

SCHOOL OF PUBLIC HEALTH, COLLEGE OF HEALTH

SCIENCES UNIVERSITY OF GHANA, LEGON

AN EVALUATION OF MATERNAL REFERRALS IN THE SISSALA

EAST DISTRICT

BY

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## DECLARATION

I, Sandaare Sebastian Ngmenenso, hereby declare that, except for the other people's work which have been duly acknowledged, this work is the result of my own original research, and that this dissertation, either in whole or in part has not been presented elsewhere for another degree.

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## DEDICATION

This study is dedicated to my son Mwinbuobo Adelphus.



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I am grateful to God for the guidance and strength to finish this work.

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## ABSTRACT

### Background

The referral system is an integral part of maternal health care and is particularly crucial to patients living in rural areas, where vast distances and bad road network, make access to district hospitals an expensive and time-consuming challenge. Ensuring skilled attendance at birth requires developing a responsive referral system which provides links between levels of health care.

It is widely accepted that substantial reductions in maternal mortality and severe morbidity are impossible to achieve without an effective referral system for cases with complications.

**Objective:** To evaluate the referral system for pregnancy- related complications in the Sissala East district.

**Methods:** A mixed-tool was developed for the evaluation using the Ghana Health Service referral policies and guidelines, the National Reproductive Health Service Protocols, tools for monitoring maternity referral system in developing countries by Murray et al and Guidelines for Monitoring the Availability and Use of Essential Obstetric Services.

Medical records were reviewed for patients who were referred with pregnancy- related complications from the subdistricts to the district hospital between January 2007 and April 2008. Six (6) health centres, one Community-Based Health Planning and Services (CHPS) zone and the district hospital records were used for the study from May to August 2008. In-charges of the maternity units at the time of the study were interviewed on issues concerning the challenges

with maternal referrals. Questionnaires were used to assess the availability of Essential Obstetric Care (EOC) in the various health facilities. Monitoring guide was used to check for availability and use of standard referral forms and referral registers. The data was analysed using Microsoft excel 2007 version to create tables and graphs. Content analysis was done for data collected by indepth interview.

**Results:** A total of 72 patients with pregnancy-related complications were referred from the subdistricts to the district hospital between January 2007 and April 2008. Majority of the patients were referred due to prolonged labour (23.6 %), incomplete abortion (16.7%) and risk pregnancy (16.7%). Five (5) maternal deaths and seven (7) still births were recorded out of the referrals. The annual intrapartum referral rate for 2007 was 10.53% and the maternal case fatality rate among referred patients was 12.5%. Referral forms and referral registers were not available in the health facilities. Feedback was given in only 19.4% patients referred to the district hospital. None of the health facilities assessed offered Basic Essential Obstetric Care services except the hospital which offered comprehensive EOC services.

Lack of emergency community transport and communication were major challenges to the referral system in the district.

**Conclusion:** The referral system for pregnancy-related complications was found to be ineffective in the Sissala East district and needs improvement.

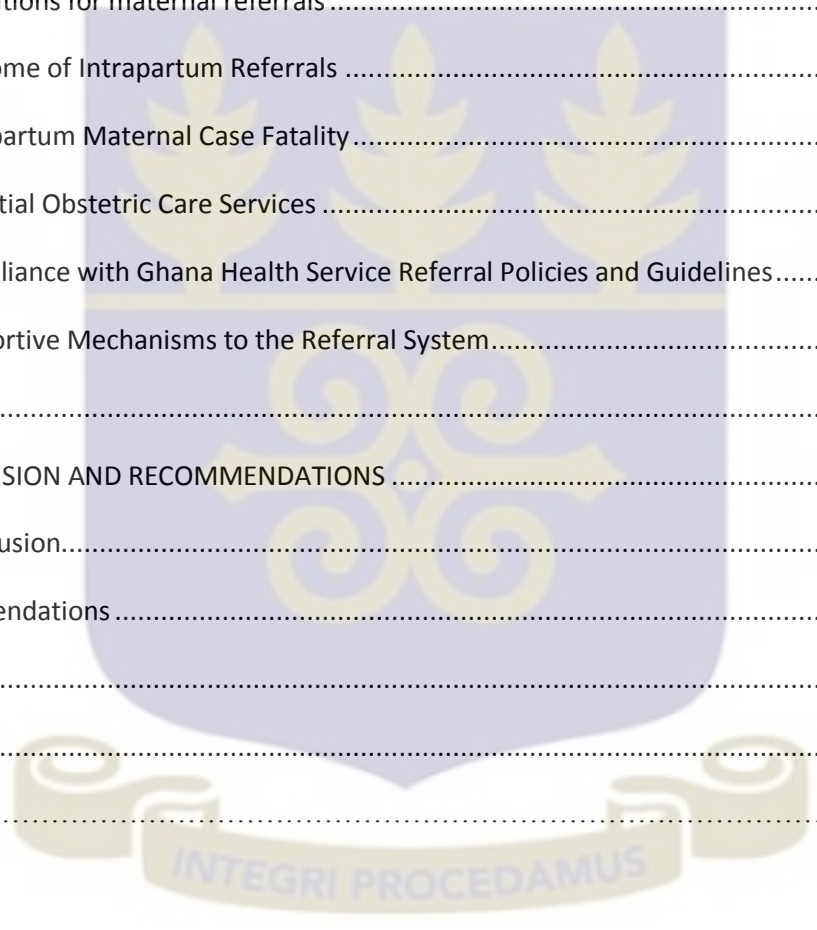
**Keywords:** Referral system, maternal complications, Sissala East district, Ghana.

## **Table of Contents**

DECLARATION .....	ii
DEDICATION .....	iii
ACKNOWLEDGEMENT .....	iv
ABSTRACT .....	v
LIST OF TABLES .....	x
LIST OF FIGURES .....	xi
LIST OF ABBREVIATIONS/ ACRONYMS.....	xii
DEFINITION OF TERMS.....	xiv
CHAPTER ONE .....	1
1.0 INTRODUCTION.....	1
1.1 Background.....	1
1.2 Problem Statement.....	3
1.3 CONCEPTUAL FRAMEWORK.....	4
1.4 Justification.....	6
1.5.0 OBJECTIVES .....	7
1.6 Research Questions.....	8
CHAPTER TWO .....	9
2.0 LITERATURE REVIEW.....	9
2.1 Referral and its role within maternity care system.....	9
2.2 Referral-level (receiving) facilities.....	10
2.3 The role of referring facilities.....	11
2.4 The Gate-keeper mechanism.....	11
2.5 Requisites for effective maternity care referral systems .....	12

2.6	A referral strategy informed by the assessment of population needs and of health system capabilities .....	13
2.7	The need for an adequately resourced referral centre .....	14
2.8	Formalised communication and transport arrangements.....	15
2.9	Availability of protocols for referrer and receiver .....	16
2.10	Pro-poor protection against the cost of emergency referral.....	17
2.11	Capacity to monitor effectiveness of the referral system .....	18
CHAPTER THREE .....		19
3.0	METHODS .....	19
3.1	Type of study.....	19
3.2	Study Area.....	19
3.3	Variables.....	21
3.4	Study Population.....	22
3.5	Sampling .....	22
3.6	Data Collection Techniques/Methods.....	22
3.7	Tools .....	23
3.8	Quality Control.....	23
3.9	Data processing and analysis .....	24
3.10	Ethical Considerations .....	24
3.11	Pilot Study .....	24
3.12	Limitations.....	25
CHAPTER FOUR .....		26
4.0	RESULTS .....	26
4.1.1	Description of Population .....	26
4.2.0	Annual intrapartum referral rate in the district.....	30
4.3.0	Case fatality rate among complicated cases referred to the district hospital. ....	31

4.4.0	Compliance to the Ghana Health Service referral policies and guidelines by the health facilities in the district.....	32
4.5.0	Availability of Essential Obstetric Care services in the district. ....	34
4.6.0	Supportive mechanisms put in place for effective referral of patients in the district. ....	36
CHAPTER FIVE.....		39
5.0	DISCUSSION .....	39
5.1	Indications for maternal referrals .....	40
5.2	Outcome of Intrapartum Referrals .....	41
5.3	Intrapartum Maternal Case Fatality.....	42
5.4	Essential Obstetric Care Services .....	43
5.5	Compliance with Ghana Health Service Referral Policies and Guidelines.....	44
5.6	Supportive Mechanisms to the Referral System.....	44
CHAPTER SIX.....		47
6.0	CONCLUSION AND RECOMMENDATIONS .....	47
6.1	Conclusion.....	47
6.2	Recommendations .....	48
REFERENCES .....		52
APPENDICES .....		54
APPENDICES.....		53



## LIST OF TABLES

Table 3.1-	Variable-Indicator Method Matrix.....	21
Table 4.1	Age Characteristics of Patients.....	26
Table 4.2	Parity characteristic of referred maternal cases.....	53
Table 4.3	Indications for maternal referrals from health centres to SED hospital.....	54
Table 4.4	Outcome of maternal cases in labour referred from Health Centres.....	29
Table 4.5	Annual Intrapartum referrals by Health Centres .....	30
Table 4.6	Summary of Complicated Maternal Conditions.....	31
Table 4.7.1	Compliance to GHS Referral Policies and Guidelines by Health Centres.....	33
Table 4.7.2	Compliance to GHS Referral Policies and Guidelines by Hospital.....	33
Table 4.8	Number of Patients Referred and Feedback Received by Health Centres.....	34
Table 4.9	Availability of EOC Services in Health the Facilities.....	35
Table 4.10	Delivery Coverage in Various Sub-districts.....	55
Table 4.11	Distribution of Staff and Health Facilities.....	55



## LIST OF FIGURES

Figure 4.1	Distribution of Parity Characteristics of Referred cases.....	27
Figure 4.2	Percentage Distribution of Indications for Maternal Referrals.....	28
Figure 4.3	Skilled and TBA Deliveries by Sub-districts.....	36



## LIST OF ABBREVIATIONS/ ACRONYMS

**AIDS**-Acquired Immunodeficiency Syndrome

**AMDD**-Averting Maternal Death and Disability

**CHPS**-Community-based Health Planning and Services

**DANIDA**- Danish International Development Agency

**DHA**-District Health Administration

**DHMT**-District Health Management Team

**DHS**-Demographic and Health Survey

**EmOC**-Emergency Obstetric Care

**EOC**- Essential Obstetric Care

**GHS**-Ghana Health Service

**HIV**-Human Immunodeficiency Virus

**IMCC**-International Medical Cooperation Committee

**IMCI**- Integrated Management of Childhood Illness

**JICA**-Japan International Cooperation Committee

**OPD**-Out Patient Department

**SED**-Sissala East District

**TBA**-Traditional Birth Attendant

**UNFPA**-United Nations Funds for Population Activities

**UNICEF**-United Nations Children's Fund



## DEFINITION OF TERMS

1. Maternal referral: the system for transferring the management of a woman with complication during pregnancy, labour or peuperium from a lower level of health care to the appropriate level for quality care (Author's definition).
2. Emergency obstetric care: the minimum package of life-saving skills provided to a woman with obstetric complication at a health facility.
3. Levels of health care: level A-health care at community level, level B-health centre, level C-district hospital.
4. Gate-keeper mechanism-a patient at the community, should move to the district hospital through a referral from the health centre.
5. Skilled Attendant: an accredited health professional-such as a midwife, doctor or nurse-who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies,childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns (WHO 2004a) .
6. Intrapartum referral rate is the number of women referred during labour per 100 labour cases in a year (Murray et al 2001).
7. Case fatality rate is defined as the number of deaths from obstetric complicatios as a proportion of all women with obstetric complications in a period of time (WHO 1994).

8. Unmet need for EOC is the proportion of all women with complications who do not have access to EOC facilities (Murray et al 2001).
9. High risk pregnancy is any pregnancy with identified problem(s) which need special attention to prevent complications (e.g previous caesarean section, Anaemia in pregnancy). (Authors definition).



## **CHAPTER ONE**

### **1.0 INTRODUCTION**

#### **1.1 Background**

Millenium Development Goal 5 (MDG 5) aims at improving maternal health with the target to reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio (UN 2007).

An estimated 500,000 or more women die each year from complications of pregnancy and childbirth, 95% of them in Africa and Asia. In Ghana, the maternal mortality ratio is estimated at around 214 maternal deaths per 100,000 live births (GSS 1994).

One strategy to meeting the MDG5 is to ensure that every delivery is attended to by a skilled birth attendant. This dream is still far from reality in Sub-Saharan Africa where 45% of deliveries are conducted by skilled birth attendants (UN 2007). The situation is worse in the Sissala East District where 23.1% of deliveries are carried out by skilled attendants (DHA Annual report 2007).

Ensuring skilled attendance requires developing a responsive referral system which provides effective links between levels of care on a 24-hour basis (MacDonagh 2005).

About 15 percent of all pregnant women experience life-threatening complications as a result of their pregnancy (Ghana Statistical Service 2003).

It is widely accepted that substantial reductions in maternal mortality and severe morbidity are impossible to achieve without an effective referral system for complicated cases. Early detection and referral to higher levels of care might also substantially reduce the complications of

childbirth, including birth asphyxia, that have been found to contribute up to one-third of neonatal deaths in some developing countries (WHO 1994).

Requirements of an effective referral system include: an adequately resourced referral centre; communications and feedback systems; designated transport; protocols for the identification and management of complications; personnel trained in their use ; teamwork between referral levels; a unified records system; mechanism to ensure that patients do not bypass a level of the referral system ,that is ,good patient information, and structured fee and exemption systems ( Murray et al. , 2001).

Effective referral requires clear communication to ensure that the patient receives optimal care at each level of the system, and facilitates the patient to move between facilities according to the disease or condition severity. Proper communication should accompany this movement in both directions: upward, describing the problem as seen at the lower level facility and indicating the reason for referral and, importantly,feedback from the referral facility to the referring facility, describing the findings,actions taken and the follow up needed. The weakest part of this communication is generally feedback from the higher level facility. This communication not only assures proper patient care and follow up, but also provides continuing education to the lower level facility and their staff (GHS/JICA 2008).

The referral mechanism involves communities, primary, secondary and tertiary facilities and requires coordination, cooperation and transfer of information so that patients receive care promptly and at the right level.

The Ministry of Health/Ghana Health Service has developed two policy documents; (1) The national referral policies and guidelines (2006) and (2) the national reproductive health service

protocols(1999) which aim to provide guidance and standards to improve referral practices and ensure quality care at all levels of health care. These two policy documents were used as standard tools to evaluate the system of referring and management of women with complications during pregnancy, labour and post-partum in the Sissala East District.

## **1.2 Problem Statement**

The Ghana Service Provision Assessment survey 2002 indicates that in the Upper West region, only 9% (2/22) of health facilities had emergency transportation support for maternity emergencies (Ghana Statistical Service 2003).

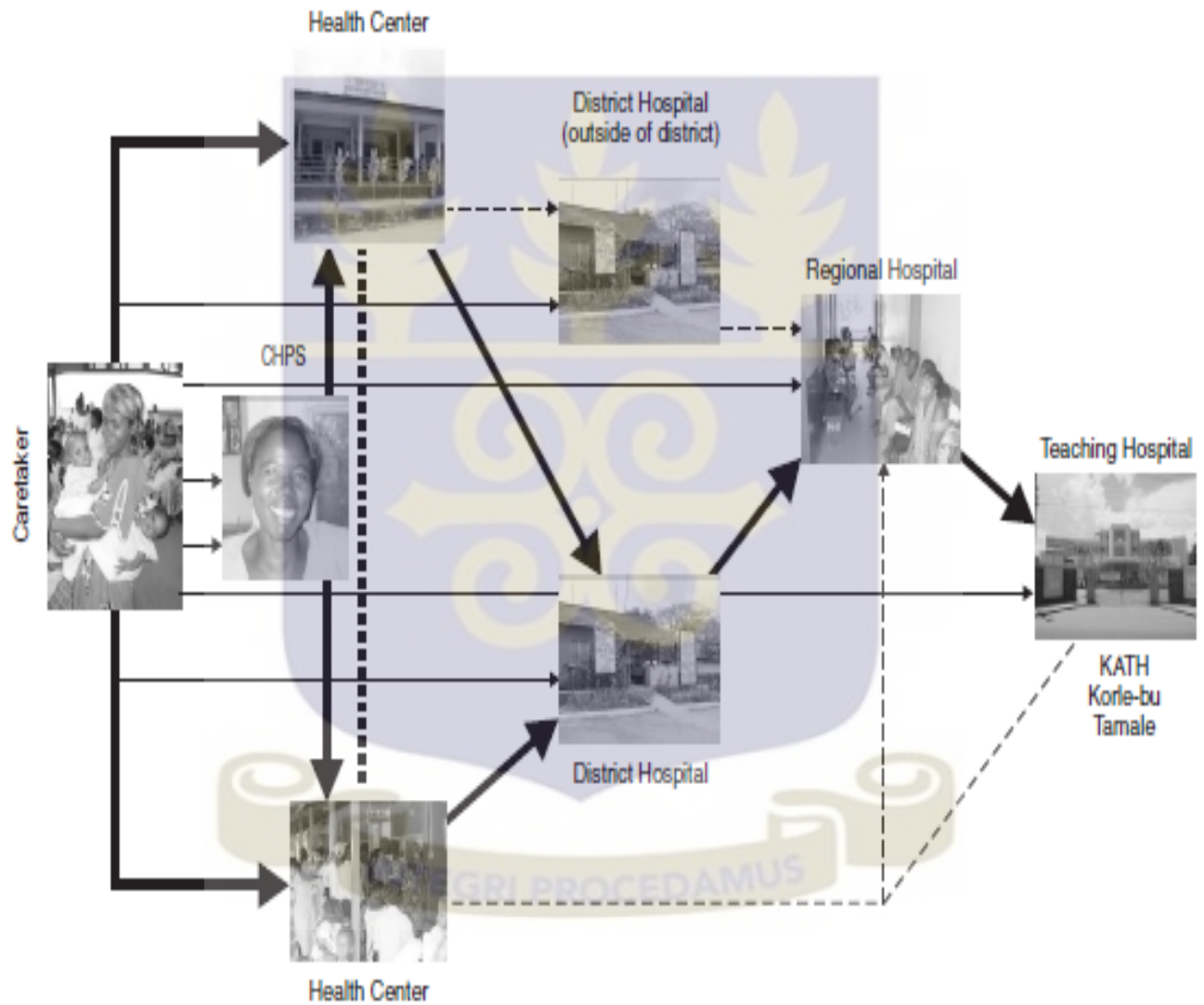
The Sissala East District is faced with the problems of inadequate skilled birth attendants and geographical inaccessibility to quality health care. Traditional Birth Attendants (TBAs) form a major force of health providers for pregnant women in the district as 59.8 percent of deliveries were conducted by TBAs in 2007 (DHA Annual report 2007). Pregnant women thus, have a high unmet need for Essential Obstetric Care in the district. Women with maternal complications are often referred from distant communities to a health facility, most times the district hospital where they can get access to Essential Obstetric Care (EOC) services.

The district recorded three (3) facility-based maternal deaths and ten (10) still births in 2007 as a result of delays to emergency obstetric care. (DHA Annual Report 2007).

A major strategy to narrow the gap of high unmet need for EOC is the establishment of an effective referral system in the district. This can be achieved by monitoring and evaluation of maternal referrals in the district to identify the weaknesses for improvement.

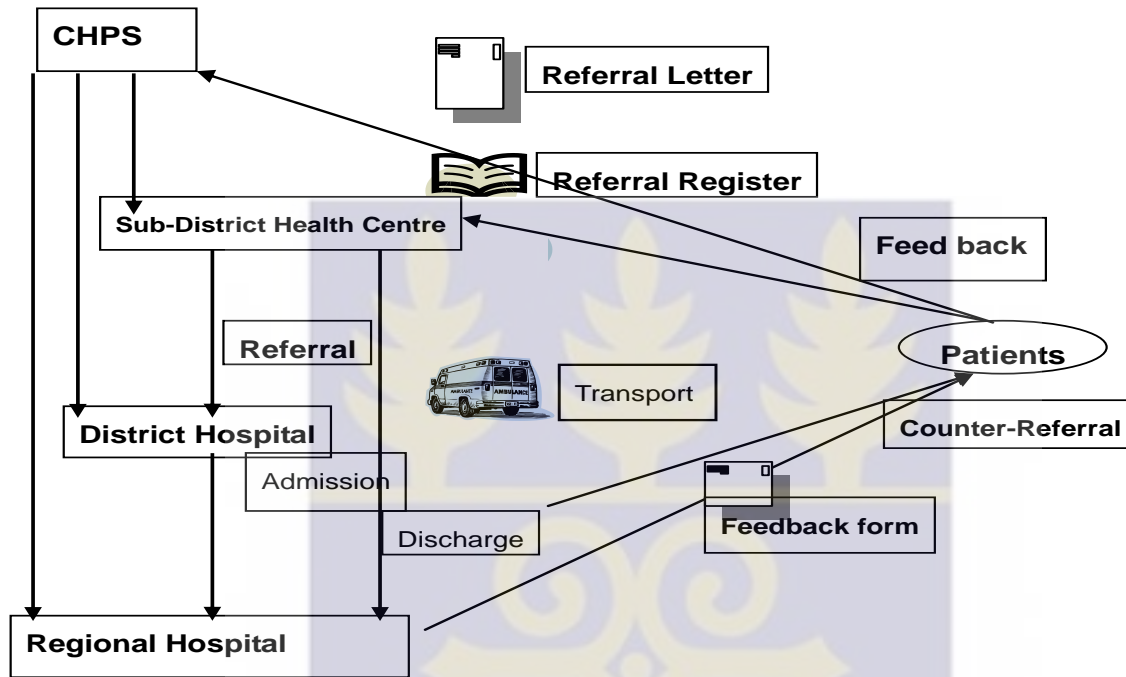
### 1.3 CONCEPTUAL FRAMEWORK

#### Diagram Showing Referral Pathways in Ghana



Source: GHS/JICA (2008). Outline for Referral Procedure

### Diagram Showing Outline of Referral procedure within the Upper West Region



Source: GHS/JICA (2008) Outline for Referral Procedures

The diagrams above show the referral pathways for a patient from the community level to the tertiary level (Teaching Hospital). A patient who presents at the CHPS zone should be referred to the health centre or district hospital or regional hospital depending on the severity of the condition of the patient and the type of services available at the referral centre of choice. Likewise, a patient who presents at the district hospital can be referred to the regional hospital or teaching hospital depending on the type of illness. In all referrals, the patient should be accompanied with a referral letter (appendix 6) to the referral centre. A feedback (appendix 7)

should accompany the patient to the referring centre indicating the final diagnosis and how the patient was managed.

#### **1.4 Justification**

The Millenium Development Goal 5 (MDG5) is unlikely to be achieved in the Sissala East District because of limited skilled birth attendants and geographical inaccessibility to EOC.

An effective referral system is therefore crucial to reduce the high unmet need for EOC services in the district by ensuring the timely detection and transportation of mothers with maternal complications to EOC facilities for care. This can be achieved by regular monitoring and evaluation of maternal referrals in the district to identify gaps for improvement. There has not been any documented evidence of comprehensive evaluation of maternal complications referred from the sub-districts to the district hospital for management in the Sissala East District, hence, the urgent need for this study.

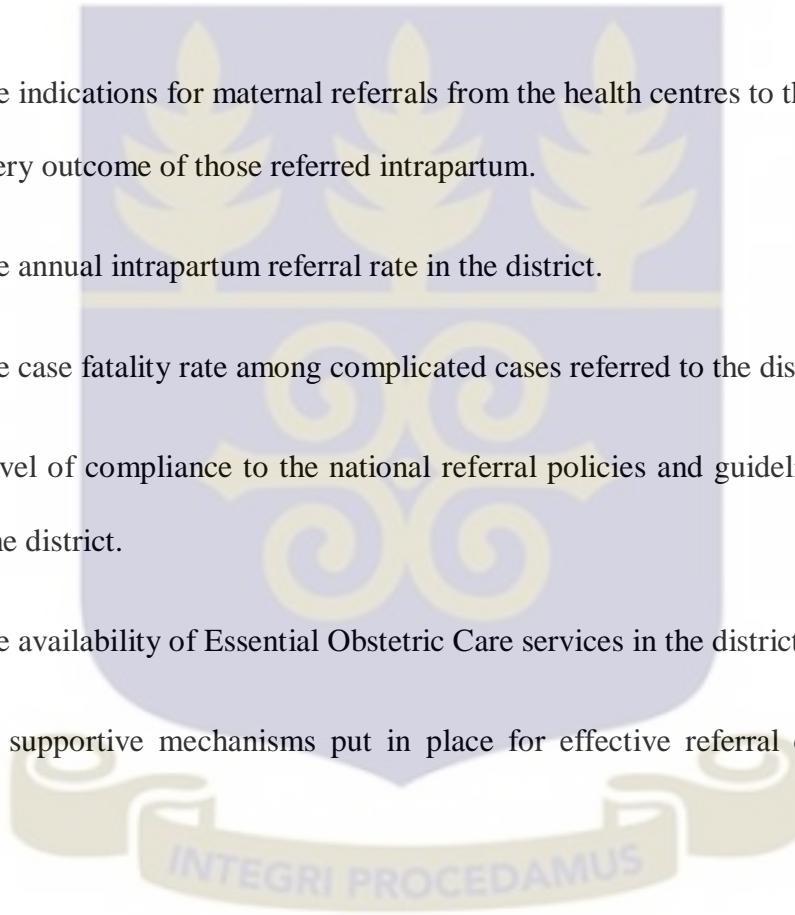
The study will provide baseline information for monitoring and evaluation of maternal referrals in the district in particular and the Upper West region at large. It will serve as a guide to the district health administration in the allocation and distribution of resources in the district. It could also be adopted and implemented at the national level. The ultimate goal of the study is to build an effective referral system that will contribute to the reduction of maternal mortality and morbidity in the Sissala East District of the Upper West Region.

## **1.5.0 OBJECTIVES**

1.5.1 General Objective is to evaluate the system for referring pregnancy-related complications from the subdistricts to the district hospital in the Sissala East District.

## **1.5.2 SPECIFIC OBJECTIVES**

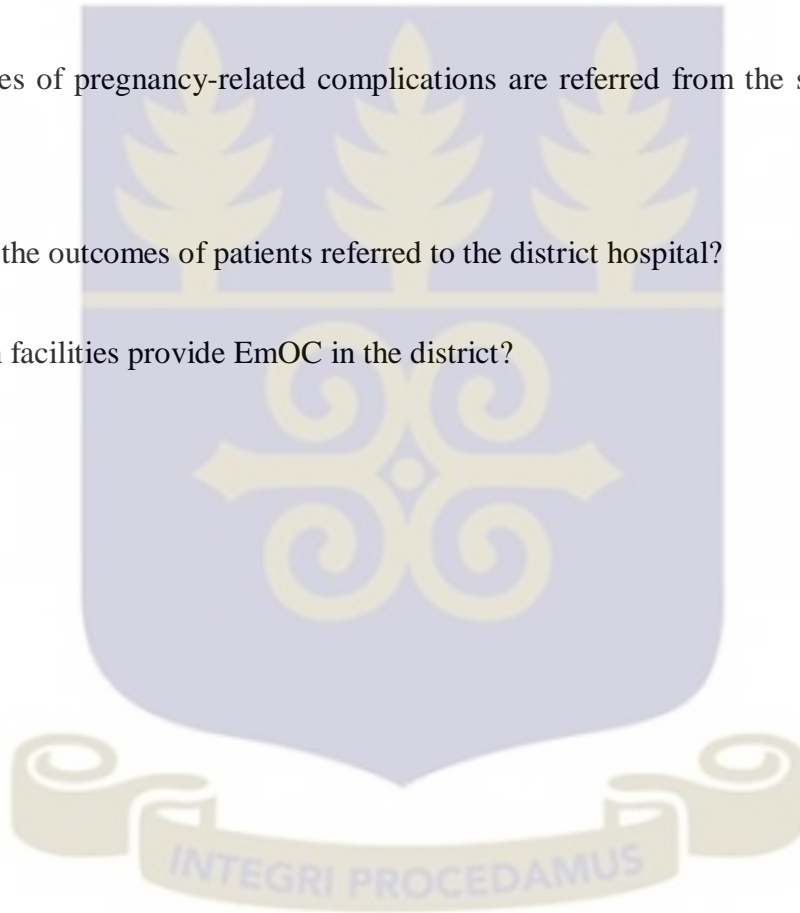
1. Determine the indications for maternal referrals from the health centres to the district hospital and the delivery outcome of those referred intrapartum.
2. Determine the annual intrapartum referral rate in the district.
3. Determine the case fatality rate among complicated cases referred to the district hospital.
4. Assess the level of compliance to the national referral policies and guidelines by the health facilities in the district.
5. Determine the availability of Essential Obstetric Care services in the district.
6. Describe the supportive mechanisms put in place for effective referral of patients in the district.



## 1.6 Research Questions

The study is intended to provide answers to the following questions:

1. Is there a formal, structured referral system in the Sissala East District?
2. What are the gaps with the referral system in the Sissala East district?
3. Do health workers comply with the referral policies and guidelines?
4. What types of pregnancy-related complications are referred from the subdistricts to the district hospital?
5. What are the outcomes of patients referred to the district hospital?
6. Do health facilities provide EmOC in the district?



## **CHAPTER TWO**

### **2.0 LITERATURE REVIEW**

#### **2.1 Referral and its role within maternity care system**

Referral is a set of activities undertaken by a health care provider in response to his inability to provide the necessary intervention (Ghana Health Service, Referral Policies & Guidelines, 2006).

It requires a two-way system e.g from the community to the appropriate level of care and back. It involves not only direct patient care but support services (e.g transport). An efficient referral system ensures that patients can access care at the primary (lower) levels and be referred promptly for secondary or tertiary care if required. Likewise, referral back to the lower facility is recommended when the reason for the referral has been addressed. The quality of the referral system is crucial in preventing maternal deaths. The hierarchy of maternity facilities only becomes a functioning unit if the referral system from the lower-order health centre to the referral unit is sufficient and effective. While the majority of complications are unpredictable, it is possible to identify antenatally certain high-risk groups (such as severe anaemia, breech presentation and multiple pregnancies), who should be referred to the appropriate facility well before labour begins. The effectiveness of risk- screening is however, limited by the fact that some high risk pregnancies deliver normally while other pregnancies considered as normal result in complications (Akalin & Maine, 1995; McDonagh, 1996).

Current safe motherhood strategies now emphasise the centrality of early identification of obstetric complications and local provision of appropriate medical and surgical care to respond to these. Recognition of obstetric complications and taking appropriate emergency referral procedures are, therefore, key skills required of frontline maternity care providers (Murray and Pearson, 2006).

## **2.2 Referral-level (receiving) facilities**

Evidence suggests that hospital-based management of obstetric emergencies can contribute significantly to reducing maternal mortality and morbidity (Van Lerberghe and De Brouwere, 2001; WHO, 1994). It is essential that pregnant women in whom complications develop have access to emergency obstetric care. To make such care more widely available involves upgrading rural health centres and referral hospitals and stocking them with the necessary drugs, supplies and equipment such as magnesium sulfate for eclampsia, antibiotics for infection and basic surgical equipment for caesarean sections. Training of health staff in emergency care and developing strong referral systems between communities and health care facilities are also important since delays in care can result in mortality (Rosenfield et al, 2007). Concentration of almost all births into “referral-level” hospitals does not guarantee a low maternal mortality ratio (Murray and Pearson, 2006). Evidence from the Dominican Republic, for instance, indicates that the maternal mortality ratio can be well over 100 per 100 000 live births in settings with very high levels of hospital delivery, if overcrowding and poor technical ability result in poor quality of care (Miller, et al. 2002).

### **2.3 The role of referring facilities**

Efficient referral can be inhibited by a lack of basic equipment and medicines, absence of up-to-date knowledge, and reluctance to act on obstetric complications at frontline facilities (Murray and Pearson, 2006). In Lusaka, Zambia, a refurbished and extended nurse-midwife run satellite clinic network successfully reduced the overload on the referral hospital and increasing professional attendance at delivery to 90% (Murray et al. 2001). Improving coverage and quality of skilled attendance at birth is increasingly stressed for the reduction of maternal mortality in many countries. However, this is not likely to be immediately attainable for many (Buttiens et al. 2004). Viable interim strategies are therefore important. Research findings show that the level of trained attendant needed at the peripheral level depends upon the accessibility and acceptance of referral care. A cluster randomised controlled trial in Pakistan (Jokhio et al. 2005) suggested that, reduction in maternal mortality is possible if the health system provides adequate outreach and referral support to non-professional home birth attendants . The evidence to support specific traditional birth attendant (TBA) training interventions to increase emergency obstetric referral, however, is weak overall (Sibley et al. 2004).

### **2.4 The Gate-keeper mechanism**

Existing studies suggest that there is widespread non-compliance with referral advice on the one hand and by-passing of lower level care on the other (Murray and Pearson, 2006).Such by-passing

is often initiated by the user, but sometimes by a lower-level health care provider (Omaha et al, 1998). When health care at first-contact facilities is perceived as poor, the bypassing of them is widespread, even in the presence of norms and barriers. Higher prices tend to deter use of the facility, while improved quality of services increases the likelihood of that facility being chosen (Akin & Hutchison 1999). Studies in Africa have shown that 61-82% of users of hospital childbirth facilities are “self referrals” (Akalin & Maine, 1995; Jahn, et al.1998; Nkyekyer, 2000). In remote settings where transportation is difficult and health systems are already weak, self referral to hospital may be the most realistic and the speediest option if obstetric complications are suspected.

## **2.5 Requisites for effective maternity care referral systems**

“The goal of a well-functioning” referral system is to ensure provision of effective treatment at the minimum cost (Stefanini, 1994). An additional important consideration in effective treatment for major obstetric complications is the reduction of unnecessary delays (Maine, 1991).

The requirements of an effective referral system include:

- An adequately resourced referral centre
- Communication and feedback system
- Designated transport
- Agreed setting-specific protocols for identification of complications
- Personnel trained in their use
- A unified records system

- Mechanisms to ensure that patients do not by pass a level of the referral system (Murray et al. 2001).

## **2.6 A referral strategy informed by the assessment of population needs and of health system capabilities**

Planning and managing a referral system require an understanding of the needs of the population at risk, and the capability of community and health system resources to meet those needs. Estimates of the proportion of pregnant women that will experience life-threatening complications allow forecasting of the likely need for emergency and elective referral, but these need to be informed by locally changing disease patterns. In some settings, for example, non-obstetric causes of maternal death such as malaria, tuberculosis and chronic respiratory tract infections linked to HIV/AIDS are beginning to outstrip those due to direct obstetric causes (Murray and Pearson 2006).

Assessment of population needs should include cultural and ethnic diversity. Qualitative studies reveal the problems created by differences in language, behaviour, and expectations between the consumers of health care and its providers, which can contribute to a lack of referral system responsiveness (Murray and Pearson, 2006). Assessment of health system capability should encompass the full range of providers and facilities providing relevant care.

## 2.7 The need for an adequately resourced referral centre

The case for decentralisation of basic emergency obstetric care to local facilities with additional reachable 24-hour provision of comprehensive emergency obstetric care has been convincingly made (Berardi et al.1989; Maine et al. 1997). The Averting Maternal Death and Disability (AMDD) network has documented the success of upgrading emergency obstetric care (EmOC) facilities at district hospitals in a variety of settings. Between 2000 and 2003, the individual projects saw average increases of 144% in the number of women with obstetric complications treated, and an average decrease of 50% in the case fatality rate at the referral facilities (University of Columbia AMDD data). The extent to which the referral process should focus on referral of emergencies, or encompass women considered to be more vulnerable to complications or women with emerging complications such as pregnancy- induced hypertension, is an ongoing debate (Murray and Pearson,2006). Capacity at referral centres and the acceptability to communities of elective referrals need to inform programming. One advantage of a refined procedure of prenatal care in situations where travel to the referral hospital is prolonged or difficult is the ability to identify a limited number of women who can be fairly confidently referred to the hospital or health centre shortly before term in anticipation of their needing specialized help. The other requirement is the presence of a facility where the woman can stay without using up a hospital bed. Maternity waiting homes built in the proximity of the hospital or health centre meet this need satisfactorily (WHO, 1993).

## 2.8 Formalised communication and transport arrangements

There is the need to prioritise transport and communication arrangements because of the urgency of many obstetric emergencies. The use of radio-telephones in health centres in the mother-care project in Malawi reduced average transport delays from 6 to 3 hours (Africa Initiatives, 1998).

The Ghana Service Provision Assessment Survey 2002 revealed that only 41 percent of health facilities reported that they had some system to support transportation for maternity emergencies requiring transfer. Hospitals were more likely to have a system for emergency transportation (88%) than clinics (21%). Among the facilities that did have some arrangement for emergency transportation, the arrangement was described as a dedicated emergency vehicle located at the facility (44%), an official arrangement where the vehicle was based elsewhere (usually at a hospital), the referring facility (most often a health centre or clinic) calling for the vehicle when needed (14%), or other means (multipurpose vehicle or funds to pay for a hired vehicle) (79%) (Ghana Statistical Service 2003).

A review of peri-partum referrals to Korle Bu teaching hospital, Ghana, found the majority of these (59%) came by taxi. Interestingly, 90% of the referred women arrived in "good condition" and only 1% in "poor condition" (Nkyekyer, 2000). The potential for recruiting citizens as volunteers to provide their own emergency care is suggested by private organisations such as the Edhi ambulance service in Pakistan. Lions and Rotary clubs and the Dharmodaya are private ambulance service providers in Nepal (Paudel, 2002). Out-contracting to the private sector for

ambulance services has been implemented by Benoni City Council in South Africa (Brynard, 1995).

## **2.9 Availability of protocols for referrer and receiver**

Health providers need protocols to guide them in when to refer a patient. Such referral guidelines need to reflect local epidemiological conditions, organisational capacity and community preferences (Murray and Pearson, 2006). The Ghana National Reproductive Health Service Protocols were updated and printed in 1999. Since then there have been several changes in practices and knowledge. Review of the various sections of the protocols has been going on since 2003. Monitoring and supervisory reports showed that the protocols were not available in many health facilities throughout the country (Ghana Health Service, Annual Reproductive and Child Health Report, 2006). The use of unified records systems alongside such protocols may contribute to good inter-level communications. Staff training and monitoring visits were shown to be effective in improving record keeping in Ghana (Allotey and Reidpath, 2000). Absence of emergency referrals can result in long waiting times for the referred patient. (Norberg et al, 1996).

## **2.10 Pro-poor protection against the cost of emergency referral**

Analysis of Demographic and health survey data from ten (10) developing countries revealed significant negative associations between women's poverty status and maternal survival (Graham et al. 2004).

The 2001 Bangladesh Maternal Health Services and Maternal Mortality Survey indicates that 49% of the women belonging to the lowest wealth quintile who reported with emergency did not seek care, in contrast to the 22% of women in similar condition in the highest wealth quintile. The most common reason for not seeking care was cost (Murray and Pearson, 2006). An eight district study in Nepal found that over half of the families of women who delivered in hospital borrowed money to pay the high cost of transportation and facility-based EmOC (Borghi et al. 2004).

In Ghana, cost of ambulance services is not covered by the National Health Insurance Scheme (NHIS). The client bears the cost of transportation. For acute emergencies, ambulance service must be rendered even if the client cannot pay for the service immediately (Ghana Health Service, 2006: Referral policies and guidelines p.8).

## 2.11 Capacity to monitor effectiveness of the referral system

Little research has been conducted on how to measure the effectiveness of maternity referral systems (Murray et al.2001). Siddiqi et al (2001) recommends a systems analysis approach in which “all components essential to the functioning of the referral system are identified, followed by the selection of relevant, valid and objective assessment indicators which are then measured in the course of appropriate surveys”. Murray and Pearson (2006), suggest that district management teams can develop their own set of indicators to monitor available resources, emergency preparedness, local life saving skills, EmOC resources, and availability of urgent communication and transportation, across the public and private sectors.

In conclusion, there is evidence that great gains can be made in maternal health by strengthening the referral system. What the available literature does indicate is that, there is a considerable disparity between policy documents and the realities for many women attempting to access quality obstetric care in many urban and rural areas in developing countries. Specific programme elements need to be based upon an assessment of local priorities and capabilities as pertains in the Sissala East District of the Upper West Region.

## CHAPTER THREE

### **3.0 METHODS**

#### **3.1 Type of study**

The study is a descriptive study.

#### **3.2 Study Area**

The Sissala East District is one of the eight districts in the Upper West region of Ghana. The district was carved out of the old Sissala district in 2005 by the government for effective governance and decentralisation. The district is bounded to the East by the Upper East Region, South by Wa East, West Mamprusi and Nadowli districts, and West by Sissala West district and to the North by the Republic of Burkina Faso (see appendix 15 for map). It has Tumu as its capital. The district has a population of 50,916 (projected from the 2000 census figures) people living in 59 communities and covers an area of approximately 4,600 square km. Most of the people belong to the Sissala tribe. Some other minority tribes also living in the district include; Grunsi, Dagaaba and Akans.

Islam, Christianity and traditional religion are practised in the district. The main occupation of the people is subsistence farming. Livestock and poultry are reared in small scale. These animals are cherished as wealth by the people and are not killed for family consumption unless during special festivities. The district has only one rainy season beginning from March to September. The distance from the various subdistricts to the district hospital include Gwollu(40km), Kulfuo (32km), Kunchogu(48km), Nabugbelle(30km), Nabulo(58km), Sakai CHPS (20km) and Wellembelle (48km). All roads linking the communities are in deplorable state and some communities are not accessible during the rainy season. The common means of transport for the

people include; bicycle, motor-bike, donkeys and market trucks. Only the district capital and five communities are connected to the national electricity grid. All the health centres and CHPS Zones are without electricity from the national grid. They are all connected to solar panels which produce solar power for them as an alternative. Two FM radio stations in the regional capital and the national television network (GTV) cover the district and could be used for health promotion activities. The formal health system in the district consists of 1 hospital, 5 health centres, 2 functional CHPS zones and 12 community nutrition centres. The district hospital is manned by three (3) medical officers (one Ghanaian and two Cubans). Only the Ghanaian-trained medical officer can offer comprehensive obstetric care services. There are 12 midwives (8 at hospital, 3 at health centres and 1 at CHPS), 2 public health nurses, 17 community health nurses, 1 pharmacist, 1 nurse anaesthetist and 95 trained TBAs in the district. The WIFA for 2007 for the district is estimated at 12,220 and the expected pregnancies are 2037. The skilled attendant to client ratio is thus 1: 157. The under-5 mortality ratio for the district is 1.8 per 1000 (annual report for the district, 2007). In every community, there are community health volunteers (i.e community-based surveillance volunteers, community-based agents in IMCI and mother-to-mother support groups) and these could be used as agents for social mobilisation and health promotion activities. The various health facilities are linked by GHS regional radio –telephone system to aid communication between the health centres and the hospital especially during emergency referrals.

### 3.3 Variables

- Age Indications for referral
- Parity Supportive mechanisms
- Availability of essential obstetric care Outcomes of referred patients
- Availability of referral guidelines
- Staff Compliance with Ghana Health service referral guidelines

**TABLE 3.1: Variable –Indicator Method Matrix**

No.	Variable	Indicator	Method
1	Compliance with referral guidelines	<ul style="list-style-type: none"> <li>• Use of standard referral forms</li> <li>• Availability of referral register at facility</li> <li>• Feedback</li> </ul>	<ul style="list-style-type: none"> <li>• Review of medical records</li> <li>• Monitoring guide</li> </ul>
2	Availability of essential obstetric care	<ul style="list-style-type: none"> <li>• Number of health centres with basic essential obstetric care services</li> <li>• Comprehensive essential obstetric care services in hospitals</li> </ul>	<ul style="list-style-type: none"> <li>• Questionnaire</li> <li>• Monitoring guide</li> </ul>
3	Outcomes of referred patients	<ul style="list-style-type: none"> <li>• Still birth</li> <li>• Maternal deaths</li> </ul>	Review of medical records
4	Case fatality	Proportion of women referred who died from maternal complications	Review of medical records
5	Availability of referral guidelines	Referral guidelines in the health facility	Monitoring guide
6	Supportive mechanisms	Transport, communication, logistics	Interview guide, Review of administrative records

### **3.4 Study Population**

The study population involved all the records of patients with maternal complications who were referred from the health centres to the district hospital between January 01, 2007 –April 30, 2008.

All five health centres, one CHPS zone (Sakai) and the district hospital which provide maternity services were purposively chosen for the study. Gwollu health centre which is in Sissala West district but serves as a major catchment area for the Sissala East district hospital was included in the study.

### **3.5 Sampling**

There was no sampling because all the health facilities were included in the study and all the records of patients who were referred between January 2007 and April 2008 were reviewed.

### **3.6 Data Collection Techniques/Methods**

Both quantitative and qualitative methods were used to collect the data.

At each health centre, the names and indications of all maternal complications referred to the Sissala East district hospital within the study period were compiled. Each facility was also assessed for the availability of Essential Obstetric Care (EOC) services using a structured questionnaire. The patients' records were retrieved and reviewed at the hospital to obtain data on the time of arrival, management and their outcomes. The hospital was also assessed for the

availability of comprehensive EOC services using a questionnaire. All the health facilities used for the study were assessed for compliance to the Ghana Health Service referral policies and guidelines. At each health facility a checklist was used to check for the availability and use of standard referral forms, the availability of referral register and whether the Ghana Health service referral policies and guidelines were available. The in-charges of all the maternity units at the health centres and hospital during the time of the study were interviewed on supportive mechanisms concerning the referral system in the district.

### **3.7 Tools**

The Ghana Health Service referral policies and guidelines, the National reproductive health service protocols, Tools for monitoring the effectiveness of district maternity referral systems (Murray et al 2001) and WHO guidelines on assessing EOC services were used as standard tools to develop a tool-mix for the data collection.

The sources of data include; antenatal and delivery care registers, referral register, admission and discharge book, nurse's daily report book, patient folders and monthly returns of data on delivery to the District Health Administration (DHA) by the subdistricts.

### **3.8 Quality Control**

The data was collected by the principal investigator.

The data was cross-checked for completeness and accuracy to ensure quality.

### **3.9 Data processing and analysis**

Data collected was processed and analysed using Microsoft Office Excel 2007 version. Spread sheets were used to create tables and graphs. Content analysis was done for data collected by in-depth interview.

### **3.10 Ethical Considerations**

Ethical clearance was sought from the ethical committee of the Ghana Health Service. Permission was given by the Sissala research committee, the District Health Administration and the District Assembly. A consent form was signed by all the health providers who were interviewed. They were assured that their names will not be associated with the findings of the study and whatever information they gave would be treated as private and confidential. All patients' medical records were handled with confidentiality.

The findings of the study were disseminated to the staff and stakeholders in the district before the researcher left the field.

### **3.11 Pilot Study**

The tool was pretested in Bawiesebelle clinic in the Sissala East District which has similar characteristics as the sites used for the study. Modifications were then made before the tool was used for the study.

### 3.12 Limitations

The study was descriptive with no tests of association. It was limited to seven health facilities and not all health facilities. Case reviews could not be done because of limited time and poor record keeping.



## CHAPTER FOUR

### 4.0 RESULTS

#### 4.1.1 Description of Population

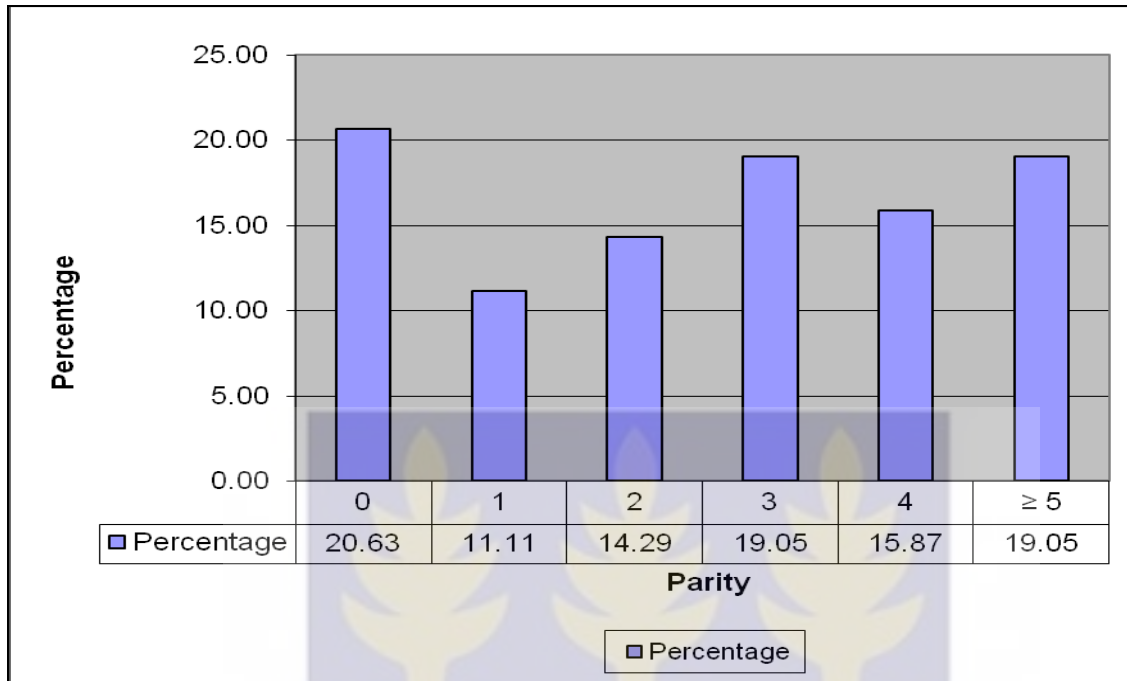
A total of 72 women with pregnancy-related conditions were referred from the six health centres to the SED district hospital between January 2007 and April 2008. Table 4.1 below, shows the age characteristics of maternal referrals. About eighty-five percent (84.72%) of the complications referred were within the age group 20-35 years. The lowest proportion of referrals was among women of parity 1 as shown in fig. 4.1 and appendix 1. The median time for a patient to be referred from health centre and start receiving treatment at the hospital was determined to be 4hours 10 minutes.

**Table 4.1**

**Age characteristics of patients with maternal complications referred from Health Centres to SED Hospital (Jan, 2007- April 2008)**

Age (yrs)	Frequency	Percentage
< 20	6	8.33
20 - 35	61	84.72
35	5	6.94
<b>Total</b>	<b>72</b>	<b>100.00</b>

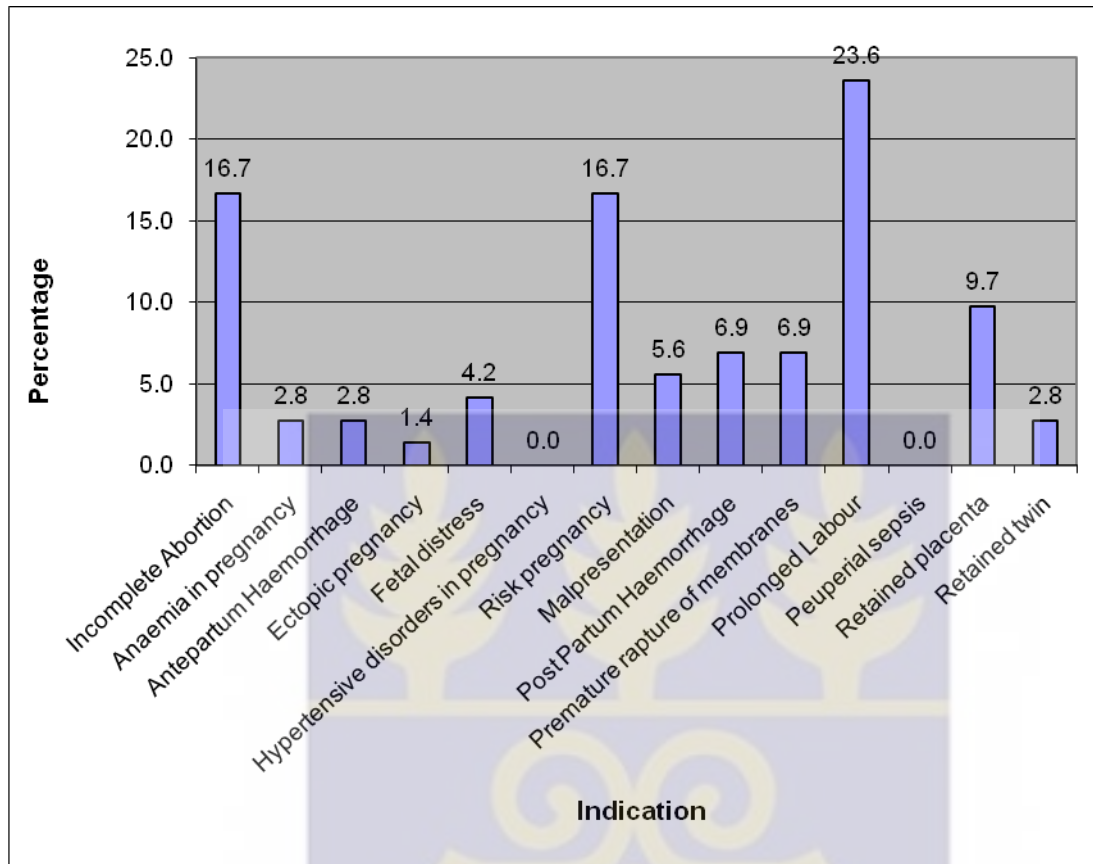
**Fig.4.1: Distribution of parity of referred maternal cases in the SED (Jan. 2007- April 2008)**



#### 4.1.2 Indications for maternal referrals

The study determined the indications for maternal referrals from the health centres to the district hospital. Figure 4.2 and appendix 2 summarise the indications for referrals. The data was also analysed for the distribution of twelve (12) patients with incomplete abortion who were referred by health centres. Six (50.0%) of the patients came from Gwollu, Four (33.3%) from Wellembelle and one (8.3%) each from Nabugubelle and Nabulo. No patient was referred from Kulfuo and Kunchogu with incomplete abortion.

**Fig.4. 2: Percent distribution of indications for maternal referrals in SED (Jan. 2007- April 2008) N= 72.**



#### 4.1.3 Delivery outcome of intrapartum referrals

Thirty-three (33) patients were referred during labour from the health centres to the district hospital. Six patients (18.18%) were delivered by caesarean section while 42.42% were spontaneous deliveries. Three patients (9.09%) resulted in maternal deaths. Seven (7) still births were recorded from the intrapartum referrals.

Table 4.4 shows the delivery outcome of these patients.

**Table 4.4: Outcome of maternal cases in labour referred from health centres to SED Hospital(Jan.2007-April ,2008)**

Outcome	Frequency	Percentage
Caesarean section	6	18.18
Assisted vaginal delivery	8	24.24
Maternal death	3	9.09
Secondary referral to regional hospital	2	6.06
Spontaneous vaginal delivery	14	42.42
<b>Total</b>	<b>33</b>	<b>100.00</b>

#### **4.1.4 Confidential Report on Maternal deaths at the Sissala East District Hospital (Jan 2007-April 2008).**

There were total of 5 facility-based maternal deaths within the period of study. Four deaths were recorded in 2007 (though the district health annual report, 2007 recorded 3 maternal deaths) out of which 2 were audited. One case was recorded in April 2008 and had not been audited.

The audit report on the first woman indicated she sought medical help very late in labour with uterine rupture. She had taken some herbal preparations and came to the hospital in hypovolaemic shock. She died while laparotomy was being performed on her in theatre.

The second woman also presented to the hospital in a very bad condition. She had taken some herbal preparations and was detained by a TBA for about 48hours before she was referred. She died while being prepared for theatre (Maternal Death Audit report 2007).

#### 4.2.0 Annual intrapartum referral rate in the district.

The intrapartum referral rate is the proportion of pregnant women in labour who were referred from the health centres to the district hospital in a time period. In 2007, there were a total of 226 labour cases in all the health centres and 28 were referred to the district hospital for management. The annual intrapartum referral rate for the district was calculated to be 10.53 %. Table 4.5 indicates the intrapartum referral rate for each sub district.

**Table 4.5 Annual intrapartum referrals by Health centres in SED (Jan.-Dec 2007)**

<b>Health centre</b>	<b>Number of mothers in Labour</b>	<b>Number referred</b>	<b>Rate</b>
Gwollu	147	8	5.44
Kulfuo	17	4	23.53
Kunchogu	19	3	15.79
Nabulo	22	2	9.09
Nabugbelle	5	1	20.00
Wellembelle	56	10	17.86
<b>Total</b>	<b>266</b>	<b>28</b>	<b>10.53</b>

#### 4.3.0 Case fatality rate among complicated cases referred to the district hospital.

The case fatality rate is the proportion of maternal deaths among maternal complications which were referred to the district hospital in the year. It is a measure of the effectiveness of the referral system in the district. A value less than 1% is considered a good indicator of an effective referral system (Murray et al). From table 4.6, forty (40) complications were referred from the health centres to the hospital between January 2007 and April 2008. There were five maternal deaths from these complications. The case fatality rate for maternal referrals was 12.5%, a reflection that the referral system was ineffective in the district.

**Table 4.6 : Summary of complicated maternal conditions referred from health centres to SED Hospital(Jan.2007-April 2008)**

<b>Condition</b>	<b>Frequency</b>	<b>Percentage</b>
Haemorrhage(antepartum or postpartum)	7	17.50
Prolonged labour	17	42.50
Postpartum sepsis	0	0.00
Complications of Abortion	12	30.00
Pre-eclampsia/eclampsia	0	0.00
Ectopic pregnancy	1	2.50
Ruptured uterus	1	2.50
Severe anaemia in pregnancy	2	5.00
<b>Total</b>	<b>40</b>	<b>100</b>

#### **4.4.0 Compliance to the Ghana Health Service referral policies and guidelines by the health facilities in the district.**

The Ghana Health Service referral policies and guidelines (appendix 5) state that;

- A completed standard referral form shall accompany any patient being referred.
- A separate register shall be maintained for monitoring and evaluation of all referred patients.
- At the referral health facility, the completed referral form must be retained in the patient's folder.
- Feedback shall be sent to the referring facility using the standard feedback form.
- The referring facility shall follow up patients that are referred.

Health facilities were assessed whether they complied with these directives. Table 4.7.1 shows the performance of each health centre. Standard referral forms were not available in all the health centres. Referral registers were kept in Gwollu and Wellembelle. Other health centres did not keep referral registers in maternity unit. The register at the outpatient department was being used for only children who were referred to the hospital. Referral forms were found in only 6/42 (14.29%) patient folders that were retrieved from the records department.

Feedback from the hospital to the health centres was not encouraging. Feedback was given in 19.4% of all pregnancy-related conditions that were referred to the hospital between January

2007 and April 2008. Table 4.8 shows the number of patients referred by each health facility and the number of feedback that were received.

**Table 4.7.1 Compliance to GHS referral policies and guidelines by health centres in SED**

<b>Indicator</b>	<b>Remarks for Health Centre</b>					
	Gwollu	Kulfoo	Kunchogu	Nabugbelle	Nabulo	Wellembelle
Availability and use of standard referral form	No	No	No	No	No	No
Availability and use of standard referral register	Yes	No	No	No	No	No
Follow up of referred patients by health centre	Yes	Yes	Yes	Yes	Yes	Yes

**Table 4.7.2 Compliance to GHS referral policies and guidelines by SED Hospital**

<b>Indicator</b>	<b>Remarks</b>
Standard referral forms are kept in patient's folder	No
Availability and use of standard referral register	No
Feedback is given to referring facility for every case	No

**Table 4.8 Number of patients referred and Feedback received by Health centres (Jan 2007-April2008)**

Health Centre	Number referred	Number of Feedback received (%)
Gwollu	29	12 (41.33)
Kulfuo	5	0 (0)
Kunchogu	5	0 (0)
Nabugubelle	4	1 (25)
Nabulo	4	0 (0)
Tumu(Sakai CHPS)	3	1 (33.33)
Wellembelle	22	0 (0)
Total	72	14 (19.44)

#### 4.5.0 Availability of Essential Obstetric Care services in the district.

The health centres and hospital were assessed for the availability of essential obstetric care services. Basic essential obstetric care is the minimum package of services provided at the health centre level without the need of an operating theatre, to manage complications during pregnancy, labour and delivery. The package of services expected includes;

- IV/IM antibiotics administration
- IV/IM anticonvulsants administration
- Manual removal of placenta
- Assisted vaginal delivery

- Removal of retained products

Comprehensive essential obstetric care includes all the basic essential obstetric care services in addition to the availability of caesarean section and safe blood transfusion.

The study revealed that no health centre was an essential obstetric care facility (table 4.9).

The district hospital offered comprehensive obstetric care services. Magnesium sulphate (MgSO<sub>4</sub>) was not available in all the health facilities including the hospital.

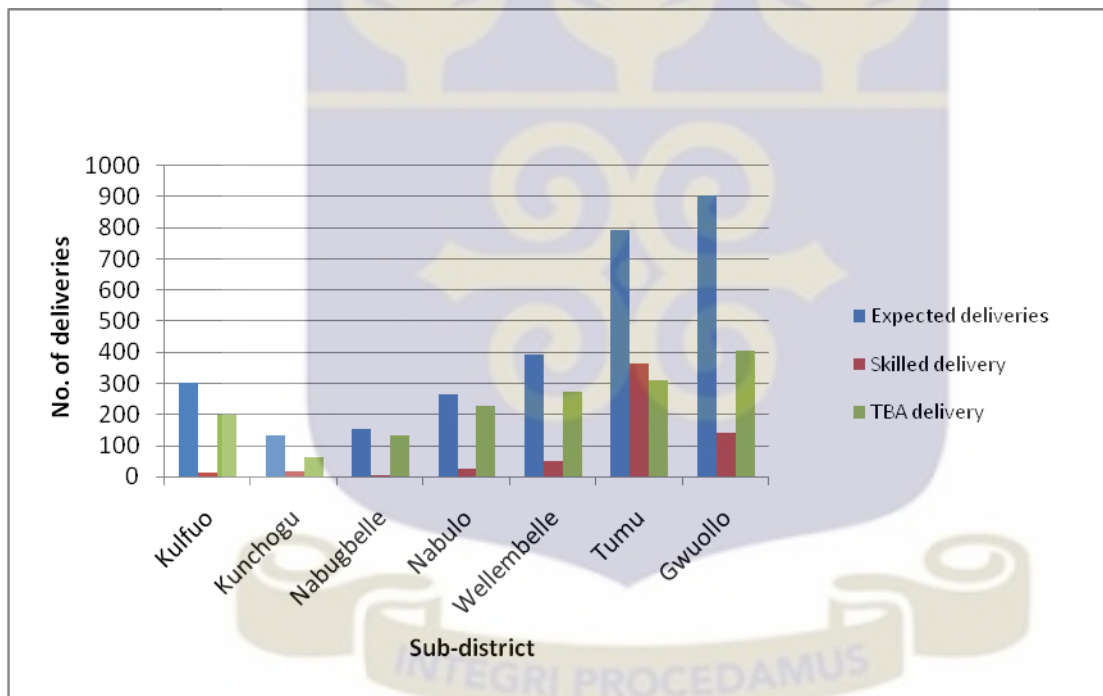
**Table 4.9: Availability of EOC Services in the health facilities in SED (Jan.2007-April, 2008)**

Service	Kulfuo	Kunchogu	Nabugbelle	Nabulo	Wellembelle	Gwolu	SED Hospital
Parenteral antibiotics	√	√	√	√	√	√	√
parenteral oxytocics	√	√	√	√	√	√	√
parenteral sedative	√	√	√	√	√	√	√
Manual removal of placenta	X	X	X	X	X	X	√
Removal of retained product	X	X	X	X	X	X	√
Assisted vaginal delivery	X	X	X	X	X	X	√
Blood transfusion	X	X	X	X	X	X	√
Caesarean section	X	X	X	X	X	X	√
<b>Remarks</b>	<b>Not EOC</b>	<b>Not EOC</b>	<b>Not EOC</b>	<b>Not EOC</b>	<b>Not EOC</b>	<b>Not EOC</b>	<b>CEOC</b>

Skilled delivery is low in the district, as 20.86% of expected deliveries were conducted by skilled attendants in all the sub-districts (appendix 3).

Fig 4.4 shows the number of skilled deliveries as against TBA deliveries in the subdistricts. Tumu sub-district recorded the highest skilled deliveries because of the presence of the district hospital. It is obvious from the graph that TBAs are conducting majority of the deliveries in the district.

**Fig.4.3 Skilled and TBA Deliveries by Subdistricts in SED (Jan2007-April 2008)**



#### 4.6.0 Supportive mechanisms put in place for effective referral of patients in the district.

In-charges of the maternity units were interviewed to obtain information on arrangements for emergency transportation, communication between the health centre and the district hospital, and access to copies of the Ghana Health Service referral policies and guidelines.

#### **4.6.1 Transportation for maternal emergencies**

The district hospital has one ambulance which is used for transporting patients referred from the communities to the hospital. This is not reliable because some communities cannot reach the hospital on phone. A motor tricycle at Kunchogu health centre had broken down. Wellembelle and Gwollu health centres had a pick-up and an ambulance respectively for emergency referrals. However, these vehicles were out of service during the period of study.

The motor-cycle was cited by all health centres as the most common means of transport for patients. Other means of transport identified were commercial vehicles such as market trucks. The donkey drawn carts could also be used where there was no vehicle.

The patient is responsible for the cost of transport. The average cost was 4 gallons of fuel per patient. This converts to about twenty Ghana cedis (GHc 20.00) per patient. The in-charges revealed that some patients failed to accept referral or delayed to reach the hospital because they could not afford the amount.

#### **4.6.2 Communication between hospital and health centres**

There existed a communication gap between all the health centres and the district hospital. Radio-telephones had been installed in all the health centres and the district hospital but the system was non-functional and as such no health centre could communicate with the hospital through the system. The problem had existed since 2005. The problem as explained by the health

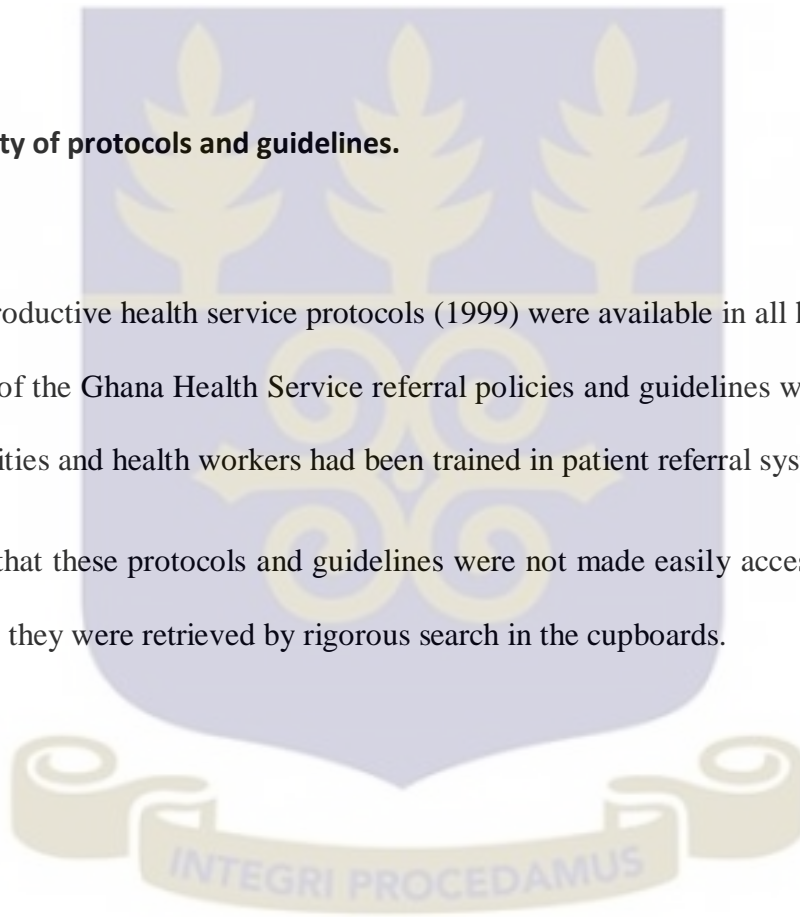
administration was due to lack of funds to procure some spare parts to repair the telephone network.

It was observed however, that, three sub-districts; Gwollu, Kunchogu and Wellembelle were, covered by MTN mobile phone network. The health centres could take advantage of this mobile network to communicate with the hospital in the event of an emergency referral.

#### **4.6.3 Availability of protocols and guidelines.**

The national reproductive health service protocols (1999) were available in all health centres and hospital. Copies of the Ghana Health Service referral policies and guidelines were also available in all health facilities and health workers had been trained in patient referral system.

It was observed that these protocols and guidelines were not made easily accessible to the staff. In some facilities they were retrieved by rigorous search in the cupboards.



## CHAPTER FIVE

### 5.0 DISCUSSION

Little research has been conducted on how to measure the effectiveness of maternity referral systems (Murray et al, 2001). Siddiqi et al, 2001 recommend a systems analysis approach in which “all components essential to the functioning of the referral system are identified, followed by the selection of relevant, valid and objective assessment indicators which are then measured in the course of appropriate surveys”. Murray and Pearson (2006), suggest that district management teams can develop their own set of indicators to monitor available resources, emergency preparedness, local life saving skills, EmOC resources, and availability of urgent communication and transportation, across the public and private sectors.

A tool-mix approach as recommended by Murray et al 2001 was used to evaluate the system for referring pregnancy-related complications from the subdistricts to the Sissala East district hospital. Six health centres, one CHPS zone and the district hospital were used for the study. Four midwives, two health aides and one field technician who were in charge of the maternity units at the time of the study were interviewed on issues concerning maternal referrals. Records of women with pregnancy related complications who were referred from the subdistrict level to the district hospital between January 2007 and April 2008 were reviewed. Clients that were referred from TBAs to the health centres were not documented and as such data was not available for level A referrals.

Seventy-two (72) women with maternal complications were referred from the six health centres and CHPS zone to the district hospital for management. As is known from other studies,

nulliparous and grandmultiparous women are associated with more pregnancy-related complications than other parity groups. From the study, nulliparous women accounted for 20.63% while para 3 and grandmultiparous women accounted for 19.05%.

## 5.1 Indications for maternal referrals

The majority of the patients were referred due to prolonged /obstructed labour (23.6%), incomplete abortion (16.7%), high risk pregnancy (16.7%), and retained placenta (9.7%). Other indications were, post partum haemorrhage (6.9%), premature rupture of membranes (6.9%), malpresentation (5.6%), fetal distress (4.2%), severe anaemia in pregnancy (2.8%), antepartum haemorrhage (APH) (2.8%), Retained twin (2.8%), and ectopic pregnancy (1.4%). In a similar study in Lusaka, Zambia Murray et al (2001) found that complications of abortion (14.6%) and pre-eclampsia (8.9%) were the commonest reason for referring pregnancy related complication to the referral centre. Of great concern is the fact that no patient was referred due to hypertensive disorder in pregnancy or puerperial sepsis. There were no records of maternal death due to eclampsia. Pre-eclampsia/eclampsia and sepsis accounted for 16.0% and 14.4% respectively of all causes of facility-based maternal death in Ghana while in the Upper West region sepsis is the leading cause of maternal death (GHS, 2006. Reproductive and child health unit, annual report). The fact that no patient was referred with either of these does not mean these cases do not exist in the district. Lack of screening of patients by measurement of blood pressure and testing of urine for proteins could explain the reason for low detection of hypertensive disorders in pregnancy in the district. At one health facility visited, it was observed that the community health nurse was carrying out antenatal care services without checking the

blood pressure because the sphygmomanometer was faulty. The low prevalence of puerperal sepsis could imply that health workers and trained TBAs are adhering to infection prevention and control policies.

Comprehensive abortion care is essential to prevent death from unsafe abortion. The data was further analysed according to the distribution by subdistricts. About eighty-three percent (83.3%) of incomplete abortions were referred from Gwollu and Wellembele. Nabulo and Nabugubelle referred one (1) patient each due to incomplete abortion. No patient was referred from Kunchogu and Kulfo even though none of the health centres performed manual vacuum aspiration. The implication is that women in these subdistricts do not have access to comprehensive abortion care or utilize the services at these subdistricts. Gwollu and Wellembele have designated transport at the health facilities and that could explain why majority of the abortion cases were referred from there.

## **5.2 Outcome of Intrapartum Referrals**

The desired goal of the referral system is that all patients referred intrapartum should have safe delivery. The data were analysed for thirty-three (33) women who were referred in labour from the health centres to the district hospital. Forty-two percent (42.42%) of these labour cases delivered normally, 24.42% were delivered by assisted vaginal delivery and 18.18% were by emergency caesarean section. Though majority (42.42%) of the cases delivered normally, it is possible that some of these normal deliveries would have resulted in complications if they had

delivered at the health centre. The study found that 3/33(9.09%) of patients who were referred intrapartum to the hospital resulted in maternal death.

The intrapartum referral rate is one indicator that can be used to monitor the effective referral of women with complications arising in labour to the facility level with required EOC functions.

The annual intrapartum referral rate for 2007 was calculated to be 10.52 %. Murray et al (2001) found 9.7% in a similar study in Lusaka, Zambia. In a setting where clinical procedures such as manual removal of placenta or instrumental delivery are carried out at the health centres, the intrapartum referral rate would be lower than what was found in the Sissala East District. The intrapartum referral rate alone does not mean much and need to be interpreted alongside with the case fatality rate.

### **5.3 Intrapartum Maternal Case Fatality**

The case fatality rate for complicated cases referred to the district hospital between January 2007 and May 2008 was found to be 12.5%. With an effective referral system the case fatality rate should normally be less than 1% (Murray et al 2001). If the value is greater than 1% as is the case in the Sissala East district, it is difficult to know where the problem lies without some special kind of study such as case review. Complication-specific case fatality rates might be calculated for conditions which account for a significant amount of maternal mortality i.e haemorrhage, sepsis, pre-eclampsia/eclampsia and obstructed/prolonged labour. Case reviews could not be done in this study because of limited time and poor record system. Thirty out of seventy-two (30/72) patient folders could not be retrieved.

The use of herbal drugs by women during labour to facilitate contractions is a factor that aggravates maternal mortality and morbidity. Women who use these herbs present at the health facility late with complications such as uterine rupture or fetal distress.

#### **5.4 Essential Obstetric Care Services**

Current Safe Motherhood strategies emphasise early identification of obstetric complications and local provision of appropriate medical and surgical care to respond to these complications.

All the health facilities were assessed whether they offered EOC services based on WHO criteria for assessment. No health centre was found to offer basic essential obstetric care. The District hospital however offers comprehensive EOC services. All the midwives interviewed had been trained in Safe Motherhood clinical skills but it was observed that some did not practice these skills at the facility level. The lack of MVA apparatus, vacuum extractors and delivery forceps at the health centres could explain why these facilities do not offer essential obstetric care services. Inadequate skilled personnel in the district affect skilled deliveries. Two of the health centres did not have midwives. The few midwives at the other health centres were often called to go for trainings or attend meetings and left the facilities vacant. Community Health nurses who did not have enough obstetric skills conducted deliveries at the health centres in the absence of midwives. Those community health nurses who did not have the skills to conduct deliveries referred the cases to the TBAs. Despite the lack of adequate skills, a delivery conducted by community health nurse is safer than a TBA delivery. The lack of EOC services at the health

centres and low skilled delivery of 20.9% are major setbacks to the achievement of the Millenium Development Goal 5 in the Sissala East District.

## **5.5 Compliance with Ghana Health Service Referral Policies and Guidelines**

Health facilities (with the exception of Gwollu) were not complying with the Ghana health Service policies and guidelines. Standard referral forms and register were not available for use at the facilities. The lack of referral registers at the health facilities makes monitoring and evaluation of the referral system difficult. For example at the district hospital, data on referred patients were retrieved from multiple sources such as nurses report books, delivery, antenatal and admission and discharge books. Because standard referral forms were not available health providers resorted to the use of plain paper as referral forms. This practice does not capture accurate information on clients. Copies of standard referral forms which accompanied patients were not kept in the patient's folders. Feedback from the hospital to the referring facilities was given in only 14/72 (19.4%) referred cases. Feedback does not only assure proper patient care but also provides continuing education to the lower level facility and their staff. Interview with the health centre in-charges and review of records however, indicated that the incharges did well to followup patients that were referred to the district hospital despite lack of feedback.

## **5.6 Supportive Mechanisms to the Referral System**

In this study only 6/72 (8.3%) patients' records had complete information on time of referral and time that patient was received in the maternity ward. The median time for a patient was

determined to be 4 hours and 10 minutes. A condition such as postpartum haemorrhage could result in death within 2 hours (Murray et al 2001).

The study revealed that lack of arrangements for emergency transportation at the community level, communication gap between hospital and the health centres, and poor supply or non-existence of referral forms were affecting the effectiveness of the referral system for pregnant women in the Sissala East district. The lack of organised community transport at the community level and communication gap cause delays for women with complications and result in high maternal mortality and morbidity. Patients and relatives face the problems of arranging for commercial vehicles which are limited and costly. Murray and Pearson 2006 found that the most common reason for women who were referred to refuse care was cost. Unfortunately the free delivery policy in Ghana does not cover patient transportation. There is an urgent need to mobilise and educate the communities to develop plans on emergency referrals. Even the donkey drawn cart could be used to carry a patient early to a point where an ambulance could transport her to the hospital. It was observed that while the communities were facing challenges with emergency transportation, three four-wheel drive cars at the DHA and another one at the hospital which were off road but could be repaired were left to the mercy of the weather. The District health administration could lobby for funds from other development partners like Action Aid and Plan Ghana who work in the district, to repair these vehicles for emergency transport. Radio-telephones which have been installed in all the health centres and hospital were found to be non-functional. No health centre could communicate with the hospital during an emergency. Gwollu, Kunchogu, Wellembelle and Tumu are covered by MTN cellphone network. Health centres in these areas could take advantage of this system to communicate with the hospital during an emergency.

The purpose of the referral policies and guidelines is to provide guidance and standards to improve referral practices and ensure effective, efficient and quality care at all levels of the health services, both public and private. It was however observed at the health facilities that these documents were often not available or where available, were locked up in cupboards and not made easily available for reference by operational staff as and when needed.

The study is limited by the use of patient records instead of following up and observing referred patients. The quality of medical records was judged to be poor by the researcher, with a lot of missing and incomplete information. Despite the limitation, this study has provided evidence that the system for maternal referrals in the Sissala East district was ineffective and has identified certain challenges that need to be addressed. Future research could look at the sociocultural factors that affect maternal referrals and the effect of referral cost on access to essential obstetric care in the Sissala East district.



## **CHAPTER SIX**

### **6.0 CONCLUSION AND RECOMMENDATIONS**

#### **6.1 Conclusion**

An effective referral system is particularly crucial to patients living in rural areas where vast distances and bad road network, make access to district hospitals an expensive and time-consuming challenge.

The referral system for pregnancy-related complications was found to be ineffective in the Sissala East district. A total of 72 patients with pregnancy-related complications were referred from the subdistricts to the district hospital. Apart from the district hospital, none of the facilities in the study had the capacity to provide EOC. The major reasons for referral included prolonged labour (23.6%), incomplete abortion (16.7%) and risk pregnancy (16.7%). The maternal case fatality rate among referred patients was 12.82%. Feedback was given in only 19.4% (14/72) patients referred to the district hospital. Lack of emergency community ambulance and communication, inadequate skilled attendants and weak health information system for patient referrals were identified as challenges to the referral system in the district. The strength of the referral system however lies in the fact that the Ghana Health service referral policies and guidelines, and the National Reproductive Health Service Protocols were available and staff trained in their use in all the health facilities visited.

## 6.2 Recommendations

### Regional Health Administration

- More midwives with adequate training in Essential Obstetric Care should be posted to the Sissala East District.
- The Regional Health Administration should negotiate with health partners such as JICA, UNICEF and UNFPA to support the district in the areas of transport and the repair of broken-down radio-telephones at the health centres and hospital.

### District Health Administration

- There is the need to strengthen the health information system for patient referrals in the district. Patient records should be properly documented and stored with a good filing system. The DHA should ensure regular supply of referral forms and referral registers to the health facilities. Periodic monitoring and evaluation of the referral system should be done by the DHA. All the health facilities including the hospital should submit monthly reports on referrals to the DHA for analysis.
- It is also recommended that community health nurses who are newly posted to the district should be attached to the district hospital for three (3) months to gain skills in conducting normal deliveries and management of obstetric emergencies including early referral.

### **District Assembly**

- The district assembly should develop an incentive package to attract health professional's especially midwives and medical officers to the district. One strategy is to support students in the training institutions and sign bond with them to serve in the district for atleast three years after school.

### **District Hospital**

- Feedback on referred patients should be given to the referring facilities indicating final diagnosis, management and the need for follow up. The hospital management and the in-charges of the sub-districts could meet to discuss a feasible way of sending the feedback letters.
- The medical officer and midwives at the hospital should offer regular outreach services to the health centres aimed at building capacity on EOC at the sub-district level.

### **Health Centres**

- In-Charges at the health centres should make all policy documents available for use by other health workers.

- Health centres that are covered by the MTN mobile network (Gwollu, Kunchogu and Wellembelle) should procure mobile phones with their internally generated funds to aid in communication with the district hospital during emergencies.

### **District Health Insurance Scheme**

- Management of the Insurance Scheme should include cost of emergency referral in the benefit package for clients so as to facilitate acceptance of referrals and minimize delays.

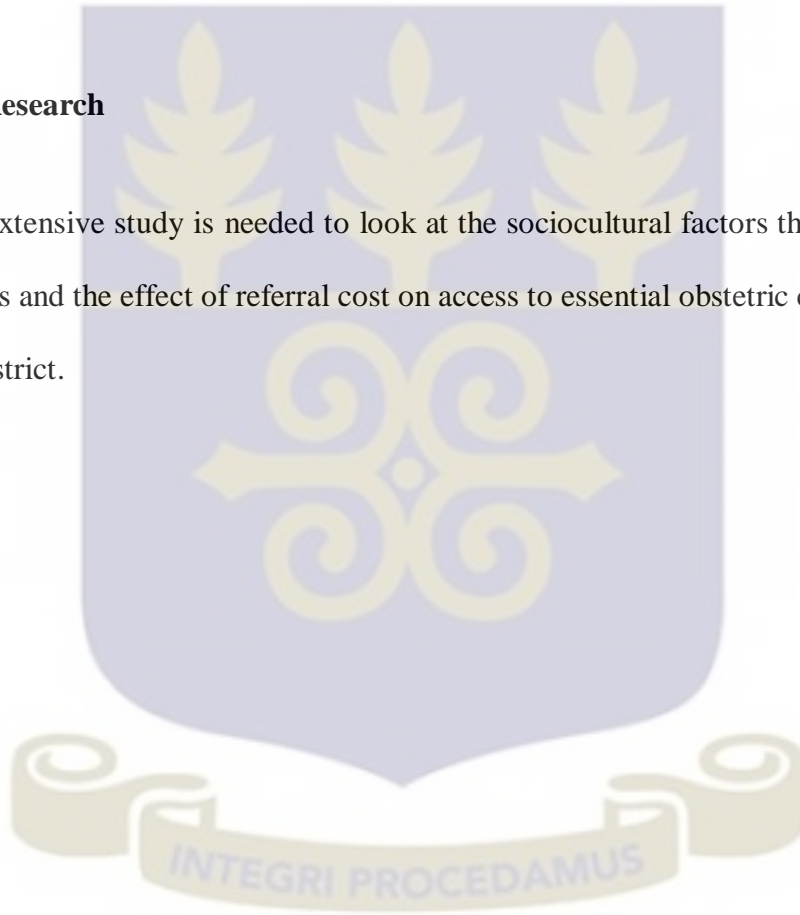
### **Communities**

- Community Health Officers and NGOs should mobilise and educate the communities on emergency community transport system. Members could form associations and take up income generating activities like community farms to support in emergency referrals. This can be achieved by working through community-based volunteers such as traditional birth attendants, community-based surveillance volunteers and mother –to –mother support groups who are already present in the communities.

- The use of local herbs by women to facilitate labour should be discouraged. Community Health officers should educate women on the complications caused by the herbs such as uterine rupture.

### **Future Research**

- A more extensive study is needed to look at the sociocultural factors that affect maternal referrals and the effect of referral cost on access to essential obstetric care in the Sissala East district.



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## APPENDICES

### APPENDIX 1

Table 4.2 **Parity characteristics of referred maternal cases from Health centres to SED Hospital (January 2007-April 2008)**

Parity	Frequency	Percentage
0	13	20.63
1	7	11.11
2	9	14.29
3	12	19.05
4	10	15.87
≥ 5	12	19.05
<b>Total</b>	<b>63</b>	<b>100.00</b>



## APPENDIX 2

**Table 4.3**      **Indications for maternal referrals from Health Centres to SED hospital from Jan. 2007- April 2008**

<b>No.</b>	<b>Indication</b>	<b>Frequency</b>	<b>Percentage</b>
1	Incomplete Abortion	12	16.7
2	Anaemia in pregnancy	2	2.8
3	Antepartum Haemorrhage	2	2.8
4	Ectopic pregnancy	1	1.4
5	Fetal distress	3	4.2
6	Hypertensive disorders in pregnancy	0	0.0
7	Risk pregnancy	12	16.7
8	Malpresentation	4	5.6
9	Post Partum Haemorrhage	5	6.9
10	Premature rapture of membranes	5	6.9
11	Prolonged Labour	17	23.6
12	Peuperial sepsis	0	0.0
13	Retained placenta	7	9.7
14	Retained twin	2	2.8
	<b>Total</b>	<b>72</b>	<b>100.00</b>



## APPENDIX 3

**Table 4.10 Delivery coverage in the various sub-districts in SED(Jan-Dec 2007)**

Sub-district	Indicator		
	Expected deliveries	Skilled delivery	TBA delivery
Kulfuo	301	14	200
Kunchogu	134	17	61
Nabugbelle	153	4	131
Nabulo	263	25	226
Wellembelle	393	50	271
Tumu	792	362	311
Gwuollo	907	142	406
<b>Total</b>	<b>2943</b>	<b>614</b>	<b>1606</b>

## APPENDIX 4

**Table 4.11 Distribution of staff in health facilities (May 2008)**

Health facility	No. of midwives	No. of community Health nurses
Gwollu	3	3
Nabugubelle	0	2
Nabullo	1	1
Kunchogu	1	1
Kulfuo	0	1
Sakai	0	2
Wellembelle	1	1
Hospital	8	0
<b>Total</b>	<b>14</b>	<b>11</b>

## **APPENDIX 5 GHANA HEALTH SERVICE REFERRAL POLICIES AND GUIDELINES**

**PURPOSE:** The purpose of these policies and guidelines is to provide guidance and standards to improve referral practices and ensure quality care at all levels of health services, both public and private.

### **A. GENERAL CONDUCT AND BEHAVIOUR OF STAFF**

1. Health workers and other personnel are expected to maintain proper decorum (good professional and interpersonal behaviour) in their relationship with patients/clients and among themselves at all times.
2. Coordination and teamwork among all health providers shall serve as a common approach to attain the overall goals and objectives of the service.

### **B. ORGANISATION OF SERVICES**

1. A two-way referral system shall be implemented in all facilities.
2. These referral policies and guidelines shall be made available in all units/departments of all health facilities.
3. The Regional Health Directorate shall prepare, annually update and make available to all health facilities, a directory of facilities, service providers by facility and services by facility within the region.
4. All employees in Hospitals, health centres, polyclinics and CHPS zones shall be given proper orientation and training in the operationalisation of the comprehensive referral system.
5. A duty roster of practitioners and nurses shall be displayed at the OPD and emergency unit/department.
6. Patients shall be referred to facilities capable of handling the cases, using the directory of health providers and services.
7. A separate register shall be maintained for monitoring and evaluation of all referred patients both at the emergency unit/department and OPD in all health facilities.
8. A completed standard referral form shall accompany any patient being referred.

9. The standard referral form shall be filled, and a copy kept in the referring facility.
10. At the receiving (referral) health facility, the completed referral form must be retained in the patient's folder.
11. Feedback shall be sent to the referring facility using the standard feedback form.
12. The attending practitioner/clinician at receiving (referral) facility, shall, where appropriate, refer patients back to the referring facility for follow-up or continuation of management.
13. Essential medicines and supplies shall be available at any given time in all levels of health facilities.
14. All practitioners/clinicians shall adhere to clinical guidelines and protocols on patient care management.

### **C. COMMUNICATION AND TRANSPORTATION**

1. Where possible, referrals must have prior communication in any form (telephone, radiophone, email etc) to the receiving facility providing the necessary patient information.
2. Patients may be conveyed to and from health facilities using a service ambulance or whatever appropriate means of transportation that is available.
3. An agreed standard cost/kilometer shall be charged for the use of the facility ambulance.
4. The client shall bear the cost of transportation (fuel only).
5. For acute emergencies requiring referrals, ambulance service must be rendered even if the client can not pay for the service.



Annex 1. Standard Referral Form – Blank

Serial No .....

**REFERRAL FORM FOR HEALTH INSTITUTIONS**

**A**

1. Name of Referring facility:..... 2. District .....
3. Date & Time of Referral:.....
4. Date & Time of Departure (if applicable) .....
5. Name of receiving Health Institution:.....

**B**

6. Name of Patient:.....
7. Age: ..... 8. Sex: M / F 9. Marital Status:..... 10 Occupation of Patient ..... 11. Insured : Yes ( NHIS No.:.....) / No
13. Address (Community & Landlord's Name) :.....

**C**

14. History of condition:.....

**D**

15. Examination findings – physical examination (inspection, palpation, etc.) .....
16. Temperature:..... 17. B/P:..... 18. Pulse:.....  
Others:.....

**E**

19. Investigation:.....

**F**

20. Diagnosis/Provisional Diagnosis:.....

**G**

21. Management / Treatment given:.....

**H**

23. Purpose of referral:.....

.....  
24. Name & Rank of Officer Referring ..... Signature ..... Date .....

Serial No. ....

Your Serial No.;.....

REFERRAL FEEDBACK FORM FOR HEALTH INSTITUTIONS IN UWR

1. Name of Institution:.....
2. Name of Referring facility (Feedback to):.....
3. Name of Patient:.....
4. Age:..... 5. Sex: M / F 6. Insured: Yes (NHIS No.:.....)/ No.
7. Date & Time of Arrival of Referral:.....
8. Date & Time of Discharge:.....
9. Findings:.....  
.....
10. Tentative Diagnosis  
.....
11. Treatment given:.....  
.....
12. Recommended follow up management:.....  
.....
13. Name & Rank of Officer:.....

Signature:..... Date:.....

APPENDIX 7

**APPENDIX 8 CONSENT FORM FOR MATERNITY UNIT INCHARGES**

Iam Sebastian Ngmenenso Sandaare, a student of the School of Public Health (SPH), University of Ghana, Legon and Iam conducting a research on the referral system for women with maternal complications in the Sissala East district. Your facility is one of the health facilities to be used for the study. I will take about thirty minutes of your time to interview you on issues concerning how you refer patients with maternal complications from your facility to the district hospital for health care and how you follow up these patients. You will also be interviewed on the challenges you face with referring patients and how you think these challenges can be adressed.

The study is not intended to find fault with you. Rather, it is to identify the gaps with the referral sytem in the district and to give recommendations for adressing these gaps. Your name will not be associated with any findings of the study and whatever you say will be held private. Patient information will also be handled confidential. The results and recommendations will be discussed with you after the study.

You can opt not to be part of this study or answer any question that you are not comfortable with. If you agree to be interviewed please sign/thumbprint below.

Participant sign/thumbprint..... Date.....

Researcher sign..... Date.....

Researcher Address: University of Ghana

School of Public Health, Legon

Accra

Telephone number: 0243672634

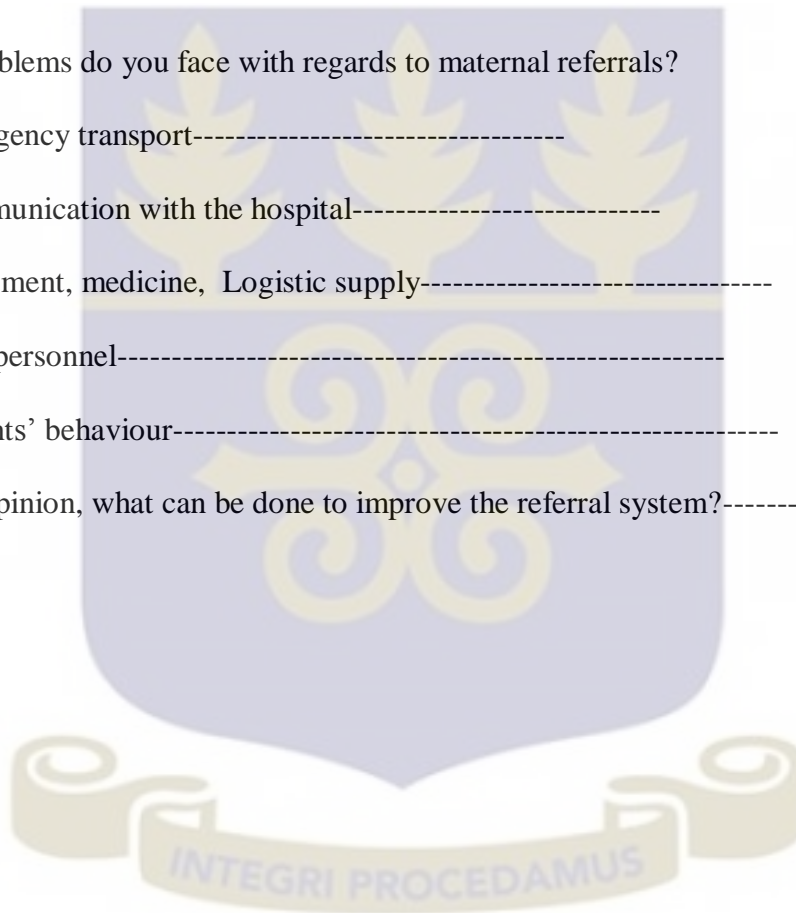
**APPENDIX 9**

**IN-DEPTH INTERVIEW GUIDE FOR MATERNITY UNIT INCHARGES**

**NAME OF FACILITY----- DATE-----**

**ID-----**

1. What problems do you face with regards to maternal referrals?
  - (a) Emergency transport-----
  - (b) Communication with the hospital-----
  - (c) Equipment, medicine, Logistic supply-----
  - (d) Skill personnel-----
  - (e) Patients' behaviour-----
2. In your opinion, what can be done to improve the referral system?-----



**APPENDIX 10**

**Monitoring Guide for Health Centre**

Date.....

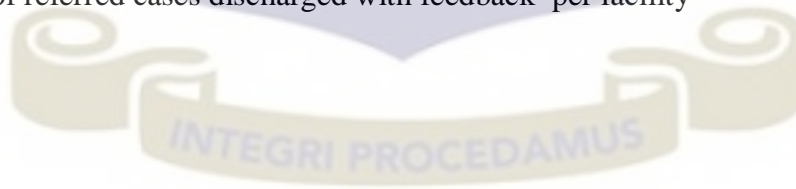
1. Name of the facility -----
2. Number of skilled attendants:      a. Medical officers          b. Midwives      
    c. Nurses with midwifery skills          d. Community health nurses
3. Number of skilled attendants trained in using referral guidelines-----
4. Are there referral guidelines in the facility:      a. Yes          b. No
5. Are there standard referral forms in the facility:      a. Yes          b. No
6. Is there a referral register: (check)      a. Yes          b. No
7. Number of cases referred to the district hospital -----
8. Indications for referral.....
9. Number of feedback received -----
10. Number of cases referred by TBA -----
11. What is the outcome of cases referred from TBAs?
12. Is it an EOC facility?.....(use WHO guide)

**APPENDIX 11**

**Monitoring Guide for the Hospital**

Date.....

1. Number of skilled attendants: a. Medical officers  b. Midwives   
c. Nurses with midwifery skills
2. Number of skilled attendants trained in using referral guideline-----
3. Are there referral policies and guidelines in the facility: (Check) a. Yes  b. No
4. Are there standard referral forms in the facility: a. Yes  b. No
5. Is there a referral register: (check) a. Yes  b. No
6. Number of cases referred by TBA -----
7. Number of referred cases discharged with feedback per facility -----



**APPENDIX 12**

**Review of Patient Records form**

Date of Review.....

**Socio-demographic data**

Name of patient..... Age of patient.....

Marital status..... Religion..... Education-----

Occupation-----

**Referral History**

Date referred to hospital:  Time.....

Date received at the hospital:  Time.....

Facility referred from..... Indication for referral.....

Was a standard referral form used (check in patient's folder)

**Obstetric History**

Parity..... Gestational age.....

Delivery outcome: a. Normal mother/baby  b. Still birth

c. Maternal death  d. Referred to regional hospital

Did hospital give a feedback note?

**APPENDIX 13 (WHO GUIDELINE)**

**ESSENTIAL OBSTETRIC CARE (EOC) FACILITY REVIEW FORM**

Check Yes or No for each of the following		
1. Were the following services performed at least once during last 3 months?	Yes	No
(a) Parental antibiotics		
(b) Parental oxytocics		
(c) Parental sedatives/anticonvulsants		
(d) Manuel removal of placenta		
(e) Removal of retained products		
(f) Assisted vaginal delivery		
(g) Blood transfusion		
(h) Caeserean section		

! If All of 1a-h=Yes, check  
 - COMPREHENSIVE EOC  
 ! If ALL of 1a-f = Yes AND 1g OR  
 1h= No, check  
 - BASIC EOC  
 ! If ANY of 1a – f = No, check  
 - NOT EOC

1 What sources of data were used to complete this form? (eg. Maternity ward register, delivery book general admissions register etc)

.....  
 .....  
 .....

Quality of information

2 In your informed opinion (from talking to staff, seeing the record system etc) how good is the record system?-----

Date of review:.....Reviewed by: .....

**APPENDIX 14**

**INTERVIEW QUESTIONNAIRE FOR SKILLED ATTENDANTS**

NAME OF RESPONDENT: .....

QUESTIONNAIRE ID:..... DATE OF INTERVIEW:.....

NAME OF FACILITY:.....

1. Category of staff

- |                           |                          |                |                          |
|---------------------------|--------------------------|----------------|--------------------------|
| a. Medical Officer        | <input type="checkbox"/> | b. Mid-wife    | <input type="checkbox"/> |
| c. Community Health Nurse | <input type="checkbox"/> | d. Health Aide | <input type="checkbox"/> |
| e. Other (specify)        | <input type="checkbox"/> |                |                          |

2. Have you been trained on the patient referral practices and guidelines?

- a. Yes     b. No     c. don't know

3. If yes, when were you trained? ( please write the year in the box)

--	--	--	--

4. Do you have a copy of the document at your facility?

- a. Yes     b. No     c. don't know

5. How do you communicate with the hospital before referring a patient?

- |                         |                          |                     |                          |
|-------------------------|--------------------------|---------------------|--------------------------|
| a. TP –radio            | <input type="checkbox"/> | b. Mobile phone     | <input type="checkbox"/> |
| b. Verbal communication | <input type="checkbox"/> | c. No communication | <input type="checkbox"/> |

6. How do you transfer patients from the health centre to the hospital?

- a. Ambulance     b. Local transport

7. Which procedure can you effectively perform (Tick all that applies)

- |                                  |                          |                              |                          |
|----------------------------------|--------------------------|------------------------------|--------------------------|
| a. Parenteral antibiotics        | <input type="checkbox"/> | b. Parenteral oxytocics      | <input type="checkbox"/> |
| c. Parenteral anticonvulsants    | <input type="checkbox"/> | d. Manual referral delivery  | <input type="checkbox"/> |
| e. Manual vacuum aspirator (MVA) | <input type="checkbox"/> | f. Assisted vaginal delivery | <input type="checkbox"/> |

