PHUs on the effectiveness of the referral system becomes apparent through our findings. The combined effect of the Free Health Care Scheme (32) and the distrust in local pharmacies forces health workers into avoidable referrals to district hospitals. In turn, these

referrals lead women to a choice of options from traditional medication or buying medication from a local pharmacy. The shortage of medication in PHUs is a burden on and complicating factor of the referral system in northern Tonkolili District; however, adequate availability of medication should not avert mandatory referrals of women with obstetric complications, which require management in district hospitals.

The shortage of ambulances for transport of women from lower-level health facilities to district hospitals is a commonly reported contributor to phase 2 delay in sub-Saharan Africa (16-18, 33, 34). Our findings show that this barrier to access to adequate emergency obstetric care is also present in rural Sierra Leone. The inability of ambulances to reach certain PHUs, due to arduous terrain such as steep hills and river crossings and poor road conditions, worsened by seasonal rains, displays the poor infrastructure of rural Sierra Leone.

In February 2019, after our data collection was completed, the Ministry of Health and Sanitation of Sierra Leone and the non-governmental organisation Doctors with Africa CUAMM launched the National Emergency Medical Service (NEMS), which provides free-of-charge ambulance service in all of Sierra Leone. The implementation of the NEMS allows for imperative reduction in delay in access to adequate emergency obstetric care in district hospitals. This reduction in delay is possible as the number of functioning ambulances is increased, and as the travel time is decreased as soon as the ambulances are not only stationed in district hospitals any longer, but also in PHUs.

## **Strengths and Limitations**

A strength of this study is the selection of PHUs and health workers for the interviews, which is representative of health facilities and health workers in rural Sierra Leone. Therefore, interventions targeting the obstetric referral system in other areas of rural Sierra Leone can be supported by our findings. Another strength is the use of open-ended questions during the interviews, which allowed the participants to express their own experiences and feelings. Additionally, as this study was conducted before the implementation of the NEMS, this study allows for a follow-up study analysing the effect of the NEMS. The authors hypothesise that only the themes 'communication' and 'logistical constraints' have been affected by the NEMS.

A limitation of this study was that the data collected using semi-structured group interviews was not triangulated with quantitative data collected with other methods. Additionally, a limited number of interviews were conducted which lowers the quality of evidence. Lastly, the interviews were conducted in English while the participants were more familiar with Krio.

## **Conclusion**

In the perspectives of health care workers, delay in access to adequate emergency obstetric care is caused by lack of communication between health workers at different facilities, lack of involvement of influential stakeholders, medication shortage and lack of ambulance services. Notably, fear among

women and their relatives for them to be referred is another cause of delay. Furthermore, the decision-making of health care workers concerning referral is negatively influenced by an atmosphere of hierarchy and fear of having maternal deaths and other severe complications at their facility.

These are all factors that may complicate timely and adequate referral of women in need of emergency obstetric care. As this delay is an underlying cause of the high MMR in rural Sierra Leone, these potential sources and causes of delay must be considered in efforts to reduce maternal mortality.

## **List Of Abbreviations**

MMR: Maternal Mortality Ratio;

BEmONC: Basic Emergency Obstetric and Neonatal Care;

CEmONC: Comprehensive Emergency Obstetric and Neonatal Care;

MCHP: Maternal and Child Health Post;

CHP: Community Health Post;

CHC: Community Health Centre;

PHU: Peripheral Health Unit;

CHO: Community Health Officer;

CHA: Community Health Assistant;

SECHN: State-Enrolled Community Health Nurse;

MCH-aid: Maternal and Child Health Aid;

NEMS: National Emergency Medical Service

## **Declarations**

### **Ethics approval and consent to participate**

The study proposal was endorsed by the Masanga Medical Research Unit Scientific Review Committee. Ethical approval was obtained from the Sierra Leone Ethics and Scientific Review Committee. Permission to conduct the study in Tonkolili District was obtained from the District Health Management Team. Written informed consent was obtained from interview participants.

### **Consent for publication**

Not applicable

## Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

## Competing interests

All authors declare that they have no competing interests.

## Funding

No funding was received for the research reported.

## Authors' contributions

RP carried out the field work, analysed the data and wrote the first draft of the paper. HM and JvN conceived the study and contributed to phrasing the study question, data interpretation and writing of the paper. AF, PSK and MPG contributed to data interpretation and writing of the paper. TvdA oversaw the conduct of the study and contributed to data interpretation and writing of the paper. All authors have contributed to the writing and approval of the final version of the paper.

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## Appendices

### Appendix 1: Signal functions of BEmONC and CEmONC

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#### Basic Emergency Obstetric and Neonatal Care (BEmONC)

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1. Parenteral treatment of infection (antibiotics)
  2. Parenteral treatment of severe pre-eclampsia/eclampsia (e.g., MgSO<sub>4</sub>)
  3. Treatment of PPH (e.g., uterotonics)
  4. Manual vacuum aspiration of retained products of conception
  5. Assisted vaginal delivery (e.g., vacuum-assisted delivery)
  6. Manual removal of placenta
  7. Newborn resuscitation
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#### Comprehensive Emergency Obstetric and Neonatal Care (CEmONC)

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#### All components of BEmONC, plus

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1. Surgical capability, including anesthesia (e.g., Cesarean section)
2. Blood transfusion

## Appendix 2: Interview Guide Obstetric Referral System Northern Tonkolili District

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### General

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1. Describe the catchment area of this health facility (number of villages, terrain).
  2. Describe this health facility (number and competency of staff, average number of births and referrals).
  3. Describe the referral options of this health facility (nearest health facility, nearest CHC, nearest district hospital).
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### Authorisation

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4. Which of the staff is allowed to decide to refer women to another facility?
  5. Is there always staff present that is allowed to independently refer women?
  6. Does the CHO or midwife in the CHC have to be contacted before referring a woman to another facility?
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### Referral Process

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7. Describe the steps taken when referring a pregnant or post-partum women.
  8. Describe how/if referral notes are used in this health facility.
  9. Describe the benefit of referral notes.
  10. Describe how/if feedback is received from the referral facility.
  11. Describe how/if advice is obtained from other health workers before referral.
  12. Describe how/if national guidelines are used for referring a woman.
  13. Describe how/if maternity patients without an emergency indication are referred to a different health facility.
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### Accessibility

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14. Describe the accessibility of Magburaka Government Hospital from here.
  15. Describe the accessibility of Masanga Hospital from here.
  16. If you were to refer 10 women to a hospital, how many of them do you think will actually arrive at the hospital?
  17. Describe some reasons why referred women sometimes refuse referral.
  18. Describe transportation options available for referral.
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### Ambulance Referrals

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19. Describe the process of ordering an ambulance from Magburaka Government Hospital.
  20. Describe the process of ordering an ambulance from Masanga Hospital.
  21. How many times have you ordered an ambulance in the past month?
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22. How long does it take for the ambulance to arrive at your health facility after you have ordered the ambulance? (from Magburaka/Masanga)

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23. Which of the staff is allowed to order an ambulance?

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24. Is there always staff present that is allowed to order an ambulance?

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25. Does the CHO or midwife in the CHC have to be contacted before ordering an ambulance?

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26. Is transferral by ambulance free for the woman?

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27. Describe problems with the current ambulance referral system.

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28. Describe recommendations for improving the ambulance referral system.

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ANC/under 5

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29. Describe the antenatal care in this health facility (frequency of ANC-days, number of women)

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30. Describe how/if governmental Maternity Record Cards are used during ANC visits, delivery and postnatal checks.

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Masanga Hospital

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31. Describe recommendations for improving the health care at Masanga Hospital.

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32. Is Masanga Hospital an official referral hospital in Tonkolili District?

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33. Is healthcare free for pregnant and lactating women and children under 5 at Masanga Hospital?

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