AN ASSESSMENT OF THE QUALITY OF NEONATAL CARE IN HEALTH FACILITIES IN THE HO MUNICIPALITY

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DECLARATION

I, Kokui Elikplim Pomevor, declare that with the exception of references that have been duly cited in the work, this dissertation, which has been supervised according to the guidelines laid down by the University of Ghana, Legon is the result of my personal effort and that it has not been in whole or part presented anywhere else.

…….. ……

Kokui Elikplim Pomevor Dr. Augustine Adomah –Afari

(Student) (Supervisor)

…… ……

Date Date

DEDICATION

I dedicate this work to

God Almighty

Who has always been with me!

My parents

ACKNOWLEDGEMENT

I am, first and foremost, thankful to God almighty for his abundant grace in my life. I also wish to express my sincerest gratitude to my supervisor, Dr. Augustine Adomah-Afari, who in spite of his tight schedule, took time off and painstakingly read through the report. His recommendations and advice helped to shape this project. I am indeed very grateful to him for his invaluable contribution to the successful completion of this project.

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ABSTRACT

This study assessed the quality of neonatal care in health facilities in the Ho Municipality by focusing on availability of adequate and skilled human resources for neonatal care; equipment and care processes; and the perceptions of mothers of newborns on neonatal care in health facilities. Adopting the qualitative method, the study used a purposive sampling to collect data from midwives of 4 health centres as well as staff in the paediatric and maternity wards at the regional and municipal hospitals. Data collected through in- depth interviews, direct observation and analysis of documents from health providers, mothers of newborns and clinical records of sick neonates, were coded and categorised into themes for easy interpretation. The findings of the study were that staff were inadequate and this resulted in non use of the neonatal wards. Besides, most of them were inexperienced and hardly conversant with neonatal care issues until they went through some in-service training. It also found that equipment were either not available or non-functional, a situation which forced staff to improvise and thus put their lives and those of the babies in danger. In addition, lack of protocols resulted in medication errors such as overdose and under dose of fluids and medications. It also exposed lack of ambulance for referral as well as non adherence to aseptic procedures. Moreover, babies slept separately in a cot but were mixed with older children. Finally, the study revealed that mothers' opinions on quality of care were mixed. They were more or less satisfied as they expressed trust in the health workers for providing satisfactory care but were unhappy that some nurses were unable to fix IV lines and for lack of sleeping place for them. The study concluded that there was the need for a change in policy direction and clinical interventions to ensure satisfactory, continuous and consistent care.

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LIST OF ACRONYMS

ANC	Antenatal Care
CHAG	Christian Health Association of Ghana
CHPS	Community-Based Health Planning and Services
DHMT	District Health Management Team
FH	Fetal Heart
FM	Frequency Modulation
FP	Family Planning
HIV	Human Immunodeficiency Virus
IV	Intravenous
KMC	Kangaroo Mother Care
MDG	Millennium Development Goals
MOH	Ministry of Health
MHMT	Municipal Health Management Team
NGO	Non- Governmental Organisation
NHIS	National Health Insurance Scheme
NICU	Neonatal Intensive Care Unit
NMR	Neonatal Mortality Rate
PHC	Primary Health Care
SCNU	Special Care Neonatal Unit
TBA	Traditional Birth Attendant
UNICEF	United Nations Children Fund
USA	United States of America
WHO	World Health Organisation

DEFINITION OF TERMS

Apgar score: Describes the condition of the newborn immediately after birth. It comprises 5 components: heart rate, respiratory effort, muscle tone, reflex irritability, and colour, each of which is given a score of 0, 1, or 2; which is reported at 1 and 5 minutes after birth. The Apgar score is useful for reporting the condition of the newborn and the response to resuscitation.

Early neonatal death: Death of a live born baby within 7 days of birth.

Infant mortality rate: Number of infants below one year of age dying per 1000 live births in a given year.

Late neonatal death: Death of a newborn 8 to 28 days after birth (day 7-27).

Low birth weight: Birth weight of less than 2500g (up to and including 2499g), irrespective of gestational age.

Neonatal jaundice: Is a yellowing of the skin and other tissues of a newborn infant.

Neonatal period: Is the first four weeks after birth.

Neonatal mortality rate: Number of deaths during the first 28 completed days of life per 1000 live births in a given year or period.

Parity: The number of full-term children previously borne by a woman, excluding miscarriages and abortions in early pregnancy but including stillbirths.

Perinatal: Pertaining to the period immediately before and after birth. The perinatal period is defined in diverse ways. Depending on the definition, it starts at the 20th to 28th week of gestation and ends 1 to 4 weeks after birth.

Phototherapy: Is the use of visible light for the treatment of neonatal jaundice.

Preterm birth: A live birth or stillbirth that takes place after at least 20 but before 37 completed weeks of gestational age.

Quality: The degrees to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge.

Skilled birth attendance: Delivery in the presence of a skilled birth attendant, with at least midwifery skills, in an environment that includes availability of equipment, drugs, referral transportation and communication systems.

Stillbirth: The birth of a dead fetus older than 22 completed weeks of gestation or with a birth weight exceeding 500 grams.

Under-five mortality rate: Number of deaths during the first five years of life per 1000 live births in a given year or period.

CHAPTER ONE

INTRODUTION

1.1. **Background to the Study**

It is a fact that some improvements have been registered of late in child survival especially in developed countries, where there is improved quality of healthcare for newborns (Lawn, Cousens, Zupan, & Lancet, 2005). However, in developing countries, there is still no effective healthcare for newborns. Thus, each year, out of the 4 million babies who die within thirty days of birth or the four million who are still-born, 98% is in developing countries (Lawn *et al*., 2005). Mostly, these occur in the home, where there are no skilled health attendants (Yinger & Ransom, 2003; Lawn *et al*., 2005).

Considering the seriousness of this problem of neonatal care, some governments in the developed and some developing countries such as China have included neonatal health in their national health policies. As a result, deaths among newborn babies in China reduced from 24.7 per 1000 in 1996 to 9.3 per 1000 in 2008. This improved figure puts China almost at par with Britain with 3 per 1000, USA with 4 per 1000 and Singapore with 1 per 1000 (Ahman & Zupan, 2007). However, this is not the case in Africa. According to the World Health Organisation's 2006 Report (WHO, 2006), Africa, has the highest risk of about 41 neonatal deaths per 1000 live births with the Sub-Saharan Africa regions of Eastern, Western and Central Africa having between 40 and 46 neonatal deaths per 1000 live births. This is followed by countries of South-Central Asia, which have 40 neonatal

deaths per 1000 live births and Latin America and the Caribbean having 13 per 1000 live births (Bryce & Requejo, 2008).

The Millennium Development Goal 4 (MDG 4) has the objective of reducing child mortality by two-thirds by the year 2015. However, questions have been raised regarding the achievement of this goal. Some researchers argue that it cannot be met unless neonatal mortality is halved (Yinger & Ransom, 2003). This indicator is important as United Nations Children's Fund (UNICEF) considers child mortality rate to be the basic measure of a country's advancement (Lawn *et al*., 2005).

Even though the neonatal mortality rate (NMR) in Ghana, reduced from 43 per 1000 live births in 2003 (GSS & Macro, 2004) to 31 per 1000 live births in 2008 (GSS & Macro, 2009) the current rate is still unacceptably high compared to that of Latin America and the Caribbean (Bryce & Requejo, 2008). In Ghana, the introduction of the National Health Insurance Scheme (NHIS) and the free maternal care policy (an effort to meet MDGs 4 and 5) coupled with increased awareness occasioned by the introduction of local FM radio stations throughout the country now encourages women to attend antenatal clinics and deliver in hospitals. This is expected to reduce further neonatal deaths in the country. However, it seems other challenges confronting health institutions are eroding the gains resulting from these new policies (MOH, 2011).

While births with a skilled attendant increased by 12 million from 2000 to 2010, quality of care in health facilities has not kept pace (MOH, 2011). Indeed, quality has been

highlighted as the neglected agenda across maternal and neonatal health programmes (Van den Broek & Graham, 2009). Donabedian (1988) explains that quality of care is the application of medical science and technology in a manner that maximises its benefit to health without correspondingly increasing the risk. It is expected that quality of neonatal healthcare would improve if quality of care was adhered to in the health institutions in Ghana.

The assertion is that most researchers in developing countries have focused on home care practices to the neglect of institutional care challenges of delivering quality neonatal care (Neogi, Malhotra, Zodpey, & Mohan, 2012). This situation thus creates the need for more research to be carried out in the area of institutional care delivery in developing countries (Neogi et al., 2012). This is exactly what this research sought to do with particular reference to Ghana, using the Ho Municipality as a case study.

This study thus sought to assess primarily the current state of neonatal care in hospitals and health centres in the Ho Municipality. Subsequently it assessed available human resources for neonatal care and their skills; and also collected views of mothers of newborns in order to evaluate their perceptions of quality neonatal care in the health facilities.

1.2. **Problem Statement**

Available evidence shows that whereas the neonatal mortality rate has improved in high income countries, early neonatal mortality rate (first week of life) has registered little improvement in low-income countries. Each of the major causes of neonatal mortality: prematurity, infection and asphyxia leave many survivors with lifelong disabilities or morbidities (Wall *et al*., 2009). Ghana's attempt to reduce child mortality is seen to be yielding some results. Even though, in the past, most women, failed to access health facilities, now the trend has changed. However, these are considered insufficient (Bryce & Requejo, 2008).

Undoubtedly, the increased pressure on health facilities is affecting quality maternal and neonatal care delivery. The reason is that even where there are facilities, many of these are not well-equipped with the right biomedical equipment and trained staff to meet the challenges. Thus, against available evidence that most neonatal deaths can be prevented even in settings with high neonatal mortality and weak health systems (Knippenberg *et al*., 2005), Ghana's measures to reduce mortality continue to face serious logistical challenges (Addo-Yobo, 2010).

Furthermore, improving the quality of paediatric and, especially, neonatal care is a big challenge in Ghana (MOH, 2011). In the Volta Region, in particular, even though hospital attendance had increased, neonatal mortality rates are still very high as a result of inadequate human resources, equipment and supplies (MHMT, 2011).

1.3. **Significance of the Study**

This study sought to highlight the need for a policy framework for neonatal health care in Ghana. Currently, there is no defined policy framework for neonatal health care as a specialty. Hence, health professionals are usually at a fix as to what to do in their efforts at delivering quality neonatal care. A policy in this regard will be useful for guiding health professionals and the general public. However, no study has taken this into account (Addo-Yobo, 2010). Therefore, this study focused on the issues that would warrant policy consideration.

The study was also relevant in Ghana's context as it sought to arouse the interest of policy makers regarding the need to provide adequate neonatal care facilities in the country. Arguably, Ghana might not be able to meet the targets of the Millennium Development Goal 4, unless there are significant reductions in neonatal mortality (Bryce & Requejo, 2008). To achieve a reduction in neonatal mortality, it will require the provision and use of up-to-date health facilities and equipment. However, these are currently, lacking in most of the public health institutions. It was anticipated that the evidence from this study would prompt policy makers on the need to initiate processes to ensure that required equipment for delivering quality neonatal care were provided.

The study further sought to advance arguments for the institution of neonatal health as a specialty in health training institutions. Comparably, in the developed and some developing countries like China, neonatal health institutions have been established to ensure continuous training of health professionals, especially neonatal nurses to manage

newborns' special needs (Addo-Yobo, 2010). However, in Ghana, specialised neonatal health institutions are non-existent while the human resources for neonatal care are inadequate. This study would certainly arouse the interest of curriculum designers of health training institutions regarding the need to train students with specialty in neonatal health in health training institutions. This could help resolve the human resource gap so as to reduce neonatal mortality and to improve neonatal care.

The researcher's personal experience was another motivating factor that necessitated this study. Having worked as a health professional in Ghana's health sector for over five years, the researcher was much aware of the challenges facing health professionals and the health care system in delivering quality health in general and neonatal health in particular. Thus, the rich experiences gained from practicing were brought to bear on our understanding of the challenges and the way forward towards providing quality neonatal health in Ghana, using the Ho Municipality as a case study. The outcome would certainly contribute to the limited literature on the subject matter.

1.4. **Objectives**

This study sought to assess problems associated with neonatal care delivery in health facilities in Ghana. Specifically, it examined the challenges confronting health professionals in delivering quality neonatal care in the Ho Municipality.

1.4.1. **General Objective**

The study aimed at assessing the quality of care for neonates in health facilities in the Ho Municipality.

1.4.2. **Specific Objectives**

It specifically sought to:

1. Examine the availability of adequate and skilled human resources for neonatal care delivery in the Ho Municipality.

2. Assess the availability of equipment and care process of neonatal care delivery in the Ho Municipality.

3. Explore clients' (mothers of newborns) perspective on the quality of care for neonates in health facilities in the Ho Municipality.

1.5. **Research Questions**

1. Do adequate and skilled human resources exist for neonatal care delivery in the Ho Municipality?

2. Are there available equipment and care processes for neonatal care delivery in the Ho Municipality?

3. How do clients (mothers of newborns) perceive quality of care for neonates in the health facilities in the Ho Municipality?

1.6. **Outline of the Thesis**

This study is organised into six main chapters. Chapter one (1) is the introductory chapter, which presents the background to the study, statement of the problem, the significance of the study, the objectives of the research, research questions and the outline of the thesis.

Chapter two (2) presents relevant literature on availability of skilled human resources for neonatal care, adequacy of equipment and care processes of neonatal care, perceptions of mothers of neonatal care as well as the theoretical and conceptual frameworks of the study.

Chapter three (3) discusses the characteristics of the study area and the detailed research methodology adopted. Chapter four (4) is where the results from the investigation are

analysed and presented. Chapter five (5) presents discussion; where the key findings were related to available literature and theoretical frameworks. The final chapter six (6) of the report presents the summary of results, conclusions and recommendations/ contribution to knowledge.

CHAPTER TWO

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

2.0. **Introduction**

This chapter is composed of two parts. The first part reviews relevant literature on availability of skilled human resources for neonatal care, adequacy of equipment and care processes of neonatal care and perceptions of mothers of neonatal care. The second part is on the theoretical and conceptual frameworks of the study. The literature review touches on all aspects of issues under investigation thus providing a clearer background to the problem studied.

2.1. **Literature Review**

Key elements under the structure have been explained below.

2.1.1. **Human Resources**

It is reported that, like the majority of Sub-Saharan Africa countries, Ghana, and for that matter the Ho Municipality, suffers from a human resource crisis in the health sector (Chen *et al*., 2004; Addo-Yobo, 2010; MHMT, 2011). This is a major obstacle to achieving the health related Millennium Development Goals (MDG) target by 2015. There is a critical shortage of skilled health providers in Ghana, most importantly, in neonatal care. This is in spite of the existence of three medical schools, with paediatrics as a recognised post-graduate specialty. Meanwhile, there are not more than five qualified neonatologists in Ghana. Overall, the few paediatricians and neonatologists are found only in higher level health facilities like Korle-Bu and Komfo Anokye Teaching Hospital (Addo-Yobo, 2010; MOH, 2011).

Newborn care is part of the curriculum and responsibility of midwives, and physicians, who receive initial training in the theory and practice of newborn care. However, the application of this knowledge in practice leaves much to be desired as the training received is basic. There is no supervision of young graduates on neonatal care practices. Above all, there is poor regard for neonates. Even as nurses constitute the largest cadre of health professionals in Ghana, many of them are challenged by neonatal diagnosis and neonatal care (Addo-Yobo, 2010).

2.1.2. **Availability of Personnel and Skills in Neonatal Care**

It has been suggested that availability of adequate number of doctors and nurses is vital for providing care. Besides numbers, the skills and motivation level of personnel are prime pre-requisites. It has been estimated that the odds of mortality of newborns admitted in Special Care Neonatal Units (SCNUs) increase significantly when one nurse cares for more than 1.7 newborns (Neogi *et al*., 2011).

Paediatric staff ratios are inversely related to mortality rates (Neogi *et al*., 2011). While nurses are critical, availability of doctors is important, especially for units providing higher levels of sophisticated care. These include: ventilation and care of the premature, especially those with very low birth weight (Neogi *et al*., 2011). Studies that assessed some hospitals and other health facilities found that staff numbers were inadequate for the provision of neonatal care. Additionally, where there were personnel, they were not available for 24/7 hours of care. It is anticipated that investments directed towards recruiting, enhancing the competencies and retaining the nursing personnel to work with

high motivation levels in neonatal units will go a long way in improving neonatal outcomes (Opondo *et al*., 2009; Neogi *et al*., 2011).

2.1.3. **Equipment and Supplies (Availability of Technologies)**

Obviously, availability of adequate number of functional equipment is crucial to the functioning of a neonatal unit and it is directly linked to quality of care. Although there may be skilled service providers, they may not be able to provide quality maternal and neonatal health services without essential equipment and supplies (Opondo *et al*., 2009; Neogi *et al*., 2011). Evidence available indicates that shortage of basic equipment and supplies such as resuscitation equipment, oxygen delivery systems and feeding tubes at a Special Care Baby Unit (SCBU) in Uganda and Afghanistan contributed to poor perinatal care (Neogi *et al*., 2011).

Another study found that district hospitals in Kenya, also lacked between 30 to 83% of items considered crucial for the provision of care to the sick neonate (English *et al*., 2004; Opondo *et al*., 2009). The evidence shows that apart from lack of adequate essential equipment, availability of functional equipment was a problem. For instance, it was found that none of the neonatal units in a hospital in India, had an adequate number of functional baby warmers and only 50% of them had an adequate number of phototherapy units (Neogi *et al*., 2011). This is known to have grave negative consequences on neonatal care.

It has been suggested that having the essential equipment and supplies for neonatal resuscitation can prevent some neonatal deaths due to birth asphyxia (inadequate oxygen) which is a major cause of death in newborns. It is also suggested, for instance, that heating devices such as radiant warmers and incubators are necessary for preventing hypothermia in newborns (particularly low-birth weight babies) [(Kumar, Shearer, Kumar, & Darmstadt, 2009)]. Although bag and mask equipment for the resuscitation of newborns may be available at some health facilities, their use may be a problem (Murila, Obimbo, & Musoke, 2012). The reality is that many health professionals do neither know how to hold the bag and mask equipment nor give breaths during resuscitation. Therefore, some deaths could be attributed to improper use of resuscitation equipment by health professionals (Kumar *et al*., 2009; Addo-Yobo, 2010).

2.2. **Care Processes**

This part also explains the indicators under care processes.

2.2.1. **Aseptic techniques**

It is suggested that aseptic techniques undertaken by staff and visitors to the neonatal wards are an important way of reducing the incidence of hospital acquired infections in the wards. This is because the immune system of neonates is not well developed and it is, therefore, vulnerable to all kinds of infection from staff and visitors to the wards (Cohen, Saiman, Cimiotti, & Larson, 2003). These aseptic techniques include: hand washing, changing of foot wears, wearing of facemasks, aprons and caps within the neonatal unit of the health facility. Availability of these basic items for asepsis in neonatal wards will go a long way to improve quality of care given to neonates in health facilities.

In addition, within the prematurity wards, there should be minimal handling of the premature baby. Therefore, numbers of staff and visitors that are allowed into the wards should be minimal and additional aseptic measures should be taken to reduce further the incidence of cross infections from staff.

Hand washing is another essential practice in health facilities that advances quality of care. Moreover, staff ability to wash their hands before and after examination of each patient will go a long way to reduce hospital acquired infections not only between patients of the same ward, but also between health providers (Silvestri *et al*., 2005).

2.2.2. **Number of Babies in a Cot/ Incubator**

Many studies have found that one neonate to a cot promotes faster recovery, reduces hospital stay and thus reduces cost to the patient and above all advances good quality care (Collins, 2008). Therefore, one important aspect of reducing cross infection is the number of babies in a cot or incubator. The provision of a separate cot or incubator per neonate especially, premature babies, may help improve the quality of care for the neonates. Whereas, in the developed countries, each neonate on admission has its own cot, thermometer and oxygen per cot or incubator, the same cannot be said of neonates in developing countries, where these resources are scarce. Hence, patients and, for that matter, neonates lie four on a bed or cot and share these basic equipment. This encourages cross infection among patients, prolonging hospital stay and increasing cost to patients and their families.

2.2.3. **Appropriateness of Treatment**

Children are more often than not demanding set of patients as regards the safe use of medicines, and even more so neonates, who are most vulnerable as a result of their extremely weak physiological makeup (Pallás, De-la-Cruz, Del-Moral, Lora, & Malalana, 2008). Undesirable drug events such as adverse drug reactions and medication errors may be up to three times more common in children than in adults (Wong, Wong, & Cranswick, 2009). Medication errors can lead to increased incidence of morbidity and mortality and frequently involve under dose or overdose.

According to the literature and evidence from the researcher's own experience in Child Health, medicine dosages in paediatrics, and particularly in neonates are usually calculated individually based on the patient's age, weight, degree of prematurity in neonates, body surface area, and the clinical situation. This leads to increased opportunities for dosing errors (Lansdowne & Bevan, 2012). According to Wong *et al*. (2009) most potentially reported adverse drug events are dosing errors and errors involving intravenous drug administration.

The BNF (British National Formulary) provides valuable information to pharmacist and other health professionals to reduce the possibility of prescribing and dispensing inaccuracies. Nevertheless, there are indications that some healthcare professionals have difficulty calculating the right doses or are not familiar with the drugs and dosing in neonates and children. For that reason, health professionals should not prescribe if they are not familiar with the dosing regimen of neonates and children (Wong *et al*., 2009).

2.3. **Outcome**

This part also explains the indicators under outcome.

2.3.1. **Perceptions of Patients of Care Given**

Issues related to how mothers of newborn babies perceive quality of care should be of paramount importance to health providers. Patient centeredness has been defined to encompass qualities of compassion toward, understanding of, and responsiveness to the needs, values and expressed preferences of the individual patient (Wheatley, Kelley, Peacock, & Delgado, 2008). Patient centeredness is considered as a critical component of overall health care quality. In fact, it is suggested that health care providers establish partnerships among practitioners, patients and their families (when appropriate). This will ensure that decisions taken will seek to respect patients' wishes, needs and preferences and that patients have education and support they need to make decisions and partake in their own care (Wheatley *et al*., 2008; Kumbani, Chirwa, Malata, Odland, & Bjune, 2012).

This is against the evidence that patient centeredness, like many quality indicators, has deteriorated in recent years. This is viewed as a public health problem because patient centeredness is linked with adherence to medical recommendations, reducing misdiagnosis caused by miscommunication and reducing system load on patients as well as system costs caused by over or under-utilisation of services (Wheatley *et al*., 2008).

Even though, in many countries, traditional birth attendants (TBA) are still preferred as they are seen to be more friendly and understanding of the needs of women during

childbirth, they do not have basic equipment for neonatal resuscitation (Titaley, Hunter, Dibley, & Heywood, 2010). It must be noted that regardless of the availability of health services, women's perceptions of care is important in considering quality of care as it influences whether women will or will not use the services (Mxoli, 2007; Wheatley *et al*., 2008; Chowdhury, Hossain, & Halim, 2009).

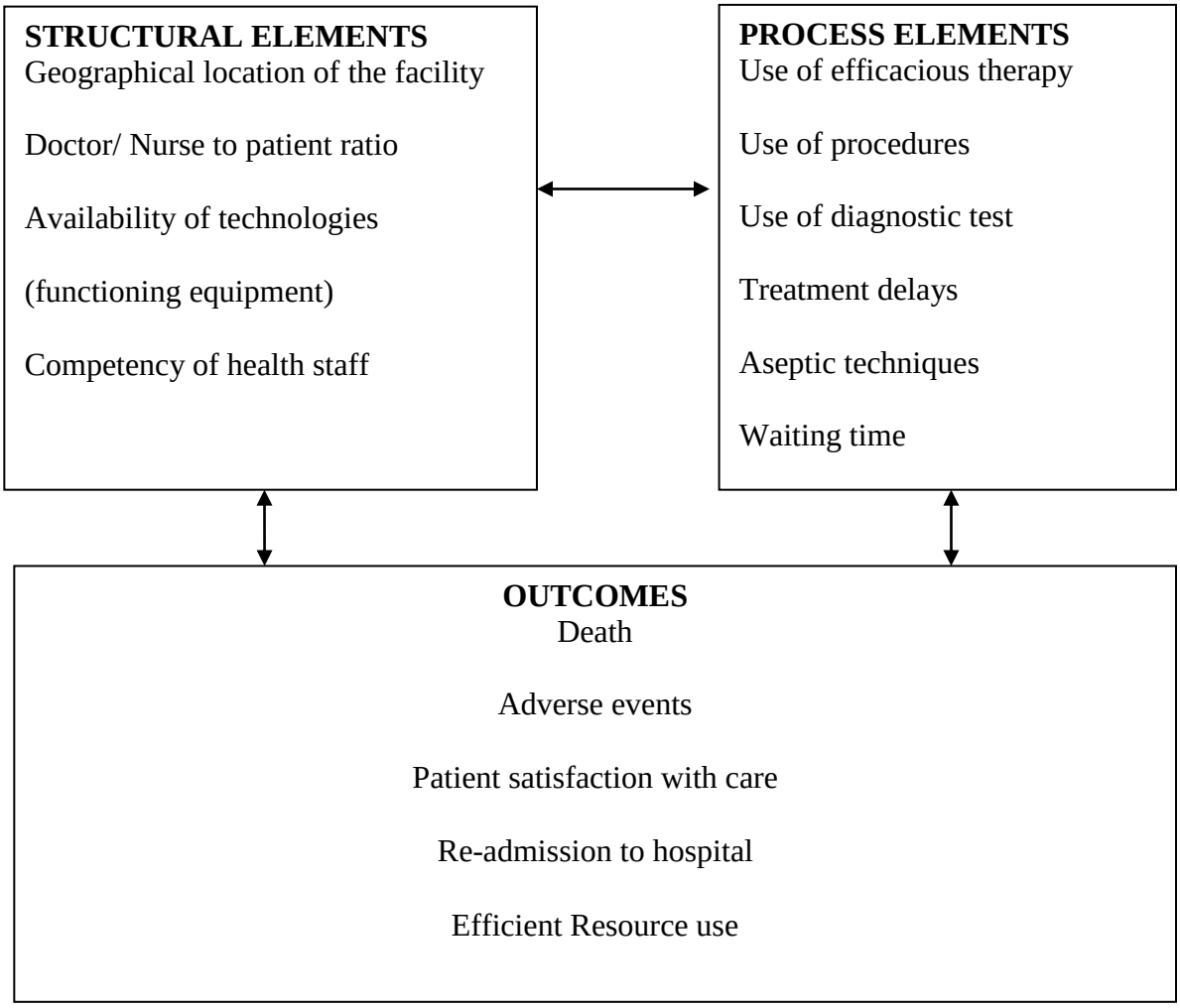
2.3.2. **Information Provided to Patients**

Provision of adequate information to patients in general and mothers of newborn babies, in particular, is cardinal in delivering quality health care. For instance, telling them (patients) about the disease condition, treatment options available, care given, how to take medications, among other things, will be very useful as it will enable them (patients) make informed decisions about their health. However, the current practice is that patients are either not given information at all, or are given little, which makes decision making difficult in matters related to their health (Kumbani *et al*., 2012).

2.4. **Framework for Quality of Care**

This section presents the framework for quality of care. Donabedian (1988) suggests that for quality of care to be assessed there is the need for detailed information about causal linkages among the structure attributes of the settings in which care occurs, the processes of care and the outcomes of care. The reverse arrows in figure 2.1, show that structural elements influence process and outcome elements and vice versa.

Figure 2.1: **Conceptual Framework: Quality of Care**

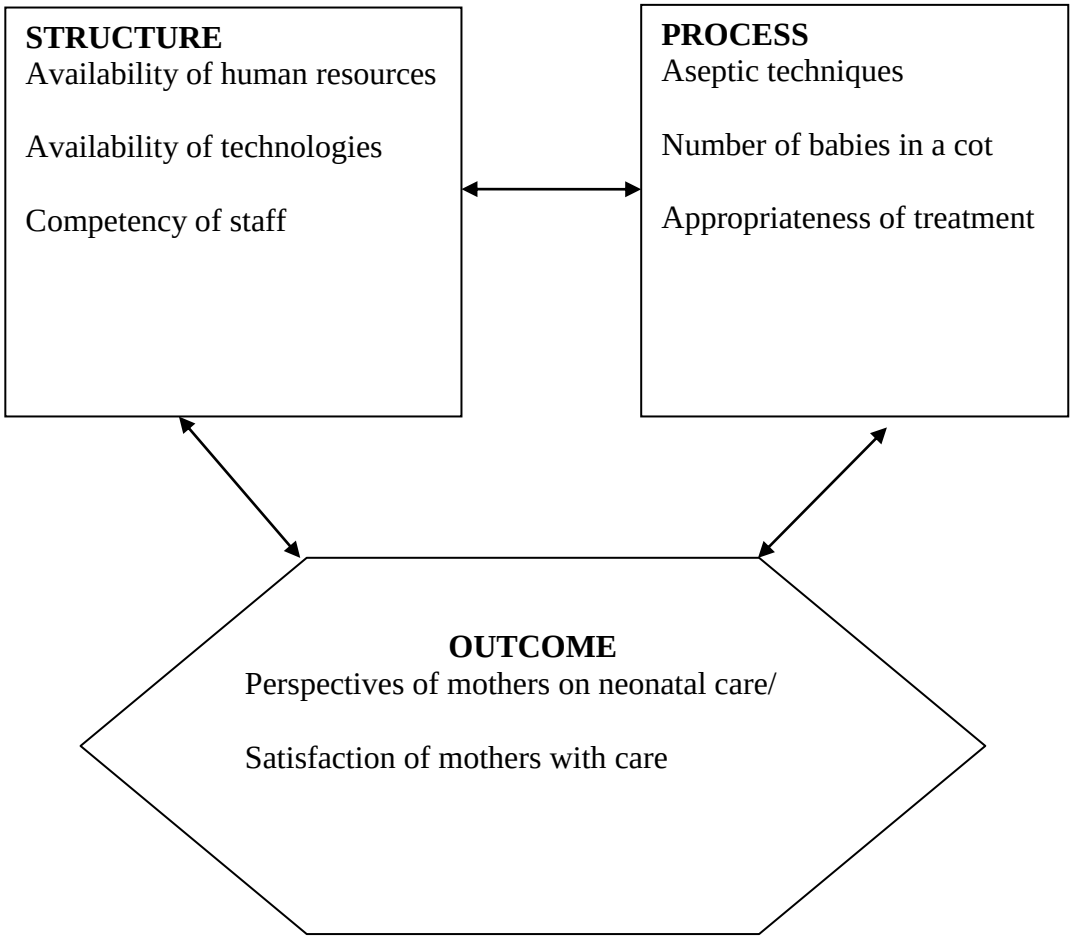


2.4.1. **Conceptual Framework for Quality Neonatal Care**

This section also presents the conceptual framework for quality neonatal care. Based on Donabedian's (1988) framework, the researcher developed the conceptual framework in figure 2.2 below for quality of neonatal care, which is the focus of this study. The reverse arrows in figure 2.2 indicate how the structural elements influence the process and outcome elements and vice versa. For example, availability of human resources influences aseptic techniques; number of babies in a cot is influenced by availability of

technologies; appropriateness of treatment is influenced by availability of technologies and competency of staff.

Figure 2.2: **Conceptual Framework for Quality of Neonatal Care**



2.4.2. **Quality of Care**

The complex nature of quality is widely acknowledged. That is the reason why researchers and analysts have yet to agree on a universal definition of quality of care (Raven, Tolhurst, Tang, & van den Broek, 2011). In the literature, quality is described from the perspective of health care providers, managers and patients. Nevertheless, quality can be considered using different models or conceptual frameworks, which can guide healthcare providers, managers and policymakers to improve health service quality. Different models of quality of care have been described in the literature (Donabedian, 1980; Maxwell, 1992; Ovretveit, 1992; Institute of Medicine, 2001). Three models most commonly used and most clearly defined are: perspective, characteristics, and systems models. These have been explained below.

2.4.2.1. **Perspectives Model**

This model uses the underlying principle that there are different perspectives on quality of care (Ovretveit, 1992). For instance, the following questions can be asked: what does quality of health care mean for the communities and patients that depend on it, the healthcare providers who provide it and the managers and administrators who oversee it (Raven *et al*., 2011)?

2.4.2.1.1. **The Patient**

Here, the idea is to examine whether the health services meet the patients' perceived needs and expectations. It is believed that satisfied patients are more likely to comply with treatment and will continue to use the services (Raven *et al*., 2011).

2.4.2.1.2. **The Healthcare Provider**

From the perspective of healthcare providers, quality is perceived in respect of technical know-how, for example, with reference to medical capacity such as technologies, competency of staff among others. This is usually an area where patients may not be skilled or may be too unwell to assess (Raven *et al*., 2011).

2.4.2.2. **Characteristics Model**

This model sees quality of care as comprising different characteristics such as access to care: which could be geographical, financial or organizational; equity and effectiveness, among others. Maxwell (1992) describes the characteristics of healthcare quality and notes that these can vary in importance depending on the type of healthcare being provided (Raven *et al*., 2011). Donabedian (1988) explains that a process of quality assurance may examine just one of these characteristics or multiple characteristics.

Comprehensive assessments of quality of care follow the classical approach suggested by Donabedian, which encompasses measures of structure, process and outcome. Within this approach, quality of care is related to different dimensions of the health care system and can also be measured at these different points in the system. Quality as related to the

structure refers to the health services. The quality of actual health care activities (or process), and quality of the outcome are all measureable and together these three constitute quality of care. These have been explained below (Donabedian, 1988).

2.4.2.2.1. **Structure**

This indicates characteristics of the resources in the health delivery system. For example, number of qualified staff, functioning equipment, number of road worthy vehicles, policy guidelines and management systems. These may be easy to measure, but are not always informative unless they are related to process and outcome (Donabedian, 1988).

2.4.2.2.2. **Process**

This involves an examination of the process of care in terms of what is actually done to and for the patient. Collection of this data depends on having good systems of recording and reporting. Process measures include things such as waiting time, examining patient properly and appropriateness of treatment among others (Donabedian, 1988).

2.4.2.2.3. **Outcome**

How to measure the effects or outcomes of care can be more difficult to carry out and not often comprehensively done. Outcome measures include, for example, mortality, patient satisfaction, coverage and attendance levels (Donabedian, 1988).

Some studies that have assessed quality of health provision, have identified poor quality care as a factor that may result in low uptake of care where this is available as well as non

adherence to treatment when care is received (Raven *et al*., 2011). Thus, it has been revealed that lack of appropriately trained staff, incorrect treatment, poor staff attitude, delay in referral, poor cooperation and interpersonal relationships between health providers as well as inadequate supplies and equipment are evident in many resource poor settings (Wall *et al*., 2009). All these can affect the outcome of the care provided.

2.5. **Chapter Summary**

This chapter has reviewed relevant literature, theoretical and conceptual frameworks that formed the basis of this study. The next chapter discusses the profile of the study area and methods utilised.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0. **Introduction**

This chapter discusses the profile of the study area and the methodology adopted for the study. The chapter is divided into nine (9) sections. Section one (1) presents the profile of the study area. Section two (2) is on the methods. Section three (3) is on the research participants. Section four (4) is on data collection techniques and tools. Section five (5) is on triangulation. Section six (6) is on data analysis. Section seven (7) is on reflexivity. Section eight (8) is on ethical considerations. Then section nine (9) is the chapter summary.

3.1. **Study Area/ Location**

This section presents information on the study area (Figure 3) covering location, population, vegetation and topography, ethnic groups, economic activities and health.

The study was conducted in the Ho Municipality, which is one of the 275, Metropolitan, Municipal and District Assemblies (MMDA) in Ghana (Ghana Districts, 2013). The Ho Municipality, one of the 25 administrative districts in the Volta Region of Ghana, lies within latitudes 6.35°N and 6.94°N and Longitudes 0.17°E and 0.53°.It is located in the middle zone of the region. The Municipality, formerly a district, is made up of five sub-municipalities namely: Ho Central, Hokpeta, Norvisi, Sokode / Akrofu and Dutasor. Ho Central doubles as a Municipal and the Regional capital of the Volta Region (MHMT, 2013).

3.1.1. **Population**

The total population of the municipality is 187730, the ratio of males to female is 47.5: 52.5. The Ho Central has the highest population of about 57.65% with Hokpeta having the lowest 9.0%. The distribution of the sub municipalities is shown in table 3.1 below.

Table 3.1: **Distribution of New Population per Sub-Municipality-2012**

Sub Municipality	**Population**	**% Composition**
Sokode Akrofu	20455	10.90
Dutasor	24433	13.01
Ho Central	108231	57.65
Hokpeta	16896	9.00
Norvisi	17715	9.44
Total for the Municipality	187730	100

Source: MHMT 2013

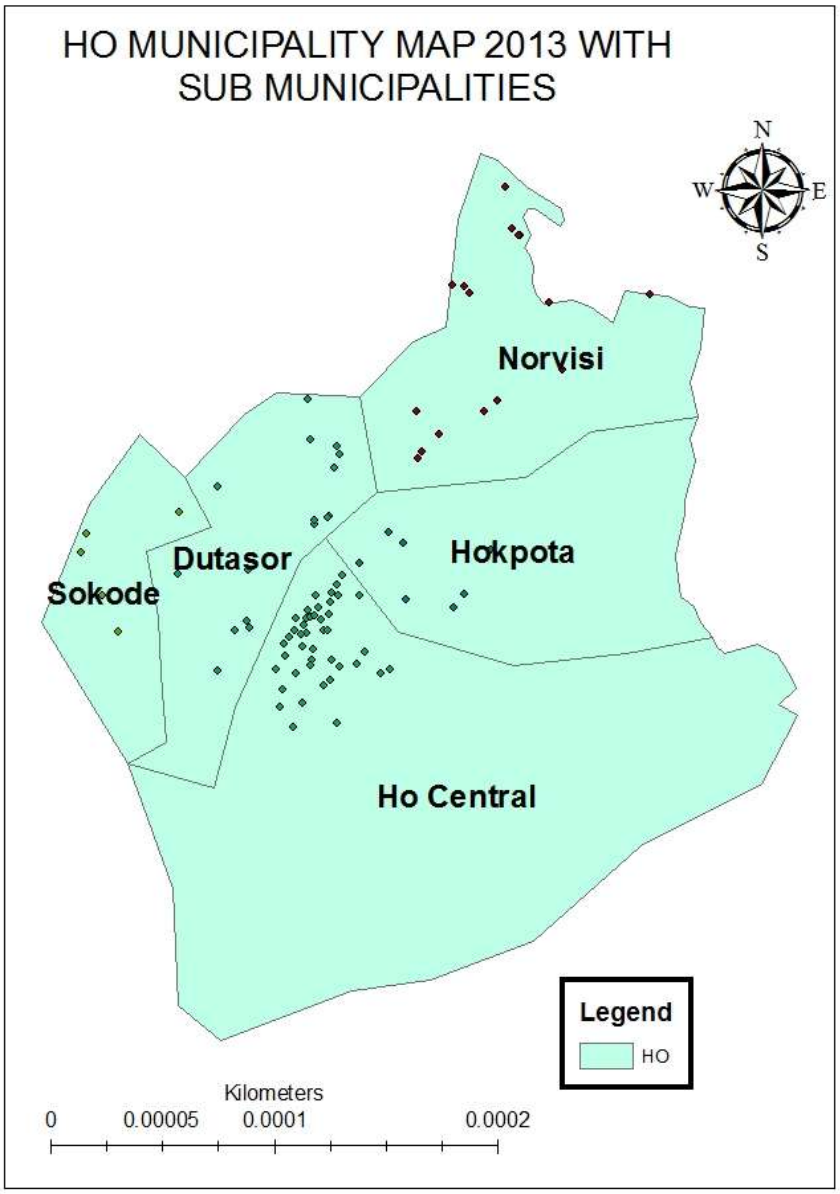


Figure 3: **Map of Ho Municipality**

Source: MHMT 2013

3.1.2. **Vegetation and Topography**

The northern zone of the municipality is mountainous with Mount Gemi as the highest peak. It is covered with forest while the southern zone is of mixed savanna and grassland with some marshy area(s). The municipality is drained by Tordzie (The red river) and Tsiwoe (MHMT, 2013).

3.1.3. **Ethnic Groups**

The Ho Municipality is the original home of three main ethnic groups: the Ewes, the Avatimes and the Adangbes. The latter migrated from Ningo in the Greater Accra Region. Though the Avatimes and the Adangbes speak their own languages, Ewe has become the Lingua franca spoken by all the three groups (MHMT, 2013).

3.1.4. **Economic Activities**

The major economic activities carried out by the indigenous people of the study area include farming and trading, wood carving, kente weaving, pottery and cattle rearing, among others (MHMT, 2013). The crops mainly produced include: maize, cassava, yams, plantain, banana, citrus, rice, mangoes and avocado pear. Non-traditional crops like pineapple are dominant at Akrofu, Sokode and Abutia areas. Sugarcane is also grown at Tsawoenu. Many of the citizens engage in construction works whereas others are employed in the formal sector especially the civil service (MHMT, 2013).

3.1.5. **Transport and Communication**

The municipality is fortunate to have its capital double as the regional capital of the Volta Region. An elaborate road network connects it with other regional capitals and major cities in the country. While the road network in Ho township and a few other townships in the municipality is motorable throughout the year, the same cannot be said about roads linking the municipality with the many smaller towns and villages. In addition to road transport, Ho has an air strip, which is mainly used by the military (MHMT, 2013).

Like other municipalities and districts in Ghana, the Ho Municipality, has all the modern communication facilities. Major towns have access to telephone and internet (MHMT, 2013).

3.1.6. **Health Facilities**

The major public health facilities in the Municipality are the municipal and regional hospitals. The Volta Regional Hospital has become the teaching hospital for the University of Health and Allied Sciences. Other facilities include: health centres and CHPS compound (MHMT, 2013). There are also four privately owned health facilities. Table 3.2 indicates the sub- municipalities and the respective health facilities available.

Table 3.2: **Sub-Municipalities and Health Facilities in the Ho Municipality**

Sub Municipal	**Facilities**
Ho Central	Ho Polyclinic HOPE Centre Council Hall Family Clinic Alale Family health clinic Hofedo CHPS
Hokpeta	Takla CHPS zone Akoefe CHPS zone
Norvisi	Shia health Centre Atikpi CHPS Zone Avee CHPS Zone Nyive Health Centre Tokokoe Health Centre Tanyigbe Health Centre
Sokode/Akrofu	Akrofu Health Centre Matter Ecclesiae Clinic
Dutasor	Matse Health Centre Taviefe Health Centre Ziavi CHPS Zone Klefe Health Centre

Source: MHMT 2013

3.1.6.1. **Supervised Delivery**

This is done by midwives and doctors and occasionally community health nurses who conduct emergency deliveries. Out of a total of 19 GHS institutions, only 6 conduct delivery, making access less universal. However, the rate of supervised deliveries is increasing, as a result of positive response to targeted programmes aimed at increasing skill delivery such as community durbars and radio programme(s) on reproductive health issues. Total deliveries recorded also increased, including a slight increase in TBA deliveries. Private hospitals made a significant impact of 7.0% of the total deliveries; 1.0% from CHAG and the private midwives contributed 1.9% (MHMT, 2013).

3.1.6.2. **Low Birth Weight (LBW)**

The rate of LBW has increased over the past three years. The distribution has been as follows: 5.9% in 2009; 6.6% in 2010; and 7.1% in 2011. The rate is still high and reflects poorly on the quality of care during antenatal clinic (ANC). Malaria in pregnancy, PIH, and malnutrition may be the causes (MHMT, 2013).

3.1.6.3. **Still Birth**

Efforts aimed at reducing the still birth rate has not yielded much as the numbers are still high over the years. A rate of 2.6% was recorded in 2012 as compared to 3.4% in 2011, with 2012 showing some reduction. Out of the total still births recorded 77 (1.3%) were Fresh Still Birth whilst 70 (1.2%) were Macerated Still Birth in 2012. The major contributory factors were traced to inadequacy and aging of midwives, heavy workload due to increasing number of deliveries among other causes (MHMT, 2013).

Table 3.3: **Top Ten Causes of Institutional Deaths: 2010-2012**

2012	**No (%)**	**2011**	**No (%)**	**2010**	**No (%)**
Septicaemia	73 (15.4%)	Septicaemia	80 (14.7%)	Septicaemia	72 (15.7%)
Liver Disease	68 (13)	R.T.A	75 (13.8%)	R.T.A	55 (12%)
R.T.A	52 (10%)	Liver Disease	60 (11%)	Peritonitis	42 (9.2%)
Hypertension	48 (9.2%)	Peritonitis	55 (10%)	Liver Disease	33 (7.2%)
Peritonitis	38 (9%)	Hypertension	48 (8.8%)	Hypertension	32 (7%)
Malaria	33 (6.3%)	Anaemia	40 (7.4%)	Malaria	18 (3.2%)
Cerebrovascular Accident	28 (5.4%)	Malaria	35 (6.4%)	Anaemia	16 (3.9%)
Anaemia	26 (5.0%)	HIV/AIDS	25 (4.6%)	HIV/AIDS	12 (2.6%)
HIV/AIDS	22 (4.2%)	Meningitis	15 (2.8%)	Cerebro vascular Accident	8 (1.7%)
Meningitis	4 (0.8%)	Cerebro Vascular Acc.	10 (1.8%)	Meningitis	5 (1.1%)
Total	392 (78%)	Total	443 (81.3%)	Total	293 (64%)

Source: MHMT 2013

3.2. **Methods**

This session provides information on the study design, population and sampling, data collection techniques and tools, data analysis, triangulation, reflexivity and ethical considerations.

3.2.1. **Study Design**

This study was conducted using qualitative research approach in the Ho Municipality between May and June, 2013. This is because in a qualitative study, the researcher is able to understand the meanings individuals or groups ascribe to a social or human problem. In order to study the problem, the researcher often collects data in the natural setting, in the field, at the site where the participants experience the issue or problem under study. The researcher gathers information by directly talking to the people and seeing them behave and act within their context. Another advantage of qualitative study is that the researcher personally collects data through examining documents, observing behaviour and interviewing participants (Creswell, 2013).

Since the researcher did not know what was pertaining to the health facilities in the Ho Municipality, it was considered necessary to use qualitative research method as quality of care issues might be different in different settings. This allowed for multiple forms of data such as interviews, observations and document review to be used. The data from this multiple sources were reviewed and organised into categories and themes. Another reason for using the qualitative study was its flexibility. There was room for change of plan as the researcher entered the field. These notwithstanding, the researcher was not

oblivious of the fact that one disadvantage of using qualitative research method is that the researcher has a lot of data to analyse, hence, data analysis was cumbersome and time wasting (Creswell, 2013).

3.2.2. **Study Sites**

The Volta Regional Hospital, the Ho Municipal Hospital and four health centres where deliveries are done were purposively selected from health facilities in the Ho Municipality for the study. This means that out of the 23 health facilities, six (6) were visited. These included: one (1) regional hospital and one (1) municipal hospital and four (4) health centres selected out of twelve (12) in the municipality.

3.2.2.1. **Setting / Description of Studied Organizations**

The four study sites have been described in this section. These facilities were selected based on some defined criteria as embedded in the discussions below.

3.2.2.2. **Health Centre**

The health centres visited were Shia, Nyive, Mater Ecclesiae and Akrofu established in 1978, 1960's, 2005 and 1985 respectively. The Municipal Health Directorate oversees the daily running of the health centres. All the same the health centres are run by a medical assistant who heads the facility. The medical assistant is supported by a midwife, one or two community health nurses, enrolled nurses and in some places a laboratory technician and a dispensing technologist.

The main functions of the health centre are: treating routine cases, dealing with emergencies by giving first aid treatment, immunization of children, carrying out antenatal and post natal clinics during which health education talks are given to pregnant women and nursing mothers. Also, depending on the presence of a midwife, deliveries are done. Some of the health centres visited were in a deplorable situation. The buildings were old and needed urgent renovation. Some of the buildings were leaking badly, thus hampering service delivery during the raining reason. Other problems facing the health centres are pest infestations such as termites, bats, ants, insects and flies. This concern was expressed by one nurse in the following statement:

> *'…There are mice and bats in the room which have been eating the infusion and so almost every day I have to throw the infusion away...'* (HP-1)

Some of the heath centres did not have a delivery bed and were using the couch for both deliveries and examination of pregnant women. This situation was described by one midwife: '…*There is no delivery bed, so I have been using the couch*…' (HP-3)

3.2.2.3. **Municipal Hospital**

This is a 150 bed capacity hospital established in 1927. The hospital management consists of medical superintendent, health services administrator, nursing manager, finance manager, administrator, and pharmacist. The management meets twice weekly. The total nurse population was seventy- one (71) out of which nineteen (19) were midwives and medical doctors two (2). The Ho Municipal Hospital provides laboratory, blood transfusion services, x-ray, obstetrics and paediatric as well as surgical and medical

services. The maternity unit has mosquito nets on each bed whilst the paediatric unit does not. There was a four cot neonatal cubicle in the paediatric ward where rooming-in was being practiced. That was where mothers were allowed to stay with their children and to breastfeed their babies or, in cases where the babies could not be breastfed, feed them with expressed milk through a nasogastric tube or by mouth.

3.2.2.4. **Regional Hospital**

The Volta Regional Hospital is a government owned ultra-modern referral hospital. It is a 240-bed capacity hospital and it is strategically located to provide specialised health services to the people of the Volta region and beyond. The total number of doctors was twenty two (22) at the time of the study: twelve (12) medical officers and ten (10) house officers. Total nurse population was 177 whilst the midwives were twenty-five (25).

The daily management of the hospital is the duty of a seven - member Core Management Team indicated below:

The Medical Director

The Head of Clinical Services

The Head of Nursing Services

The Deputy Director of Nursing Services

The Head of Administration

The Head of Pharmacy

The Head of Finance

The management team meets once fortnightly to discuss issues pertaining to the smooth operation of the hospital.

The hospital is patronised by clients from Republic of Togo, Benin and Federal Republic of Nigeria. It is in the 13th year of service delivery (since construction/establishment). The wards are neat. As expected, certain facilities such as laboratory with blood transfusion services, x-ray, obstetric services among others, were available. Figure 3.1 below shows the referral system in the municipality.

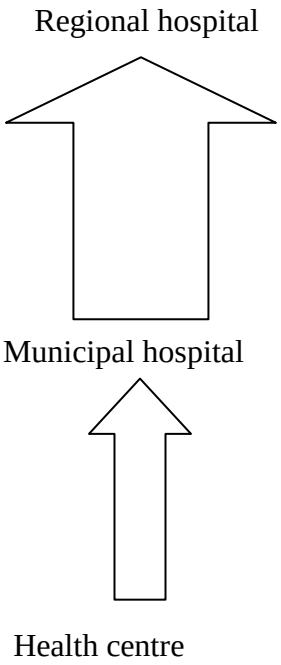


Fig 3.1: **Referral linkages between the facilities visited**

For purposes of referral of health care cases and conforming to primary health care (PHC) principles (World Health Organisation & UNICEF, 1978), the health centre is supposed to be the first point of call for patients in the municipality. When cases are beyond the capabilities of the health centre, they are referred to the district hospital, then to the municipal hospital and finally, to the regional hospital.

3.2.3. **Sampling and Sampling Strategy**

Purposive sampling technique was used to select research participants and health facilities for data collection. Thus, data was collected using a purposive sampling technique, which focused on particular characteristics of a population that were of interest, which enabled the researcher to get answers to the research questions (Creswell, 2013).

3.3. **Research Participants**

The study participants included selected health providers and mothers of newborn babies. Specifically, these were health personnel working in the maternity and paediatric wards of the regional hospital and the municipal hospital as well as midwives in the health centres. The breakdown was: eleven (11) staff of maternity and paediatric wards at the regional and municipal hospitals who were available and willing at the time of the study. In addition, four (4) midwives were selected from the four (4) selected health centres. The total number of staff was fifteen (15). A total of eight (8) mothers of newborns who were available at the selected health facilities at the time of the study were involved in this study.

3.4. **Data Collection Techniques &Tools**

Primary data was collected using various instruments/techniques like semi-structured interviews, document review and direct observation. These have been thoroughly discussed below. However, prior to the start of the data collection, a pilot study was carried out. Sample questions were also administered to pre-test their validity.

3.4.1. **Interviews**

Primary data was collected using qualitative interviews with health workers and patients (mothers of newborn babies). Qualitative interview is a process of finding out what others feel and think about their worlds. The purpose is to understand the major points of their message and how these compare or contrast with their own situation. The interviews are suitable as they helped in generating insights and concepts which cannot be obtained through the use of formalised instruments (Creswell, 2013).

Qualitative interviews were conducted using a semi-structured interview guide. Semi-structured interviews involve a series of open-ended questions based on the subject areas/issues the researcher wants to cover. The open-ended nature of the question defines the subject matter under study but affords opportunities for both interviewer and interviewee to discuss some topics in more detail (Twumasi, 2001; Babbie, 2007). If the interviewee has difficulty answering a question or provides only a brief response, the interviewer can use clues or prompts to encourage them to consider the question further (Twumasi, 2001). In a semi-structured interview, the interviewer also has the freedom to

probe the interviewee to elaborate on the original response or to follow a line of inquiry introduced by the interviewee.

The semi-structured interview format was guided by a set of open-ended questions, which was used to gather information from health care providers who were directly involved in neonatal care. This enabled the researcher to understand their main duties on the ward, perceptions of quality of care and any difficulties faced in carrying out their duties. Furthermore, facility infrastructure such as special ward for care of sick neonates, availability of neonatal intensive care units and capacity were enquired and responses checked against facility records. Some health providers were reluctant to take part in the study and were, therefore, not included in the study.

Additionally, in-depth face to face interviews were conducted with mothers of sick newborns between the ages of 18 - 36 who had been discharged from hospital/facility. They were contacted personally at the time of their discharge and interview schedule arranged with them. The interviews were carried out within one week after discharge at a convenient location decided by the mother. This was to make certain that they would express themselves freely. All mothers who were approached and asked to participate in the study accepted.

The interviews were conducted in the English and Ewe languages. Participants were asked to describe their perceptions / opinions of neonatal care. The mothers were asked how they perceived the care they received during their baby's admission to the hospital.

They were also asked about the information they received during provision of care. Throughout the interviews, follow-up questions using probes were asked in order to acquire a deeper understanding when an explanation was unclear. Interviews were conducted until saturation of data was reached where there was no additional new information afterwards. Instead, there was repetition and substantiation of already collected data. Each interview lasted approximately 10-20 minutes.

3.4.2. **Audio Recording and Notes Taking**

It is explained that in much the same way as a good hammer is essential to fine carpentry; a good tape recorder is indispensable to fine fieldwork (Patton 2002; Creswell, 2013). The interviews were recorded using a tape recorder to provide a basis for subsequent analysis. Handwritten notes were also taken of non-verbal actions of interviewees/ participants to enhance understanding of participants' explanations of events.

3.4.3. **Direct Observation**

Another method that was used to gather empirical data was direct observation. Trochim (2000) indicates that direct observation is different from participant observation in a number of ways. In the first place, a direct observer does not typically try to become a participant in the context. However, the direct observer will endeavour to be as unobtrusive as possible so as not to bias the observations. Secondly, direct observation recommends a more disconnected perspective as the researcher watches events rather than taking part (Trochim, 2000).

An observation was undertaken in the health facilities; especially in the paediatric and maternity wards; to ascertain the availability of equipment and care processes using a checklist. Furthermore, the researcher observed posters/protocols in the wards (paediatric and maternity) which described neonatal care processes such as when and how to carry out neonatal resuscitation, how to treat neonatal jaundice, doses of medications for neonates at different gestational ages; work environment, adherence to aseptic techniques such as hand washing practices by staff and mothers of newborns, change of footwear before entering the neonatal wards, number of babies on a bed/cot, and equipment such as ambu bag, radiate warmer, bilirubinometers, phototherapy, glucometer, oxygen, among others. Observations were also carried out on health provider - client interactions, whether staff gave information about diagnosis and treatment of neonates to mothers.

3.4.4. **Document Review**

Another data collection method that was applied was document analysis. Some analysts explain that documents reveal what people do or did and what they value. Since such behaviours or actions occur in a natural setting, the data gathered is of strong validity. This could be written or visual and the researcher needs to develop an observation guide that will direct them through each document (Creswell, 2013). Using a checklist, the researcher reviewed patients and hospital clinical records, particularly, on neonatal health care at the selected health facilities. Records of care provided were reviewed as well using an observation schedule (a prepared checklist). Records on basic supplies and equipment in the maternity (labour wards) and paediatric wards (neonatal wards) were inspected and reviewed.

Document reviews also involved assessment of case note completion of basic items adjudged to be essential in the management of a sick neonate. These included: records of birth weight, apgar score, gestational age, temperature, respiratory rate, haemoglobin level, heart rate and also mothers records of HIV screening, maternal blood group and rhesus factor, in the maternity and paediatric wards contributing to neonatal care at the regional and municipal hospitals.

3.5. **Triangulation of Methods**

In this study a triangulation of methods was used including in-depth interviews with health providers and mothers of sick neonates; observations of care provided to neonates and document review of records of sick babies. It involved comparing data from different methods and comparing the perspectives of people from different points of view (Creswell, 2013).

3.6. **Data Analysis**

Thematic analysis was used in the process of data analysis. This was performed through the process of coding in six phases to create established, meaningful patterns. These phases are: familiarisation with data, generating initial codes, searching for themes among codes, reviewing themes, defining and naming themes, and producing the final report (Attride-Stirling, 2001). These have been explained below.

3.6.1. Familiarisation with Data

The first phase of thematic analysis is familiarisation with data where the data is read through over and over again after transcribing and also by listening several times to the audio recorded interviews. During reading major issues that are imbedded in the data are identified (Attride-Stirling, 2001).

3.6.2. Generating Initial Codes

Following data familiarisation, the researcher will normally code their data. The researcher applies brief verbal descriptions to small amounts of data. The detail of this process will differ according to circumstances, including the researcher's expectations of the direction in which the analysis will follow (Attride-Stirling, 2001).

3.6.3. Searching for Themes

At every stage of the analysis, the researcher will alter and modify the analysis in the light of experience and as ideas develop. Thus, the researcher may adjust earlier codings in the light of the full picture of the data. The idea is really to get as close a fit of the codings to the data as possible without having an overabundance of unusual codings (Attride-Stirling, 2001).

3.6.4. Reviewing Themes

On the basis of the codings, the researcher then tries to identify themes, which combine considerable sets of these codings. Again, this is something of a trial-and-error process in which change and adjustment will be a regular feature. The researcher needs to be able to

define each theme sufficiently so that it is clear to others exactly what the theme is (Attride-Stirling, 2001).

3.6.5. **Defining and Naming Themes**

The researcher needs to identify examples of each theme to illustrate what the analysis has achieved (Attride-Stirling, 2001).

3.6.6. **Producing the Final Report**

As in all report writing, the process of writing up the analysis and the results of the analysis is part of the analysis process and a good researcher may re-think and re-do parts of their analysis in the course of write-up (Attride-Stirling, 2001).

In analysing the data the audio taped interviews were first of all transcribed verbatim and were synchronised with the notes. The transcribed interviews were then read through several times to obtain an overall feeling. For each transcript, significant phrases or sentences that pertained to availability of staff, skills in neonatal care, availability of equipment, and care processes of neonatal care as well as opinions of mothers on neonatal care were identified. Meanings were then formulated from the sentences and then categorised into themes. The results were then incorporated into an in-depth description of the quality of care for neonates in the facilities.

Codes have been allocated to interviewees where they are quoted. HP: means health personnel and MN: means mother of neonate.

3.7. **Reflexivity**

Reflexivity refers to how knowledge is shaped by the researcher and how this is accounted for in the research process, especially awareness of researcher's contribution to the construction of meanings throughout the research process (Creswell, 2013). To reduce reflexivity the researcher was aware of potential prejudices. Thus, the researcher attuned in order to collect significant data that was truthful. The researcher's own experiences from practising as a health worker for a couple of years in Ghana's health sector were brought to bear on the discussion in this study.

3.8. **Ethical Considerations**

The Ethics Review Committee of Ghana Health Service granted approval for the study. A written permission was obtained from the Municipal Director of Health Services. A letter of introduction was written by the Assistant Registrar, School of Public Health and sent to heads of the selected health institutions. Consent was obtained from the management of the hospital, officers in charge of the health centres and mothers before interviewing, reviewing of documents and doing observations on the wards. That is, consent was obtained from the senior medical officer/a senior health officer and ward in charges of each health facility for the health worker interviews; case notes assessments and checklists of supplies. In the same vein, consent was obtained from mothers before interviews were carried out. Participants who agreed to take part in the study signed participants' consent form(s). Participation in the study was voluntary and participants were assured that anonymity would be observed at all times. Confidentiality of

participants was maintained by using numbers/codes on both the recorded interviews and transcripts.

3.9. **Chapter Summary**

This chapter discussed the profile of the study area and the methodology adopted for the study. It has demonstrated how qualitative research methods: interviews, observation and document review were applied to assess the quality of neonatal care in health facilities in the Ho Municipality. The next chapter discusses the results of the study.

CHAPTER FOUR

ANALYSIS OF FINDINGS

4.0. **Introduction**

This chapter presents analysis of the findings of the field work undertaken for the research. The field data was collected using various data collection tools as explained in chapter three of this report. The results were accordingly analysed taking cognisance of the objectives of the study. From the 18 verbatim transcripts, the themes that were identified have been discussed as presented. The chapter is divided into five sections.

4.1. **Demographic Characteristics of Participants**

Tables 4.1 and 4.2 describe the demographic characteristics of mothers of newborn babies and health providers respectively.

4.1.1. **Age of Respondents**

The ages of the eight (8) mothers who participated in the study ranged between 18 and 36 years. The average age was 27.5 years and standard deviation was 6.75 (see table 4.1). For the staff respondents, their ages ranged between 26 and 58 years. Majority of them were between the ages of 55 and 60 and thus nearing their retirement. The average age was 47.6 years and standard deviation was 11.8 (see table 4.2).

Table 4.1: **Demographic characteristics of participating mothers**

Code	Age	Marital Status	Educational level	Occupation	Type of Birth	Parity
MN- 1	19	Single	JSS	Farmer	Spontaneous Vaginal	1
MN- 2	22	Single	JSS	Farmer	Spontaneous Vaginal	2
MN- 3	34	Married	Tertiary	Teacher	Spontaneous Vaginal	2
MN- 4	26	Married	SSS	Hairdresser	Caesarean	1
MN- 5	34	Married	None	Trader	Caesarean	2
MN- 6	31	Married	SSS	Hairdresser	Spontaneous Vaginal	2
MN- 7	36	Married	SSS	Trader	Spontaneous Vaginal	3
MN- 8	18	Single	SSS	Student	Spontaneous Vaginal	1

4.1.2. **Marital Status of Respondents**

Of all the eight (8) mothers who participated in the study, five (5) were married while three (3) were single mothers. The marital status of a mother has implications for access to orthodox or quality health care (refer to table 4.1). For staff respondents, twelve (12) were married, two (2) were single and one (1) was a widow (see table 4.2).

4.1.3. **Educational Status of Mother Respondents**

Of all the eight (8) mothers who took part in the study, one (1) had attained tertiary level education; three (3) had attained senior secondary school (SSS) level education; two (2) had attained junior secondary school (JSS) level education and one (1) had no formal education. This means that majority of mothers had the ability to appreciate basic health educational messages (refer to table 4.1).

4.1.4. Occupation of Mother Respondents

The occupation of the participating mothers was as follows: one (1) teacher, two (2) farmers, two (2) hairdressers, two (2) traders and one (1) student (refer to table 4.1).

Table 4.2: **Demographic Characteristics of Staff Respondents**

Code	**Age**	**Marital Status**	**Qualification**	**Years of Experience in the facility**
HP- 1	57	Married	Midwife	7
HP- 2	56	Married	Midwife	7
HP- 3	54	Married	Midwife	7
HP- 4	34	Married	Midwife	5
HP- 5	26	Single	Nurse	4
HP- 6	28	Single	Midwife	2
HP- 7	56	Married	Midwife	13
HP- 8	58	Married	Midwife	9
HP- 9	54	Married	Nurse	12
HP- 10	55	Married	Midwife	8
HP- 11	28	Married	Midwife	2
HP- 12	57	Married	Midwife	7
HP- 13	49	Married	Midwife	10
HP- 14	58	Widow	Midwife	13
HP- 15	44	Married	Medical Officer	1

4.1.5. **Type of Birth - Mother Respondents**

Out of the eight (8) mothers who participated in the study, six (6) had spontaneous vaginal delivery whilst two gave birth through a caesarean section. This goes to confirm that babies born spontaneously are more at risk of neonatal complications (refer to table 4.1).

4.1.6. **Parity – Mother Respondents**

Of all the eight (8) mothers, five (5) were multiparous whilst three (3) were nulliparous (refer to table 4.1).

4.1.7. **Qualification of Staff Respondents**

Of all the fifteen (15) staff respondents, twelve (12) were midwives, two (2) were trained nurses and one was a medical officer. This means that with a little bit of training in neonatal care, they would be able to provide adequate and quality care for the neonates (refer to table 4.2).

4.1.8. **Years of Experience of Staff in the Facility**

A total of fifteen (15) staff were involved in the study. Out of this, four (4) had more than ten (10) years working experience; seven (7) had more than five (5) years but less than ten (10) years working experience; and four had less than five (5) years working experience (refer to table 4.2).

4.3. **Emerging Themes of the Study**

From the interview transcripts, five main themes emerged some of which were further categorized into sub-themes. The main themes are: availability of staff, skills in neonatal care, lack of equipment, inappropriateness of treatment of neonates and availability of protocols.

4.3.1. **Availability of Staff**

Availability of staff, especially specialised staff, in neonatal care is critical to the delivery of quality of care. Apparently, health facilities may be under-utilised if there is shortage of essential staff. One surprising thing the researcher noticed was that in the regional hospital where even though special wards existed for neonates and premature babies, they were not in use and so babies were mixed with older children. According to the staff interviewed, this was due to limited number of staff available in the hospital, especially for the neonatal unit. This was expressed by one healthcare provider:

> *'…There is shortage of staff in our facility so we have not been able to use the neonatal and prematurity wards since the hospital was built…'* (HP- 8)

This problem was also emphasized by several staff spoken to:

> *'…We have a problem of shortage of staff that is why we have not been able to use the prematurity and neonatal wards…'* (HP- 14)

All mothers who had their babies admitted to that facility registered their displeasure and concern about this practice and called for a special unit for babies. Several mothers were of the opinion that their children could get infections from these older children.

Staff of other facilities visited expressed worry over the severe shortage of key health personnel like nurses and doctors. As a result, the care given to neonates was affected. One nurse in-charge lamented:

> *'..How can we give quality care to the neonates when you have only one nurse on night duty managing the ward? For example, we don't have an emergency department so imagine you are attending to a sick neonate and they rush in a sick convulsing child. It is very difficult…'* (HP- 7)

Observations on the wards revealed that babies after delivery were received and immediate newborn care was provided by other staff like community nurses or enrolled nurses. In some places, health aides, who had received little or no training on how to provide neonatal care and were not included in any in-service training programmes, were supporting where there were single midwives on duty. This was creating some difficulties for such midwives who should have been working with a full staff compliment. For instance, one midwife at a health centre said:

> *'…I am alone here so when I do all deliveries' it is the community health nurses who help with the baby whilst I attend to the mother. I do assist them if there is any problem…'* (HP- 3)

It was observed that the number of staff available for managing sick neonates was few or inadequate. There was only one paediatrician and one trained paediatric nurse in each hospital. However, the few midwives and nurses who had stayed long on the paediatric wards were also very good. This was notwithstanding the fact that most of these health personnel were not trained on how to manage the neonates. They were rather trained as psychiatry nurses, community health nurses, and health assistants. In fact, whosoever

found him or herself in the paediatric ward had to somehow manage neonates. This did not support quality of care. The problem of inadequate staff was echoed and reechoed by all staff in the health facilities.

4.3.2. **Skills in Neonatal Care (In-Service Training of Staff)**

The staff working in the neonates' wards had shortage of specialised skills in neonatal care. Most of the staff spoken to had received training in neonatal care as part of their training in school. However, some of them were apparently not confident in handling neonates that needed neonatal resuscitation. They would need to supplement that training with some in-service training programme in neonatal care. Moreover, since the training they received at school was basic some healthcare providers expressed timidity at managing neonates until they had gone for in-service training. Thus, some of the staff were also of the opinion that the in-service training had increased their confidence level as they felt more comfortable to do neonatal resuscitation afterwards. This was expressed by one midwife:

> *'...I went for a workshop on helping babies breath and it has equipped me a lot because before even though I have not been trying my hands I was always afraid. Before I was a bit timid but now I know how to do it…'* (HP- 6)

Most of the in-service programmes were on neonatal resuscitation. Apparently, the commonest newborn problems encountered were birth asphyxia, prematurity, neonatal sepsis and neonatal jaundice. However, some health personnel, especially the new nurses had not gotten the opportunity to go through some of the in-service programmes on neonatal care. This concern was expressed by some health personnel:

> *'…I am a new person here but I did my national service here. I have personally not been to any training. But sometimes, they organise workshops in the hospital. When it happens like that, some of us will be on duty, we don't go and the elderly ones go and brief us afterwards…'* (HP- 11)

> *'…Oh it's by God's grace… [laughing]….normally [laughing]…I don't know what to say. Once a while if they let you know…but if the letter does not reach the bottom then…usually it is not done, you see others going. Once a while, if God intervenes and you are lucky... [Laughing] then you may go…*' (HP-6)

Most ward in-charges were also seen busily attending to patients, putting in intravenous (IV) lines, serving medications, supervising the junior nurses and so forth. This is because most of the young nurses were rotation nurses who were inexperienced and needed to be guided and supervised to carry out some of the duties.

Some staff were concerned about yearly rotation of staff at the paediatric ward as this was hampering quality neonatal care. Thus, there was the need for staff to be maintained in the wards like it is done for the midwives. Obviously, when new staff come to the ward, it takes some time for them to get used to the activities and processes. For example, new nurses will have to get accustomed to dosing regimens for premature babies and neonates, setting of IV lines for babies and other specialized care for neonates. This cycle of rotation had the tendency of slowing down the quality of care given to neonates. A nurse expressed this concern by saying:

> *'…I think that neonates are precious …vital so those nurses attending to them have to be trained on the job and maintained.*

> *Every year they reshuffle the nurses, it is only the midwives who are stable…'* (HP- 6)

Some nurses were also of the opinion that they needed training on how to care for the neonates. A midwife threw more light on this:

> *'…If they can even give us some form of training because calculating the feed is a little bit of a problem to some of us…it is not all of us who know how to calculate the feed. For example, give 60ml every 3 hours or 60ml every hour that kind of thing… And even the IV fluid, sometimes we have to put the baby on IV fluid…we don't know these things. We need people to come and teach us, educate us and let us understand. We like them to do on the job training because there is no money. Then, if they can give us a paediatrician of course, there is a gynaecologist, but we don't have a paediatrician. As for the gynaecologists, immediately they have delivered the baby they have finished with you so we have to be struggling and looking for a doctor… Doctor what should we do? Sometimes, they will write for you. If there is a paediatrician who will pass the nasogastric tube….tell us give this baby this or give that baby that it will be good.'* (HP- 10)

Thus, they were not comfortable with administration of IV fluids and also calculation of feeds for the neonates.

4.3.3. **Lack of Equipment**

All facilities visited had functional weighing scales. Ambu bags (bag and mask) were available on all the wards of the regional hospital visited. These were of appropriate sizes for both premature and term babies and were functional. The municipal hospital had ambu bags on both maternity and paediatric wards but there was no size available for preterms. On the other hand, in the health centres, there was only one ambu bag each which was either not functional or of inappropriate size for even the term babies. Out of

the four health centres visited, only two had a functional and appropriate size ambu bag for term neonates. None of the facilities had ambu bag for preterm babies.

Other equipment available on the wards was one pulse oximeter each for the two hospitals. The pulse oximeter is equipment used to check the oxygen saturation of babies before they are put on oxygen and also when a baby has to be weaned off oxygen. However, oxygen delivery systems were inadequate. For example, at the regional hospital there was only one oxygen point for the preterm ward. There were some glucometers. Again, there were two phototherapy machines available in the regional hospital. There were also six nonfunctional warmers and a nonfunctional radiate warmer. The condition of the warmers was explained by a staff thus:

> *'…The warmers are not functional sometimes they overheat…'* (HP-13)

The municipal hospital on the other hand did not have phototherapy machines. They improvised with blue light in addition to early morning sunbaths. Most of the staff confirmed that essential equipment needed for neonatal care such as dosiflow; which is an equipment for regulating IV fluids, were not available. As a result, adult giving sets were being used for the babies. This made fluid regulation difficult. This was one of the concerns expressed by some staff of the two hospitals:

> *'…We don't have dosiflows, you know…it is an equipment for regulating IV fluids, so we find it very difficult regulating fluids for the neonates…'* (HP- 7)

> *'..My problem is the regulating of fluids. We don't have equipment that will give a particular drop rate…'* (HP- 5)

All the staff interviewed at the hospitals said there were no incubators for managing premature babies. One staff described the lack of incubators as interesting as she wondered how they could manage neonates without an incubator. Some respondents were also of the opinion that since the babies were so vulnerable and needed warmth to survive, incubators would help to maintain their temperature and thus improve their quality of care. There were no bedside laboratory facilities such as centrifuge and bilirubinometers for checking of quick haemoglobin and bilirubin levels for anaemic and jaundiced patients / babies. Due to lack of equipment for neonates, some staff had to improvise and this put their lives in danger sometimes.

4.3.3.1. **Coping Strategies**

Staff, especially in the health centres, reported many ways in which they improvised, including taking risks in order to provide care for the neonates in the following words:

> *'…The ambu bag is not functioning so if there is a need for resuscitation, I do mouth to mouth resuscitation for the baby…'* (HP- 12)

> *'…The ambu bag is too big for the neonates so I improvise…ah ah… [Laughing]… with the voltic bottles I prepared myself…'* (HP- 3)

> *'…We don't have incubators, we improvise, we sometimes use hot water bottle for the premature babies…'* (HP- 11)

Apart from the risk to the health worker, the babies were also at risk of acquiring all sorts of infections from some of these procedures. These could even result in the death of the babies.

4.4. **Inappropriate Treatment of Neonates**

Instances of inappropriate treatment provided were observed. These have very serious implications for quality of care.

4.4.1. **Over-Dose and Under Dose of Fluids and Medications**

Due to the lack of dosiflows and perfusers, correct administration of intravenous fluids for the neonates was difficult. Administration of intravenous fluids was done with adult giving sets. Therefore, it was difficult to regulate the amount of fluids a particular neonate needed. One nurse actually expressed the difficulty encountered:

> *'…we are using the adult giving sets….we don't have for the babies sometimes by the time you turned your head the fluid is finished… There is a particular fluid regulator for the baby it will regulate the fluids so that you don't overload....'* (HP- 13)

Overdose and under dose of medication were common as most clinical records of neonates reviewed showed errors in the treatment plan. At the Municipal hospital, there was no paediatrician. Hence, physician assistants and a medical officer were managing the neonates. This is sometimes frustrating for other health workers:

> *'…Apart from the regulating of fluids, treatment regimen - we don't have a specific treatment plan…We don't have a paediatrician. It is the medical officers who take care of them…If we could get a particular physician who could take care of the neonates, it will be good. We have different doctors who come with different treatments,*

> *it is really difficult. So we have the BNF, which we refer to…'* (HP-5)

As a result, staff at the Ho Municipal Hospital prefer to refer neonates to the Volta Regional Hospital where there was one paediatrician as discussed below.

4.4.2. **Referral**

Most of the staff spoken to indicated that they refer babies to a higher centre if a neonate had a problem. Most of the centres visited did not have an ambulance for emergencies, including referrals. Therefore, when babies are referred, they were transported in a taxi (s), most often not accompanied by any staff. Some staff interviewed explained further:

> *'…We don't have a neonatal unit so we refer if there is anything; we refer all our premature babies to the Regional hospital…'* (HP- 4)

> *'…There is no paediatrician here so we quickly refer if the baby has any problem…'* (HP- 10)

When mothers are transferred unaccompanied, some mothers may decide even not to go. Inexperienced mothers may panic when complications such as seizures occur. This could also result in delays in receiving care and could prolong hospital stay as the child also acquires new infections during the transfer.

4.4.3. **Aseptic Procedures on the Wards**

All facilities visited did not have any aseptic procedures for staff and visitors entering the wards of the hospitals. Neither mask nor cap was worn before entering the wards.

However, staff and patients' relatives were required to change their footwear before entering the labour wards. Again, it was observed that mothers were allowed to sit with their sick neonates similar to what happens to mothers with older children, but they did not allow visitors to enter the prematurity ward. They call this rooming- in. This seeming lack of protocols for entering the wards was attributed to the way the wards have been structured. A staff explained that:

> *'…We do not have specific protocols for entering the neonatal ward but we don't allow visitors and sick staff to enter the wards…'* (HP-9)

It was observed that hand washing by staff was also infrequent. Staff were not able to wash their hands in between attending to patients, even in between caring for older children and the neonates. According to the staff interviewed, the heavy workload they experienced made it difficult for them to wash their hands frequently.

Apart from these, it was observed that neonates were mixed with older babies. However, one gratifying observation was that while neonates slept in their separate cots in both facilities, premature babies were given a separate room. This conforms to quality of care standards for neonates.

4.4.4. **Availability of Protocols**

At the health centre level, newborn corner would have the following: two bag and mask (ambu bags) of appropriate sizes for term and premature babies, bulb syringe and weighing scale. Protocols for resuscitation of newborns included: Apgar scoring, danger

signs to look out for; to ensure prompt referral to hospitals. At the district and regional hospitals, newborn corner would have the following: two ambu bags of appropriate sizes for term and premature babies, bulb syringe, weighing scale, suction tube and machine, pulse oximeter, oxygen and radiant warmer. Protocols included:

1. Protocols for resuscitation of newborns, Apgar scoring, danger signs to look out for; to ensure prompt referral to neonatal unit,
2. Intravenous fluid therapy for newborns and preterm babies,
3. Management of hypoglycaemia in newborns,
4. Management of seizures,
5. Resuscitation algorithm, and
6. Assessment and management of neonatal jaundice among others.

During observation on the labour and paediatric wards for availability of protocols, it was observed that all health facilities visited had several posters, protocols and guidelines on the pregnant woman and older children. For example, the most common protocols and posters for post neonates included malaria treatment guides, tuberculosis and HIV. These were also available in some maternity units. There was only one protocol: Apgar scoring on the baby in the labour wards. However, one facility did not have any protocol (s) on the baby in the labour ward. Most of the protocols were on Apgar scoring and breastfeeding. Meanwhile, three facilities had protocols on the resuscitation algorithm.

Indeed, the municipal hospital had even gone to the extent of binding several protocols on almost all emergencies of both pregnant women and older children but had not included the neonates. Nonetheless, there was one protocol on Apgar scoring. In the paediatric ward of the regional hospital, there was one protocol on medication dosing in preterm babies. There is no gainsaying that protocols are essential as they serve as a quick reference for the health worker: they become very handy during emergencies.

4.5. **Perceptions of Mothers of Neonates of the Performances of Health Personnel**

All mothers interviewed had delivered in a health facility. They were all regular attendants at the antenatal clinic as they had more than five visits. All participants were given information about how to eat well balanced diets, use of mosquito nets, the type of medications to avoid during pregnancy, danger signs to look out for during pregnancy, labour and delivery as well as what to do when these signs occur. One mother described her experience:

> *'... [Laughing]…We were given information on our diet. The midwives advised us to eat well: they told us to eat vegetables and fruits also. They also told us not to drink alcohol…We were also advised on the danger signs of pregnancy such as bleeding from the vagina, when the baby's water is leaking when you are not yet due, or when you are vomiting excessively, or when you are experiencing swollen feet or dizziness…'* (MN -5)

> *'…Concerning labour, we were told that we will / would experience severe lower abdominal pain and waist pains; and the baby's water can break, that we should report early to hospital. In fact, they told us a lot of things [smiling]…'* (MN -6)

One mother described her experience at the antenatal clinic as interesting and had a smile on her face when she said:

> *'…the midwives told us a lot of things and I learnt a lot. They told us to eat well, dress well to the hospital and that we should breastfeed our babies with only breast milk for the first six months…'* (MN-3)

4.5.1. **Reasons for (Mothers' Understanding of) Admission of Neonates**

An attempt was made to find out if mothers of neonates knew the reasons or understood why their babies had been admitted even without an explanation from the medical personnel. The mothers interviewed themselves explained the possible reasons why their babies had been admitted to the hospital; at least they knew the symptoms. For instance, one mother said: '…*When I delivered my baby, she did not cry, that is why she was admitted…'* (MN -5). It was further revealed that this mother's baby was admitted a few moments after the child was born in a health facility. Most of the mothers interviewed expressed similar reasons for the admission of their babies:

> *'…My baby did not cry after birth, so she was admitted to the ward. She was breathing very fast and was blue so she was put on oxygen and given some treatment…'* (MN -4)

It was found that some of the mothers had also had their sick babies re-admitted a few days after they had been discharged from the hospital after delivery. Some mothers shed more light on this:

> *'…My baby was crying excessively and could not eat…I did not know what was wrong with my baby and that is why we were admitted. Elderly people told me his stomach was paining him…'* (MN -3)

> *'…That afternoon, after I was discharged home the same day I delivered, the baby started shaking…um seizures of the hands and legs… This continued throughout the night and up to the following day. He refused to suckle / suck. The seizures occurred about ten times and so we reported to the clinic where the nurse referred us to this place. He had another seizure when we visited the nurse…'* (MN -1)

> *'…The following day after discharge from the hospital, I noticed that my baby's eyes had become yellow so we reported…'* (MN -2)

> *'…My baby was admitted twice…The first day my baby was born the nurse said he had 'asphy'….the baby was turning blue or violet and so she had to be admitted and given oxygen. We were on admission for one week at the maternity ward after which we were discharged. Four days after we were discharged, my baby was so ill, the body was very hot so we went back to the hospital and he was admitted for two more weeks…'* (MN -6)

> *'…We were on admission in another facility for six days because my baby could not cry immediately after birth and had also turned blue but he was not improving so we were transferred to this place for another ten days…*(MN -8)

So, it was obvious that some of the mothers had their babies admitted for various reasons. Some of these were due to severe birth asphyxia, neonatal sepsis and also neonatal jaundice. As confirmed by some staff these were the common newborn problems that they encountered.

4.5.2. **Mothers' Perception of Care**

Interviews with mothers of neonates on their perception of care yielded two main themes: Satisfactory and unsatisfactory care. These were further categorised into four sub-themes each.

4.5.2.1. **Satisfied Care**

This theme had other subthemes. These included: health providers been considered as knowledgeable, kind and respectful towards mothers, carrying out proper examination of their babies and finally, ensuring recovery of their babies.

4.5.2.1.1. Health Providers are Knowledgeable

Mothers gave various opinions about the care given to their sick babies whilst on admission. According to them doctors possessed the requisite knowledge and skills needed to assist their babies. Some mothers/ participants expressed confidence in health providers:

> *'...In fact, I don't know what would have happened to my baby if I had not brought her to hospital. This is the reason why if you have any health problem you should always report to hospital…'* (MN -2)

Some of the mothers also verbalised that doctors and nurses knew their work and that they were smart: '…*The nurses and doctors are very smart, they are doing very well*…' So, mothers were satisfied with the care they received because health providers had received the requisite training and skills through education to carry out their work effectively. This has resulted in increased trust for the health worker and thus mothers would be motivated to use the services again.

4.5.2.1.2. **Respect and Kindness**

Contrary to popular saying that nurses and doctors / health providers are rude and unfriendly, mothers said that nurses were warm and friendly. According to one

participant, the nurses were kind and for her she would never forget that. For example, the following statements were expressed by some mothers:

> '…*The nurses treated us with respect and kindness*…' (MN-2)

> *'…The nurses were good, easily approachable and friendly…'* (MN -6)

The nurse-patient interaction was excellent as nurses were welcoming, treated patients and clients with respect and kindness. All mothers interviewed attested to this:

> *'…The nurses were jovial and friendly. As for that one I will give them 100%...'* (MN -7)

Interestingly, there was a blackboard, which had quotes of human relationships and their interaction. For example; there was one quote which said:

> 'Kindness is a language which the deaf can hear and the blind can see'
> (Mark Twain, 1835 -1910)

The researcher was personally touched by the depth of meaning and appropriateness of the quotes posted. They were thought - provoking. So this might have influenced the wonderful patient-client interactions that existed in the facilities.

4.5.2.1.3. **Recovery of Babies**

Some mothers associated good quality care with recovery of the baby. Some of them said they were satisfied because their baby had improved tremendously. According to one

mother her baby could not breastfeed before reporting to the health facility, but this had improved as the baby could breastfeed: she was very satisfied. Another mother also stated that she was happy with the care given to her baby at the hospital because the baby was initially breathing very fast, but had improved. Also, the baby could not initially suckle/suck, but was able to do so upon admission. Therefore, she was very happy.

> *'…My baby initially could not suckle and so was put on IV fluids but now the baby is suckling/sucking and the breathing is better so I am happy.'* (MN -4)

> *'…I am very satisfied because now my baby can breastfeed and the fever is gone…'* (MN -1)

4.5.2.1.4. **Mothers Associate Good Care with Examination of the Baby**

Some mothers were of the opinion that the nurses and doctors examined their babies well, used the stethoscope and that they were satisfied with the care they had received. This view was further explained by some mothers:

> *'…They are doing their best. Anytime the doctors are there to see my son they will press the tummy, they used the stethoscope, and even the nurses will use the thermometer to check the temperature. Whenever he was crying they would say baby sorry. I was very satisfied with that…'* (MN -3)

> *'…I was satisfied with the care because the doctors asked me questions about the baby's illness, he also examined the baby with the……um how do you call it…Stethoscope, whenever he came around and recommended another treatment…'* (MN-6)

> *'…I am satisfied because the doctors were very good…they took care of my baby very well.. The treatment is very good it was only the temperature that was not coming down and we were there for two weeks before the temperature came down…'* (MN-5)

Therefore, like many patients, mothers perceived quality of care on the basis of how health personnel practically performed their roles within the confines of the health facility while their babies are on admission.

4.5.2.2. **Unsatisfactory Care**

Sub-themes that emerged from unsatisfactory care included: mothers were not satisfied because there was lack of sleeping place for mothers, mothers dissatisfied with mixture of babies/neonates and older children, nurses' inability to set veins/lines for babies and mothers' lack of satisfaction with information.

4.5.2.2.1. **Lack of Sleeping Place for Mothers**

All the mothers spoken to at both hospitals were perceived not to be happy because there was no place for mothers to rest or sleep while their babies were on admission. The following statements capture their sentiments:

> *'…Another thing is that we the mothers have no place to sleep, and we have to sit for a long time till around 10:00pm before you can put a mattress on the floor to sleep. I asked my husband to bring me mattress from the house not the hospital mattress… if they can get a place for us to rest, we can take good care of the babies…'* (MN-5)

> *'…They should look at the welfare of mothers too; they should get a place for mothers to sleep… since the babies are breastfeeding, if we the mothers fall ill, they can get new infections…'* (MN-1)

> *'…I don't know why my son should be admitted to the hospital and I will not get a place to sleep. The first day we went I didn't know so I sat throughout the night. I was very unhappy. The next day, I asked my husband to bring me a student mattress from the house. Even that one some of the nurses will not allow you. There is no place for mothers to sleep; it is not fair at all. Because if you don't have a sound sleep how can you care for your baby…'* (MN-3)

Mothers regarded accommodation / or a place to sleep as very important for quality of neonatal care. Some were also of the belief that they could have also fallen ill as a result of lack of rest/sleep. Some of the mothers raised issues regarding quality of care by questioning: how could there be quality care when there is no provision made for mothers, when the wellbeing of their baby depends on them too?

4.5.2.2.2. **Mothers' Dissatisfaction with Mixture of Neonates and Older Children**

Some participants expressed dissatisfaction with the fact that their babies were mixed with older children on admission, especially in the regional hospital. They were of the opinion that their children could get infection from the older children. For example, some mothers registered their dissatisfaction:

> *'…I was not satisfied with the babies mixing with the older children. There has to be a room for only the babies…'* (MN -4)

> *'…I was not happy when my baby was mixed with the older children. Another thing I didn't like was that my baby's bed was*

> *changed and we were given a bed in a cubicle containing only older children…'* (MN -5)

Another mother, who had been shifted to the corridor, expressed anguish at the fact that her baby had been moved. With a crack in her voice, she described her agony:

> *'…Initially where I was located was for the babies, but the following morning, I was rather shifted to the corridor because they had brought an older child who was critically ill. I didn't like it…because a lot of people were passing there and I was not happy…*' (MN -3)

Mixing babies with the older children was a big issue for the mothers and thus most expressed dissatisfaction about it.

4.5.2.2.3. **Nurses Inability to Set Veins/Lines**

Mothers, whose babies had been admitted to the Volta Regional Hospital, were of the view that nurses did not know how to set veins for the babies. According to them, the nurses tended to prick their babies severally and most often were not successful. As a result, doctors had to be called in to do the IV lines. Even in some cases, doctors were not called at all. Some of the mothers expressed their concern about this:

> *'…The doctors should do the IV lines and not the nurses…the nurses can prick the babies so much that we tend to feel for the baby…Sometimes, you even see some mothers crying…'*(MN -4)

> *'…The nurses do not know how to set the lines. If they don't get the line, the medication is not given and my baby will miss some of the doses…'* (MN -6)

> *'…The doctors have to be pricking the babies and not the nurses because they are not good with it. If the line is spoilt, sometimes, my baby did not receive the drug until the following day…'* (MN -8)

Other mothers also expressed confusion at the fact that the nurses could not secure IV line for their babies. As a result, medications would not be given. A mother had an experience where her baby's medication was not given until almost the third day:

> *'…One of the nurses told me because my baby was not sucking they had to put on IV fluids. When the nurses were trying to get the line they couldn't and it made me more confused. That night they couldn't get the veins and also on the following day they did the same thing [look of concern of her face]…So medications did not start on those two days. They did not call the doctors like I was thinking…they should have called the doctors to do the line but they didn't…'* (MN -3)

The nurses during their training were not allowed to do IV lines for the babies. Some nurses confirmed that they were not given the chance to try their hands at IV lines:

> *'..Oh! We were not observers…We were participating in the feeding and medication and those things…But just that we were not allowed to set veins. It was mainly for the doctors…'* (HP -11)

All the same, IV access was a challenge for most of the staff of the paediatric wards, including doctors. Nevertheless, as the saying goes, practice makes perfect. Therefore, nurses should also be given the opportunity to try their hands on how to set IVs during their training or while on attachment in order to avoid such embarrassment and

frustration they go through. This goes to show that curriculum designers should restructure the course in such a way that all nurses, including community health nurses would get the opportunity to practice basic live saving procedures like peripheral venous access in neonates.

4.5.2.2.4. **Mothers' Lack of Satisfaction with Information**

Most of the mothers spoken to were not given any information about their baby's illness. This put the mothers in an awkward position. Some of the mothers discussed how lack of information flow could affect their understanding of the care been provided for their babies:

> *'…No, I was not given any information…I only heard the doctors saying my child suffered from infection…'* (MN -5)

> *'…No, I was not given any information about my baby's illness. They were only talking among themselves and after that they went away…'* (MN-6)

> *'…We were not given any information about my son's illness and I don't know what really happened to him up till this time. The doctor was talking about antibiotics when we wanted him to discharge us. He said he was on antibiotics and has to complete it before we go home…'* (MN -3)

Information given to patients during treatment is necessary as it helps mothers to understand the essence of the admission. This is likely to encourage them to comply with the treatment more patiently.

4.6. **Chapter Summary**

This chapter dealt with the analysis of the results. The next chapter presents the discussion of the findings of the study.

CHAPTER FIVE

DISCUSSION

5.0. **Introduction**

This chapter, which discusses the findings of the study in relation to available theoretical concepts and literature, is divided into three (3) sections. Section one (1) focuses on availability of staff and skills in neonatal care. Section two (2) examines availability of Equipment and Care Processes of Neonatal Care and section three (3) discusses the Perceptions of Mothers of the Quality of Neonatal Care.

5.1. **Availability of Personal and Skills in Neonatal Care**

The study found that among the many factors influencing the quality of care was the availability of staff and their skills in neonatal care. Just as described in the quality of care model, the findings of the study reveal that health providers were concerned about the medical capacity and technologies available to them in order to function effectively. A similar finding has been documented (Ravern *et al*, 2008). The health providers, for example, were concerned about the number of staff available, their competency and also equipment available for them to work more efficiently. As has been suggested by a lot of studies done on neonatal care, staff were inadequate for neonatal care (Opondo *et al*., 2009; Neogi *et al*., 2011).

All staff had complained of workload, limited number of staff, among others. Unique to this study was the non- utilisation of prematurity and neonatal wards in the regional

hospital as a result of inadequate staff. Thus, babies were mixed with older children. This is why some researchers affirm that patient death as a consequence of nosocomial infections are linked to inadequate nurse to patient ratios. Neonates are vulnerable to all kinds of infections due to their weak immune systems (English *et al*., 2004; and Opondo *et al*., 2009). Arguably, mixing of the neonates with older children could result in the spread of hospital acquired infections from and to the older children and staff. This therefore does not support quality care.

As a result of inadequate staff, enough consideration or attention is not given to the neonates and thus medications for neonates are not served as scheduled. This could result in medication inaccuracies and hence lead to readmission, disability or death of the neonate. Likewise, in some cases too, sick neonates were kept with sick mothers on the maternity wards. Newborns need to be watched closely. Apart from the risk of infection there is also the risk of aspiration during breastfeeding or cup feeding. Neonates need to be managed separately, in a neonatal ward, prematurity or intensive care so that special treatment they require would be given them in order to improve the care (Hashim & Guillet, 2002; Neogi *et al*., 2011).

Evaluation of quality of care by providers also places emphasis on competency of staff (Neogi *et al*., 2011). The study found that majority of nursing staff catering for sick newborns were not trained in neonatal nursing. In some cases, they were not even trained paediatrics. Hence, they were not familiar with the care of sick neonates. Instead of maintaining them to improve their skills they were rather rotated yearly. Besides this, it

was found that the basic neonatal training component in the nursing course was not significant.

Training of not only skilled staff, but also of unskilled staff was essential in order to improve the care given to neonates. This is because ward aides were also involved in routine care of neonates, especially when only one midwife was on duty. Most of them were not competent. There was, therefore, increased risk of the baby developing hypothermia, which might consequently lead to death. There was also the risk of infection. This finding is consistent with the observation by Kumar *et al*. (2009) that neonatal deaths could be as a result of improper use of equipment and procedures.

It is, therefore, important that, as an interim measure, more staff are trained on the job and maintained to improve the quality of neonatal care since neonatal nurses are not presently available. In-service training and on-the-job training programmes could improve quality of care for patients as new innovations and technologies keep emerging. Therefore, staff need to be updated. As was described under the theme; skills in neonatal care (4.3.2), it was evident that in-service training programmes improved the morale of staff to manage neonates. Staff described in-service training programmes as beneficial and useful to their practice. This is in line with the findings of Plaat (2008) who believes training is a must for any health professional that may be present at a delivery.

Some healthcare respondents were of the opinion that in-service training made them more confident as they used to shy away from doing, for example, neonatal resuscitation for

babies. However, not all staff got the opportunity to attend, especially those who needed these programmes most. For example, most in-service training programmes were on neonatal resuscitation and kangaroo mother care, which were mainly organised for midwives. Continuous professional development courses should include care of sick neonates. This will enable staff who had not undergone any training on managing neonates have a firsthand information and thus improve their skills. This is consistent with primary health care recommendations (World Health Organisation & UNICEF, 1978).

5.2. **Availability of Equipment and Care Processes of Neonatal Care**

Another important aspect of assessment of quality of care is the availability of equipment for neonatal care. Consistent with the findings of English *et al*. (2004) and Opondo *et al*. (2009) this study found that equipment such as incubators, dosiflows were not available at all. Furthermore, phototherapy machines, bedside centrifuge and bilirubinometers were not available for the care of sick neonates. Bag and mask equipment were not available in some facilities. Where they were available they were mostly nonfunctional, so were warmers. This does not promote or support quality of care. Due to lack of these dosiflows administration of fluids for neonates was a challenge. As a result, overdoe and under dose of fluids were common.

As has been described by Wong *et al*. (2009) and Lansdowne & Bevan, (2012) overdose and under dose of IV fluids and medications are very common in neonates because of their small size. Indeed, fluids in neonates have to be calculated according to their

weight, body surface area, and gestational age. Unless one is trained, it could be difficult, more so when equipment are not available, to give a particular drop rate. Most of the staff also had problems with calculation of feeds for babies. This is also done according to the weight and age of the baby.

Protocols are also essential for proper care of patients and most especially for neonates who are vulnerable to medication errors (Lansdowne & Bevan, 2012). They are very helpful in times of emergencies when readily available. Neonatal protocols were hardly available for care of sick babies. Rather most of the guidelines and protocols were on malaria, HIV, tuberculosis and pregnant women. Indeed, there seemed to be overconcentration of post neonatal care. Hence, neonatal care has been neglected (Van den Broek & Graham, 2009). Protocols and guidelines on neonatal care will enhance safety in the use of medicines and hence, promote quality care.

5.2.1. **Aseptic Techniques**

In Exodus 30:21, it is written:

> *'…So they shall wash their hands and their feet that they die not and it shall be a statute for ever to them…'*

Several studies have demonstrated the cost benefit ratio and positive effects of simple hand washing for preventing transmission of pathogens in health facilities (Collins, 2008). Medical staff and other health care workers are the frontline staff for enforcing infection control practices to reduce infection and transmission of organisms to other

patients (Collins, 2008). Nevertheless, clinical staff are often not consistent with hand washing practices. Especially, hospitals with low nurse staffing levels tend not to adhere to hand washing practices (Collins, 2008) which is consistent with the findings of this study on aseptic practices as staff of facilities visited complained of heavy workload and inadequate staff. Health personnel were not washing their hands in between patients.

Furthermore, the use of personal protective equipment (PPE) such as face masks, caps was not practiced by staff. Nevertheless, footwear was changed before staff entered the labour wards. Even though the wards were neat, hand washing and use of these PPE would further enhance safety and prevent an outbreak as was the case when the paediatric ward of Korle Bu Teaching Hospital had to be closed down following an outbreak of Methicillin-Resistant Staphylococus Aureus (MRSA) in which three children were reported dead (Bokpe, 2012).

This study found that babies slept one each in a cot. This is in contrast to the researcher's experience of keeping four babies in a cot as a result of pressure at the Komfo Anokye Teaching Hospital, where she had worked as a House Officer. As noted earlier one baby per cot reduces the incidence of cross infection and promotes good quality care (Silvestri *et al*., 2005). Though this was a good practice in the facility, its benefits could be obviated by the negative practice of mixing babies with older children in the same cubicle or of shifting babies to the corridor where a lot of people passed, including parents and visitors. By exposing these neonates to the risk of acquiring all sorts of infection, their stay in the hospital could be prolonged thereby increasing the cost of care to the patient

and the family. Since such unprofessional acts result in serious health hazards, it is important that staff receive additional training on infection control practices to prevent outbreaks in hospitals (Pallás *et al*., 2008).

5.3. **Perceptions of Mothers on the Quality of Neonatal Care**

Care receivers measure quality of care on outcome criteria such as feeling comfort, happy, informed and satisfied (Wheatley, Kelley, Peacock, & Delgado, 2008). Furthermore, according to the perspective model (Ravern *et al*., 2011) quality of health care means different things to health providers, patients and even managers who oversee it. In this study, mothers of newborn babies were concerned about the care they had received from the health facilities and how it met their expectations and needs. Mothers expressed satisfaction with the care they received when their hopes and aspirations were met. For example, mothers were expecting that their babies would be well, that they would recover from their illness and so were happy when their wishes were fulfilled.

On the contrary, some mothers were expecting that there would be a place for them to sleep, but because this need was not met, they were unhappy with the care that was given. Accommodation for mothers of sick newborns should be a priority for health facilities attending to sick neonates. Rooming-in has many advantages in addition to breastfeeding. It also prevents nosocomial infections. Even though rooming - in was being practiced, the mothers in this study had to sit throughout the night. Even as mothers are to exclusively breastfeed their babies, provision of accommodation would reduce stress and enhance quality care.

In the same way, mothers expected that IV lines for babies could be done easily by nurses, but were surprised and traumatised as their wishes were not met. Consistent with other studies that have looked at difficult intravenous access in the paediatric population, it was established that difficulty in placing IV line was very common and frustrating experience for children as well as providers who were inexperienced in paediatric intravenous line insertion and more so when they were fatigued and anxious (Kuensting *et al*., 2009). Training and retraining will give them the confidence to face such risk factors associated with neonate venous access: age less than 3 years, weight less than 5 kg, poor venous visibility and palpability due to small size and prematurity less than 38 weeks' gestation (Kuensting *et al*., 2009).

While maintaining a caring relationship is important, professional competence is also important for mothers. In this study midwives during their training in school were not allowed to set IV lines for babies. For them placing IV lines in neonates was for doctors. IV lines are frequently performed procedures for sick neonates and for that reason nursing programmes should include intravenous access in neonates. To further enhance the skills of nurses, protocols should also be developed for intravenous access in neonates.

Some researchers argue that assessment of quality of care by recipients places emphasis also on the interaction and interpersonal aspect (Chowdhury, Hossain, & Halim, 2009). This finding was substantiated under the sub-theme respect and kindness (4.5.2.1.2). Unique to this study, nurses were found to be kind, welcoming and treated clients with

respect. This was very good as it would promote understanding of the needs of mothers. Even though interaction was good, information pertaining to the neonatal illness was not given to mothers.

Consistent with Kumbani *et al*., (2012) provision of such information helps to make informed decisions about the health of patients and their families. Many patients while on admission would like to be discharged when they do not know why they are on admission more so when it is a neonate. By helping the new mother understand the illness of the baby, treatment given and how long they are likely to stay on the ward, care providers enable parents are likely to be patient enough to comply with the treatment.

5.4. **Chapter Summary**

This chapter presented a discussion of the findings of the study with regards to how they relate to available theory and literature. The next chapter discusses the conclusions and recommendations of the study.

CHAPTER SIX

CONCLUSION

6.0. **Introduction**

This last chapter presents the conclusions and recommendations of the study. It is divided into five (5) sections. Section one (1) presents the summary of the study and section two (2) presents the recommendations, section three (3) presents the limitations of the study, section four (4) presents hints on further research and section five (5) presents the concluding remarks.

6.1. **Summary of the Study**

This study had the objective to assess problems associated with neonatal care delivery in health facilities in Ghana. Specifically, it examined the challenges confronting health professionals in delivering quality neonatal care in the Ho Municipality. This was realized by adopting a qualitative research methodology, by which interviews were conducted with mothers of neonates, who had been discharged from the selected health facilities to assess their perception of neonatal care; health personnel to unravel the perceived challenges they faced in delivering quality neonatal care. Information was also collected through direct observation of health personnel at work in neonatal units; document analysis by reviewing policy documents of the Ministry of Health/Ghana Health Service; and earlier studies conducted in the field from the World Wide Web and journals. These were analyzed using a suitable framework. The main conclusions of the study have been summarized according to the objectives.

6.1.1. **Availability of Adequate and Skilled Human Resources for Neonatal Care**

The study concludes that there was problem of inadequate staff and that most of the few who were available were not familiar with the care of sick neonates. They admitted they needed on- the- job training to improve their skills in that aspect.

6.1.2. **Availability of Equipment and Care Processes of Neonatal Care**

The study discovered that while weighing scales were available in every facility, some essential equipment for neonatal care were either not available or were non-functional where they were available. These include: bag and mask (ambubag) for neonatal resuscitation, dosiflows for regulating and administering fluids for sick neonates, warmers and incubators for maintaining temperature in premature babies, phototherapy machines for jaundiced babies, bedside centrifuge and bilirubinometers. Furthermore, there were inadequate oxygen points for neonates.

6.1.2.1. **Aseptic Techniques**

The study found that aseptic procedures were not being adhered to. For instance, hand washing was not done frequently by staff. Moreover, personal protective equipment such as facemask, caps, aprons were not worn except in the labour wards where staff had to change their footwear(s) before entering. Babies were found sleeping in separate cots but they were mixed with older children. This was inappropriate.

6.1.3. **Clients' (Mothers of Newborns) Perspective on the Quality of Care for Neonates in Health Facilities**

The study concludes that the satisfaction of mothers with the quality of neonatal care was mixed. Whilst some mothers of neonates interviewed were somehow satisfied with care given at the facility others thought otherwise. The reasons for being satisfied were that the staff were knowledgeable; showed them respect and kindness; examined their babies well, and above all, their babies recovered. Mothers who were not satisfied with the care given were of the opinion that there was no place for them to sleep, nurses had difficulty in doing IV lines for the babies, babies were mixed with older children and they were not given any information about their baby's illness.

6.2. **Recommendations / Contribution to Knowledge**

The study makes potential contribution to knowledge, which has been classed under policy and practice, theory and methodology. These have been expanded below.

6.2.1. **Implications for Policy and Practice**

One startling revelation of the study is that there seems to be no defined policy framework for management of neonatal care in the country's health care facilities. Thus, changes in the provision of care for neonates may involve change in policy direction and organizational as well as clinical interventions to ensure satisfactory, continuous and consistent care. The following have been suggested for consideration by health policy makers in their efforts at improving quality neonatal health care in health facilities.

Neonatal units should be set up for each level of care. Every health centre that carries out deliveries should have a newborn corner consisting of bag and mask (ambubags) for preterm and term babies, weighing scale, protocols of neonatal resuscitation algorithm, Apgar scoring, danger signs to look out for prompt referral and so on. Hospitals should also have a newborn corner consisting of the above and in addition to oxygen, pulse oximeter, overhead warmers and so forth.

The study suggests that babies should be provided with a separate room and not mixed with older babies. There should also be facilities for managing sick neonates. A tertiary centre should have facilities for specialised care of newborns. Neonatal units and neonatal intensive care units should be built for neonates. Setting up of neonatal units in hospitals should take into account the mothers' welfare and thus provision of accommodation should be a priority.

Facilities managing neonates should have paediatricians, neonatologists, and neonatal nurses just as there are specialties in psychiatry, ophthalmology, among others. Paediatric and neonatal nursing should be added to the curriculum of nurses. Neonatal nursing should be started as a course for nurses who are interested so that improved specialised care could be given. In fact, if possible, staff, who are interested in neonatal and paediatric nursing, could be given sponsorship to train internally in some of the country's institutions or in related institutions outside Ghana.

Training programmes should include neonatal care. In-service training programmes should be organised often in neonatal care as new doctors and nurses graduate every year. These trainings should encompass issues related to management of sick babies, care of preterm babies, neonatal resuscitation, IV cannulation and so forth.

There is the need for policy makers to redirect their attention to these issues raised above in order to improve the quality of neonatal health care in health facilities in Ghana.

6.2.2. **Contribution to Methodology**

This qualitative study addressed a gap in the literature by exploring the experience of both the mothers of sick neonates and their care providers on the complex issue of the quality of neonatal care. Key findings of this study will be useful and important in effecting change in the provision of neonatal care for newborns most especially, sick newborns by providing and maintaining a conducive atmosphere for the neonates and their mothers. Different studies have applied either quantitative or qualitative methods separately or mixed methods to achieve results (Opondo *et al.,* 2009). However, this study makes significant contribution to knowledge in the area of research methodology by triangulating different research methods within the same qualitative research methodology. That is, the researcher has successfully, applied interviews, direct observation and document review, which helped to gather data for analysis. The deficiencies in each of the methods were assuaged by the other. This is described as triangulation of methods (Denzin & Lincoln, 2005).

6.2.3. **Contribution to Theory**

This study was able to bring out the outlook of quality of neonatal care in line with the theoretical framework on quality of care, the perspective model. Quality of care meant different things to the health provider and the mothers: recipients. For the health provider, quality of neonatal care meant availability of adequate, skillful staff and equipment. On the other hand, mothers' opinion on quality of neonatal care was described in terms of how their needs were met. This is the first time that the Donabedian (1988) quality of care framework and the perspective theory had been applied to such a study in the Ho Municipal. Thus, this study makes contribution to theory by its effective application of the said model to explain the findings, thus enhancing understanding of perspectives of both health providers and mothers of neonates on quality of neonatal care.

6.3. **Limitations of the Study**

The study may possibly suffer a bias because some participants (mothers and health providers) were interviewed on the premises of the health facilities, where they had either received care or provided care.

Some of the mothers were multiparas (two or more births) and although the questions asked sought their opinions on neonatal care, they might have included experiences from previous pregnancies resulting in some recall bias.

As a result of time constraint video tape recordings of health provider-client interactions were not done instead direct observation was done. During observations at the health

facilities, the researcher was not able to remain at the wards from morning through to the night. As a result of the short duration of the study, the researcher was not able to observe as many neonatal resuscitation procedures as possible.

There was methodological limitation relating to the use of only qualitative research methods: interviews, direct observation and document analysis. The findings of qualitative research, unlike quantitative research might not be generalised to the general population. However, qualitative research findings can be generalised to theoretical prepositions (Patton, 2002).

6.4. **Future Research**

This research was limited in scope as it was conducted only in few selected health facilities in the Ho Municipality. This made any generalisation to other health facilities in the country rather difficult. Hence, future research should seek to increase the number of health facilities to be used for case studies and the scope extended to cover other regions of the country.

It could be argued that this is one of the few studies conducted on quality of care relating to neonatal care in the Ho Municipal. Therefore, it is suggested that research on quality of care issues relating to neonates should be done in other settings. That is to say that more research should be done on parents' perspective of neonatal care / care of sick neonates in other settings for example in the teaching hospitals. Issues on the ineffective use of IV cannulation for neonates by nurses as well as referral of neonates should also be looked at.

This study applied only qualitative research methods in collecting empirical data for analysis. Due to the limitations in the use of qualitative research methods, it is suggested that future research endeavour should consider the use of quantitative research design to gather data. This would allow for increase in the number of sample size, which was limited in this study.

6.5. **Concluding Remarks**

The key issues identified in this study are the problem of inadequate staff and unfamiliarity with care of sick neonates. Some essential equipment for neonatal care were not available. Hand washing and use of personal protective equipment were not practiced frequently. Babies slept separately in cots but were mixed with older children. Mothers expressed satisfaction and dissatisfaction at the quality of care of neonates most especially with the issue of inability of nurses to fix IV lines and a sleeping place for them.

This was a small exploratory study of specific labour and paediatric wards in selected health facilities. However, the findings offer some insight into complex issues on the quality of neonatal care; staff and mothers of sick neonates' perceptions of the care provided and received. Nevertheless, the findings of this study would awaken the interest of policy makers both local and national on the need to pay more attention to neonatal care in health institutions in order to enhance quality of care given.

Therefore, the following recommendations are made for consideration by health policy makers and curricula developers of health training institutions.

There is the need to develop a policy framework to ensure the institution and implementation of effective and efficient provision of quality neonatal care in health institutions in the country. If a policy directive was given to institute this as a specialty, it would guide health professionals and the general public in their efforts at ensuring the safety and survival of neonates.

There is the need to provide adequate neonatal care institutions in the country. The provision and use of up-to-date health facilities and equipment would contribute to the reduction in neonatal mortality in the country.

There is the need to institute neonatal health as a specialty in health training institutions. Thus, developers of the curricula for the training of health personnel in the country's health training institutions should endeavour to introduce courses in the care and management of neonates. This would boost the human resource base and meet the requirements for quality neonatal care.

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APPENDIX A

University of Ghana, Legon
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Interview Guide for Health Providers

An Assessment of the Quality of Neonatal Care in Health Facilities in the Ho Municipality

Please, kindly assist in answering the following questions. Be assured that the answers provided will be solely used for academic purpose.

Section A: Socio-demographic Characteristics of Staff

Biodata

Sex [ ] Male [ ] Female

Age……

Marital Status [ ] Single [ ] Married [ ] Divorced [ ] Widowed

Educational Level [ ] None [ ] Primary [ ] JSS/Middle School

[ ] Secondary/Technical [ ] Tertiary

Occupation [ ] Medical Doctor [ ] Midwife [ ] Nurse

[ ] others (specify)……..

Section B: Skills in Neonatal Care

1. Have you had any training in neonatal nursing/care? ……
……..
……..
……..

2. Have you had any in-service training on neonatal care? ……
……..
……..
……..

- In the past year [ ] between one and five years [ ] more than five years [ ]
- What was the training on? ……..

……..
……..

- How beneficial / relevant do you think this training was? ……..

……
……

- How often do you go for such training? ……..

……
.....

- How often do you think these trainings should be held? ……..

……
……

3. What are your main duties on the ward(s)? ……

…….....
……..

4. What are some of the common newborn problems you encounter in this facility?

……
……
.....

5. What are your experiences with neonatal care in this facility?

……..
……..
……..

6. What are some of the difficulties you face in carrying out your duties in the neonatal ward(s) / when managing neonates?.....

……
……

7. What are the structures in place to support quality neonatal care?.....
.....
.....
.....

8. Which equipments are available for neonatal care?.....
.....
.....

9. What are your opinions on the quality of care for the neonates in this facility?
.....
.....
.....

10. What are your experiences in caring for premature babies?.....
.....
.....
.....

11. What assistance or support is needed to facilitate premature care? .....
.....
.....

12. How can neonatal care be improved in this facility? .....
.....
.....

Section C: Availability of Staff

1. Availability of Staff in the Delivery Room and Newborn Nursery

Indicate the staff available for	Newborn Nursery			Delivery Room		
	08am - 2:00pm	02pm-08pm	08pm-08am	08am-2:00pm	02am-08pm	08pm-08am
Doctors						
Medical Assistants						
Midwives						
Nurses						
Auxiliary staff						

2. Who is available during the weekend? .....

If senior staff members are not available all the time, how are they called?
.....
.....

Section C: Layout

1. Is there a nursery available? Yes [ ] No [ ]

2. How many cots/beds does the nursery (ies) have? Number of cots/ beds:
.....
.....

3. Up to what age are newborns admitted to the nursery? .....days/weeks

4. Where are out-born infants admitted to? .....

APPENDIX B

Observation Schedule

Maternity and paediatric wards inspection for the presence of basic supplies and equipment using a pre-prepared checklist:

Bag valve mask/ Ambu bag	Yes [ ]	No [ ]
Radiant warmer	Yes [ ]	No [ ]
Suction device	Yes [ ]	No [ ]
Glucometer	Yes [ ]	No [ ]
Oxygen	Yes [ ]	No [ ]
Perfusor	Yes [ ]	No [ ]
Phototherapy	Yes [ ]	No [ ]
Weighing scale	Yes [ ]	No [ ]

Availability of drugs (list the drugs you wish to find)

Ampicillin	Yes [ ]	No [ ]
Gentamicin	Yes [ ]	No [ ]
Phenorbarbitone	Yes [ ]	No [ ]
10% Glucose solution	Yes [ ]	No [ ]
Cefotaxime	Yes [ ]	No [ ]
Vitamin K	Yes [ ]	No [ ]
Aminophylline	Yes [ ]	No [ ]

Availability of protocols for management of neonates Yes [ ] No [ ]

Use of equipment

Use of ambu bag for neonatal resuscitation by staff Yes [ ] No [ ]

Babies / neonates being kept in a radiant warmer (if available) Yes [ ] No [ ]

Use of diagnostic test such as bilirubinometer for neonatal jaundice

Beds

Number of beds / cots available for neonates

Number of babies on a bed

Observation of aseptic techniques

How are the staff/ mothers / visitors observing simple cleanliness in the wards?

Staff / mothers / visitors use of facemasks, caps, wearing of gloves and aprons?

Staff / mothers / visitors changing footwear, wearing mask and cap before entering neonatal wards?

Hand washing practices by staff and mothers on the wards?

Record keeping

Case notes inspection and information extracted regarding presence or absence of a list judged to be essential to the record of a sick neonate.

Apgar score Yes [ ] No [ ]

Birth weight Yes [ ] No [ ]

Gestational age Yes [ ] No [ ]

Blood group of mother Yes [ ] No [ ]

Rhesus factor of mother	Yes [ ]	No [ ]
HIV screening	Yes [ ]	No [ ]
Record of neonatal deaths in a special notebook	Yes [ ]	No [ ]
Heart rate	Yes [ ]	No [ ]
Respiratory rate	Yes [ ]	No [ ]
Temperature	Yes [ ]	No [ ]
Haemoglobin level	Yes [ ]	No [ ]
Blood glucose level	Yes [ ]	No [ ]

Thank You.

APPENDIX C

University of Ghana, Legon
College of Health Sciences
School of Public Health

An Assessment of the Quality of Neonatal Care in Health Facilities in the Ho Municipality

Interview Guide for Mothers of newborn babies:

Please, kindly assist in answering the following questions. Be assured that the answers provided will be solely used for academic purpose.

Biodata

Sex [ ] Female

Age.....

Marital Status [ ] Single [ ] Married [ ] Divorced [ ] Widowed

Educational Level [ ] None [ ] Primary [ ] JSS/Middle School

[ ] Secondary/Technical [ ] Tertiary

Occupation.....

Parity.....

1. Where did you deliver?

2. What was the mode of delivery?

3. Did you attend antenatal clinic?

- Where was it?
- When did you start the clinic?

4. What were some of your experiences at the antenatal clinic?

What kind of information were you given with regard to what to expect during labour and delivery?

5. Why was your baby admitted to this facility?

- How do you feel about it?
- Are you satisfied with the care given to your baby?
- If yes why?
- If no why?

What have you learnt so far about your baby's illness?

- Were you given any information with regard to what was wrong with your baby, treatment given and how long your child would stay on the ward?

7. What have been your experiences when entering the wards to see your baby?

- Are you asked to wash your hands, put on protective wear(s):cap, facemask etc. and change your footwear before entering the wards?

- What do you think about this?

8. Are the nurses available on the wards all the time?

9. What are your experiences while caring for your baby in this facility?

10. What are your opinions on care given to neonates/ sick babies in this health facility?

11. How can care for neonates be improved in this facility?

Thank You.

APPENDIX D

Consent form

Project Title

An Assessment of the Quality of Neonatal Care in Health Facilities in the Ho Municipality. Department of Health Policy Planning and Management: School of Public Health, College of Health Sciences, University of Ghana, Legon.

Background

Dear Participant,

I wish to invite you to take part in this study. My name is Kokui Elikplim Pomevor. I am a student of the School of Public Health, University of Ghana. I am conducting a study on the topic: An Assessment of Neonatal Care in Health Facilities in the Ho Municipality. The objective of this study is to assess availability of human resources, equipment and care processes of neonatal care delivery as well as client (mothers of newborn) perspective on the quality of neonatal care in health facilities in the Municipality.

Procedures

The study seeks to interview health providers and mothers of newborn babies assess equipment and contents of available documents and observe care processes involved in order to ascertain the quality of care given to neonates in health facilities. In –depth interviews would be audio taped. Mobile phone would be used to videotape how health workers and their clients interact in the neonatal units. This is purely an academic

research, which forms part of my work for the award of a Masters Degree in Public Health.

Risks and Benefits

The information you provide will help me understand the state of neonatal care in the health facilities. The information, I believe, would benefit you in the long run, as it would arouse the interest of policy makers to pay more attention to neonatal care in the health facilities. Your participation in this study does not involve any risk or cost. Be assured that the information you will provide shall be treated with uttermost confidentiality and anonymity.

CONSENT

I, ……., declare that the purpose, procedures as well as risks and benefits of the study have been thoroughly explained to me and I have understood.

I hereby agree to take part in this study

Signature of participant …….

Date……. / …… / ……..

Interviewer's Statement

I, the undersigned, have explained this consent form to the subject in simple language that she/he understands, clarified the purpose of the study, procedures to be followed as well as the risks and benefits involved. The subject has freely agreed to participate in the study.

Signature of interviewer ……..

Date ……. / …….. / …….

Address …….

In case of any concern you can contact the ethics administrator Miss Abena Kwaa Addai –Donkoh on 0244712919.

APPENDIX E

GHANA HEALTH SERVICE ETHICAL REVIEW COMMITTEE

In case of reply the number and date of this Letter should be quoted.

My Ref. :GHS-ERC: 3
Your Ref. No.

Research & Development Division
Ghana Health Service
P. O. Box MB 190
Accra
Tel: +233-302-681109
Fax + 233-302-685424
Email: nanatuesdaykad@yahoo.com

10th May, 2013

Pomevor Kokui Elikplim
University of Ghana
School of Public Health
Accra

ETHICAL APPROVAL - ID NO: GHS-ERC: 71/03/13

The Ghana Health Service Ethics Review Committee has reviewed and given approval for the implementation of your Study Protocol titled:

"An Assessment of the Quality of Neonatal Care in Health Facilities in the Ho Municipality"

This approval requires that you inform the Ethical Review Committee (ERC) when the study begins and provide Mid-term reports of the study to the Ethical Review Committee (ERC) for continuous review. The ERC may observe or cause to be observed procedures and records of the study during and after implementation.

Please note that any modification without ERC approval is rendered invalid.

You are also required to report all serious adverse events related to this study to the ERC within seven days verbally and fourteen days in writing.

You are requested to submit a final report on the study to assure the ERC that the project was implemented as per approved protocol. You are also to inform the ERC and your sponsor before any publication of the research findings.

Please always quote the protocol identification number in all future correspondence in relation to this approved protocol

SIGNED.....

PROFESSOR FRED BINKA
(GHS-ERC CHAIRMAN)

Cc: The Director, Research & Development Division, Ghana Health Service, Accra