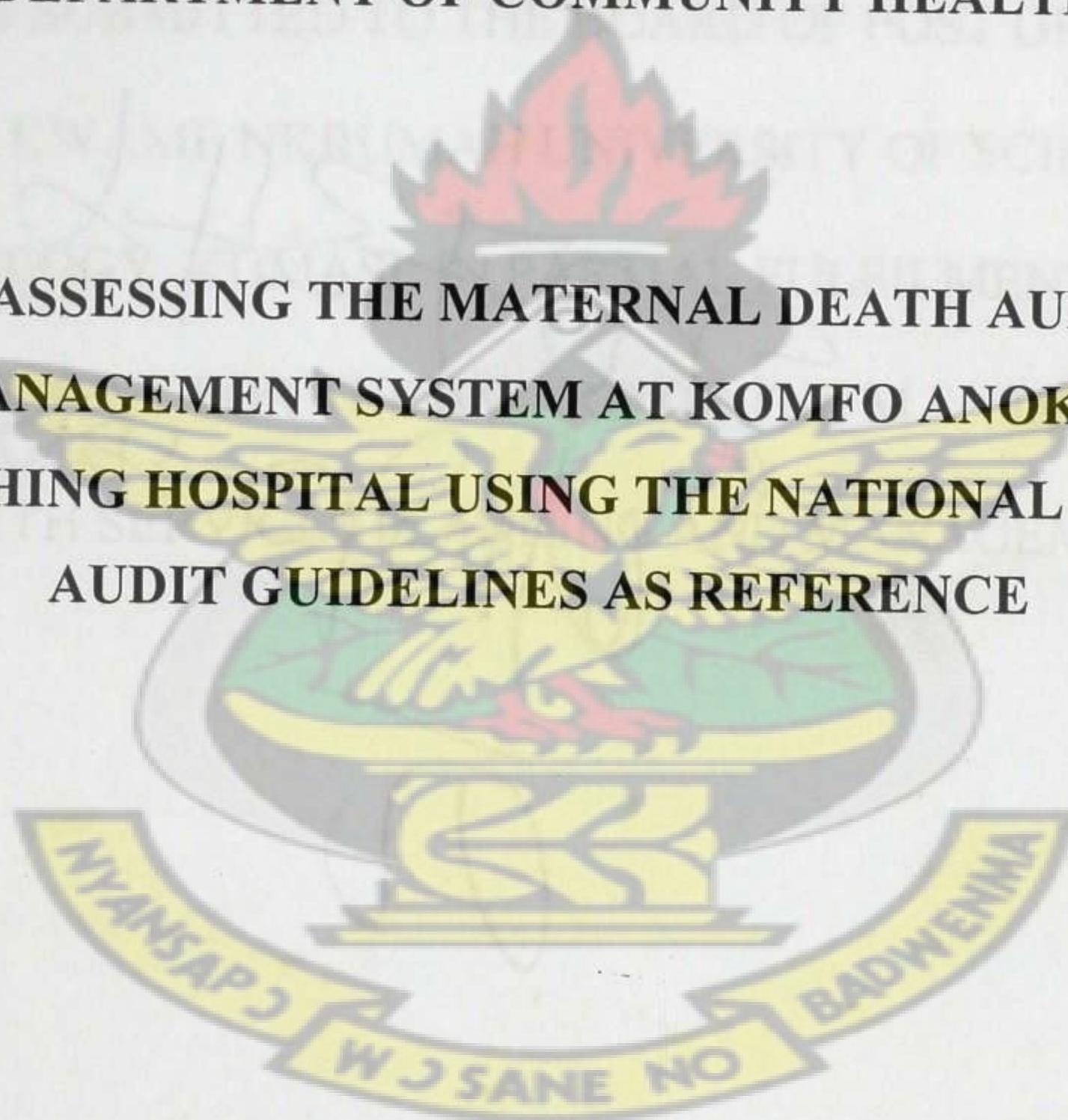


**KWAME NKRUMAH UNIVERSITY OF SCIENCE  
AND TECHNOLOGY  
KUMASI**

**SCHOOL OF MEDICAL SCIENCES  
DEPARTMENT OF COMMUNITY HEALTH**

**ASSESSING THE MATERNAL DEATH AUDIT  
MANAGEMENT SYSTEM AT KOMFO ANOKYE  
TEACHING HOSPITAL USING THE NATIONAL (MOH)  
AUDIT GUIDELINES AS REFERENCE**



**BY  
JOHN KWAKU AGYEMANG  
SEPTEMBER 2004**

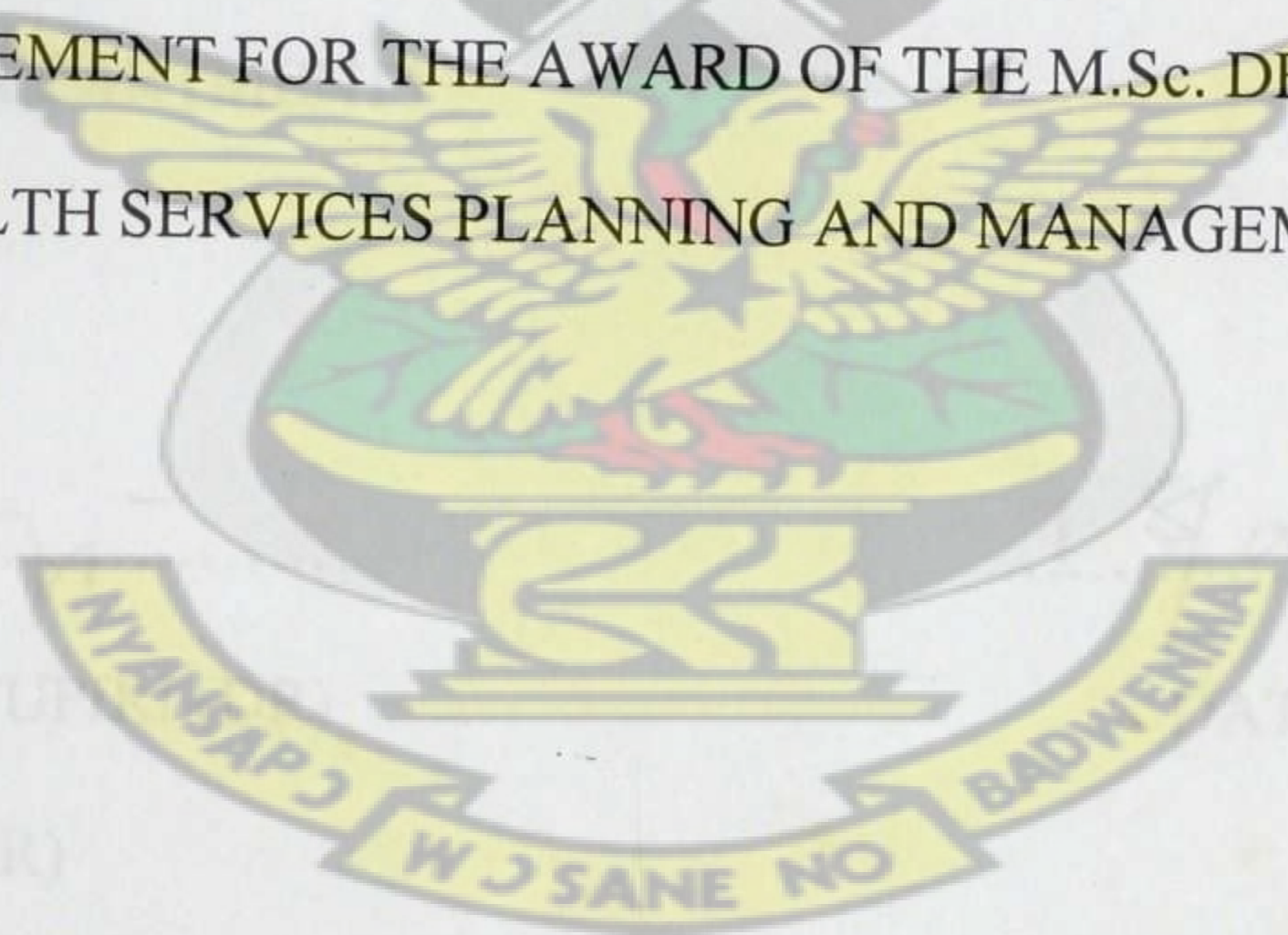
**LIBRARY  
KWAME NKRUMAH UNIVERSITY OF  
SCIENCE AND TECHNOLOGY  
KUMASI-GHANA**



ASSESSING THE MATERNAL DEATH AUDIT  
MANAGEMENT SYSTEM AT KOMFO ANOKYE  
TEACHING HOSPITAL USING THE NATIONAL (MOH)  
AUDIT GUIDELINES AS REFERENCE

KNUST

A THESIS SUBMITTED TO THE BOARD OF POST GRADUATE  
STUDIES, KWAME NKRUMAH UNIVERSITY OF SCIENCE AND  
TECHNOLOGY, KUMASI, IN PARTIAL FULFILMENT OF THE  
REQUIREMENT FOR THE AWARD OF THE M.Sc. DEGREE IN  
HEALTH SERVICES PLANNING AND MANAGEMENT.



BY

JOHN KWAKU AGYEMANG

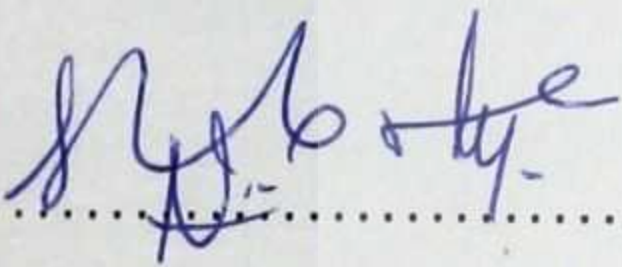
AD. BERTIN  
KWAME NKRUMAH UNIVERSITY OF  
SCIENCE AND TECHNOLOGY  
KUMASI-GHANA



## DECLARATION

I hereby declare that this thesis was prepared and submitted by me. I therefore accept sole responsibility for mistakes or errors in this work. Acknowledgement is however given to the various references made.

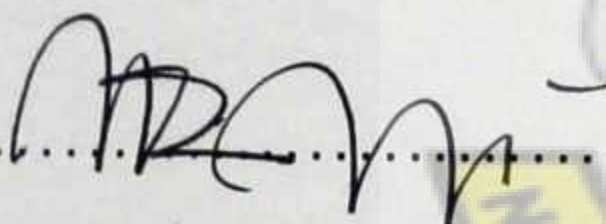
# KNUST

  
.....

E.N.L. BROWNE (DR)  
(HEAD OF DEPARTMENT)

18-10-05  
.....

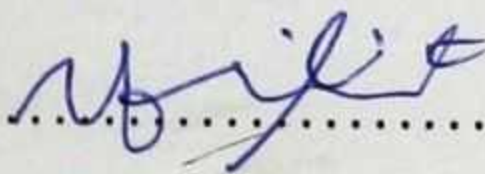
DATE

  
.....

EASMON OTUPIRI (DR)  
(SUPERVISOR)

18/10/05  
.....

DATE

  
.....

JOHN KWAKU AGYEMANG  
(STUDENT)

18/10/2005  
.....

DATE



## DEDICATION

I dedicate this work to my mother, Madam Yaa Kwakyewaa and my daughters Eunice and Joana Agyemang for their immense help and support.

# KNUST





## ACKNOWLEDGEMENT

I am thankful to God Almighty for His protection and guidance throughout my educational career. Having led me on the difficult path to this far, I am so grateful.

I deem it expedient to acknowledge the contributions and support of key personalities towards the completion of this thesis in particular and my Master's programme in general.

# KNUST

I owe a debt of gratitude to my supervisor, Dr. Easmon Otopri, for technical advice and direction he offered for taking me as your own younger brother and offering me brotherly support and advice throughout my postgraduate studies, may God richly bless you.

To all my lecturers at the Department of Community health, School of Medical sciences, I thank you for the knowledge imparted and intellectual advice you gave to make this work a reality.

I thank my sister, Comfort Yamoatta for her financial resources committed towards my postgraduate studies. Thank my classmates: Kofi Boateng, Stephen Benyaseh Alewaba, and Fanny Enos for the love shown throughout our course of study. May God see you through all your endeavours in life. I am also grateful to Mrs. Grace Mensah, (Accountant), School of Graduate Studies, Mr. Daniel Nsiah, Ms. Selina Christiana Twum, Mr. Aggrey, Mr. Pipim, Mr. Asiedu and Mrs Sophia Boatemaa for their immense help.



Finally, I thank all friends and family members for the diverse ways you have supported me in my education career. May God grant you the desires of your heart.

KNUST





## ABBREVIATIONS/ACRONYMS

ANC	-	Ante Natal Care
APH	-	Anti Partum Haemorrhage
C.I.	-	Confidence Interval
DHMT	-	District Health Management Team
ENRH	-	Efia Nkwanta Regional Hospital
GDHS	-	Ghana Demographic Health Survey
GHS	-	Ghana Health Services
HIV	-	Human immune Virus
KATH	-	Komfo Anokye Teaching Hospital
KBTH	-	Korle Bu Teaching Hospital
MOH	-	Ministry of Health
MM	-	Maternal Mortality
MMR	-	Maternal Mortality Ratio
OBS/GYN	-	Obstetric and Gynaecology
PPH	-	Post Partum Haemorrhage
PIH	-	Pulmonary Inflammatory Haemorrhage
RCH	-	Reproductive and Child Health
RHMT	-	Regional Health Management Team
STI	-	Sexually Transmitted Diseases



UNICEF

- United Nations Children's Fund

WHO

- World Health Organisation

# KNUST





## TABLE OF CONTENTS

## PAGE

DECLARATION.....	i
DEDICATION.....	ii
ACKNOWLEDGEMENT .....	iii
BBBREVIATIONS/ACRONYM.....	IV
Abstract .....	v-vi
Table of contents .....	Vii
List of figures .....	viii

## CHAPTER ONE

INTRODUCTION.....	1-4
PROBLEM STATEMENT .....	4-5
RATIONALE FOR THE STUDY.....	5-6
RESEARCH QUESTIONS.....	6
OBJECTIVES (MAIN & SPECIFIC).....	6
CONCEPTUAL FRAMEWORK.....	7-8
PROFILE OF STUDY AREA.....	9-14

## CHAPTER TWO

LITERATURE REVIEW .....	15-29
INTRODUCTION.....	15
THE TIME TREND OF MATERNAL DEATH.....	16-17



THE STRUCTURE OF MATERNAL DEATH AUDIT.....	17-19
THE PROCESS OF MATERNAL DEATH AUDIT.....	19-21
THE OUTCOMES.....	21-22
MATERNAL DEATH AUDIT.....	22-23
MANAGEMENT OF MATERNAL DEATH AUDIT REPORT....	24-27
CONFIDENCIALITYOF MATERNAL AUDIT.....	28
AUDIT STANDARDS.....	28-29
<b>CHAPTER THREE</b>	
METHODOLOGY.....	30
STUDY TYPE.....	30
STUDY VARIABLE.....	30
STUDY POPULATION.....	30
SAMPLE UNITS.....	30
SAMPLE SIZE.....	30
SAMPLING.....	31
DATA COLLECTION TECHNIQUE AND TOOLS.....	31
DATA HANDLING.....	32
DATA ANALYSIS.....	32
SCOPE OF THE STUDY.....	32-33
LIMITATION OF STUDY.....	33
ETHICAL CONSIDERATION.....	33



## CHAPTER FOUR

RESULTS.....	34-46
INTRODUCTION.....	34
PREVALENCE OF MATERNAL MORTALITY IN KATH.....	34-35
MATERNAL MORTALITY RATIO 2001-2003.....	35
LEADING CAUSES OF DEATH 2001-2003.....	36-38
MATERNAL DEATH AUDIT MANAGEMENT SYSTEM.....	38
BACKGROUND OF MANAGEMENT / STAFF.....	38-39
MATERNAL DEATH AUDIT STRUCTURE.....	39-40
MATERNAL DEATH AUDIT PROCESS.....	40-41
MATERNAL DEATH AUDIT OUTCOME.....	41-43
MANAGEMENT PERSPECTIVE.....	44
BACKGROUND OF MATERNAL DEATH RECORDS (2001-2003.....	45-46

## CHAPTER FIVE

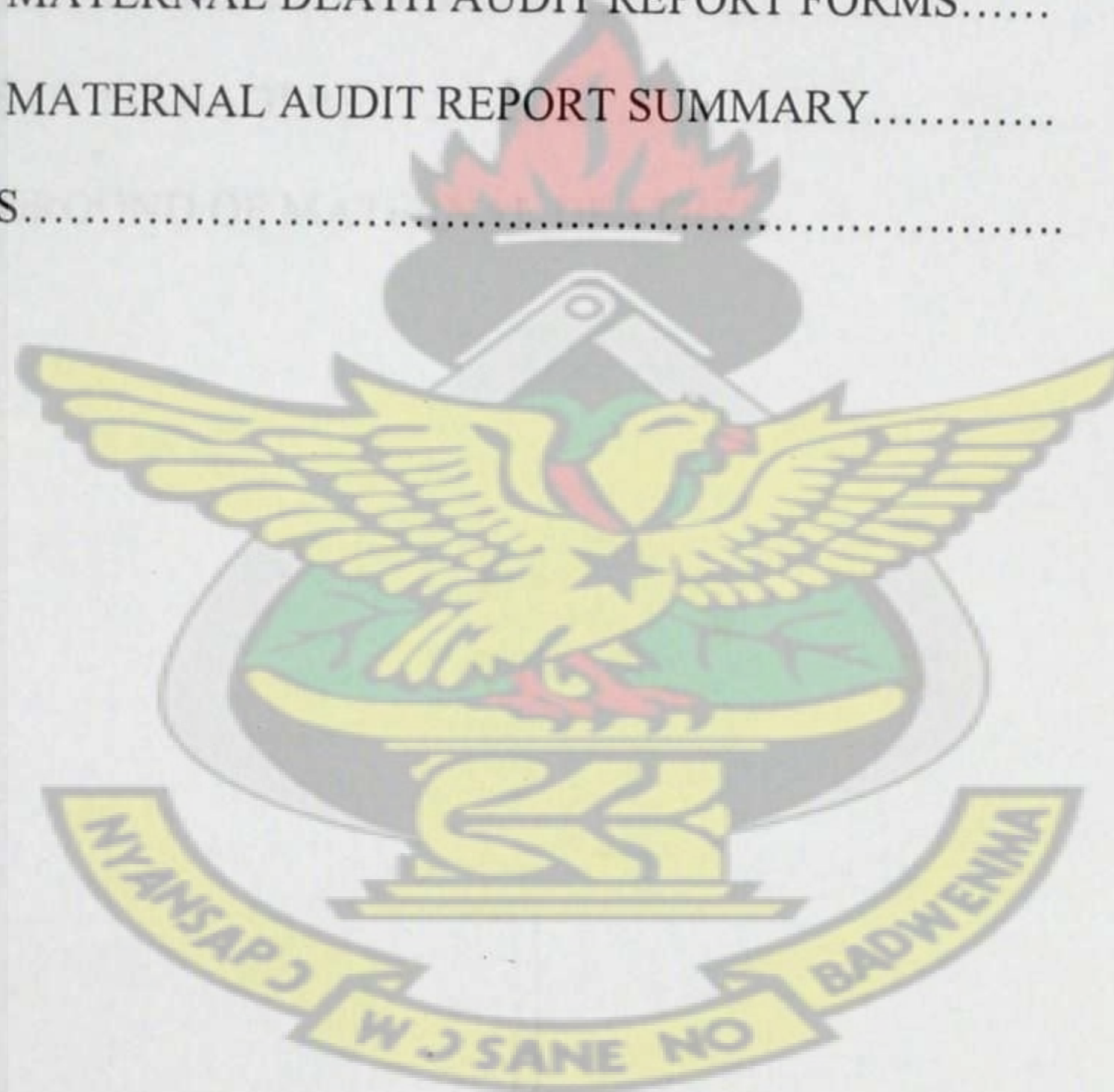
DISCUSSION.....	47-55
THE TIME TREND AND PREVALENCE OF MATERNAL MORTALITY IN KATH .....	47-50
MATERNAL MORTALITY RATIO.....	47-48
CAUSES OF MATERNAL MORTALITY.....	48-50
MATERNAL DEATH AUDIT MANAGEMENT SYSTEM.....	51
THE STRUCTURE (AUDIT COMMITTEE).....	51-52



PROCESS OF MATERNAL DEATH AUDIT.....	52-54
OUTCOME.....	54-55

## CHAPTER SIX

CONCLUSION.....	56-58
RECOMMENDATION.....	59-60
APPENDIX 1 QUESTIONNAIRE.....	61-64
APPENDIX 2 CHECKLIST.....	64
APPENDIX 3 MATERNAL DEATH AUDIT REPORT FORMS.....	65-68
APPENDIX 4 MATERNAL AUDIT REPORT SUMMARY.....	68
REFERENCES.....	69-70

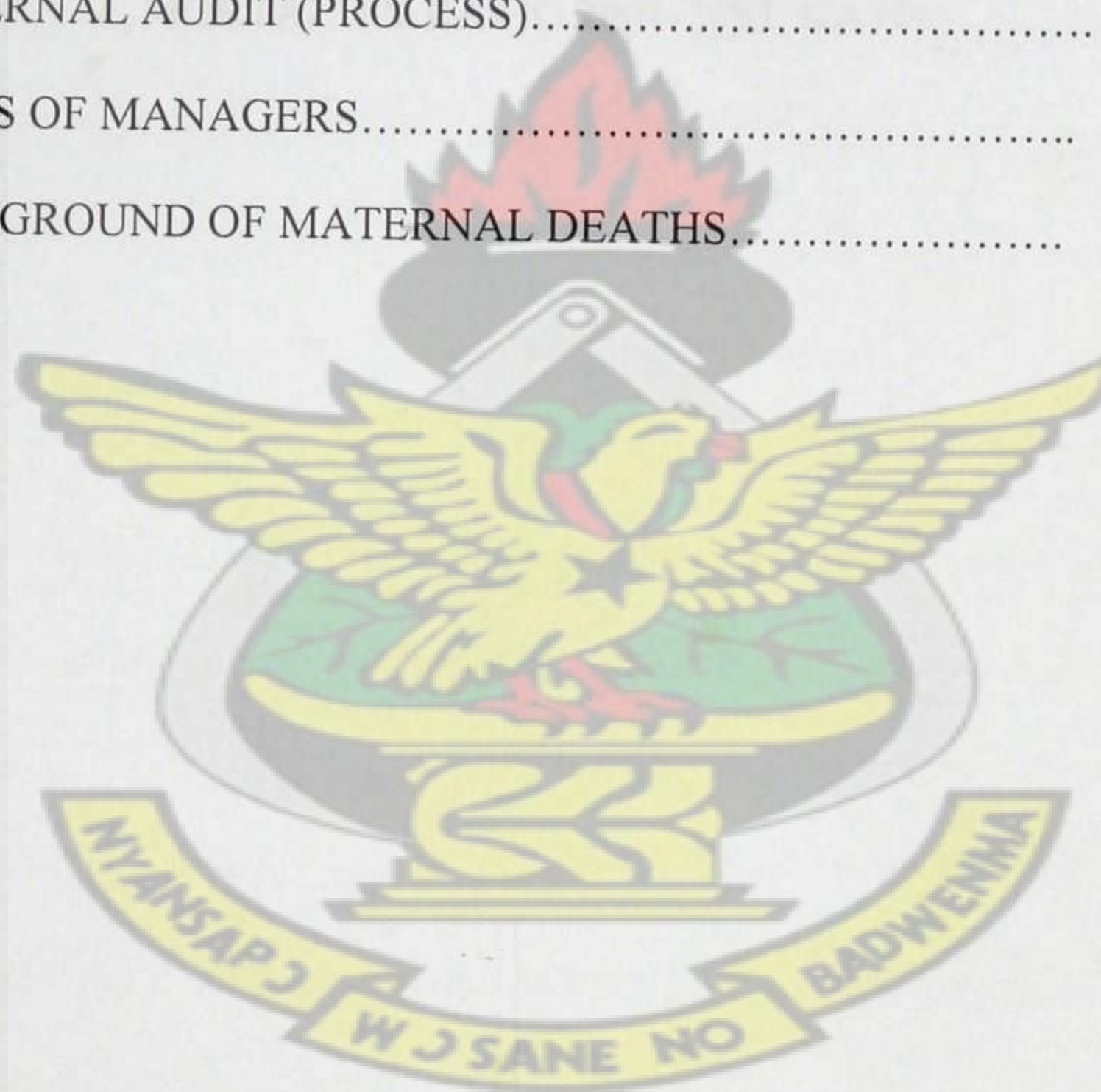


LIBRARY  
KWAME NKRUumah UNIVERSITY OF  
SCIENCE AND TECHNOLOGY  
KUMASI-GHANA



## LIST OF TABLES

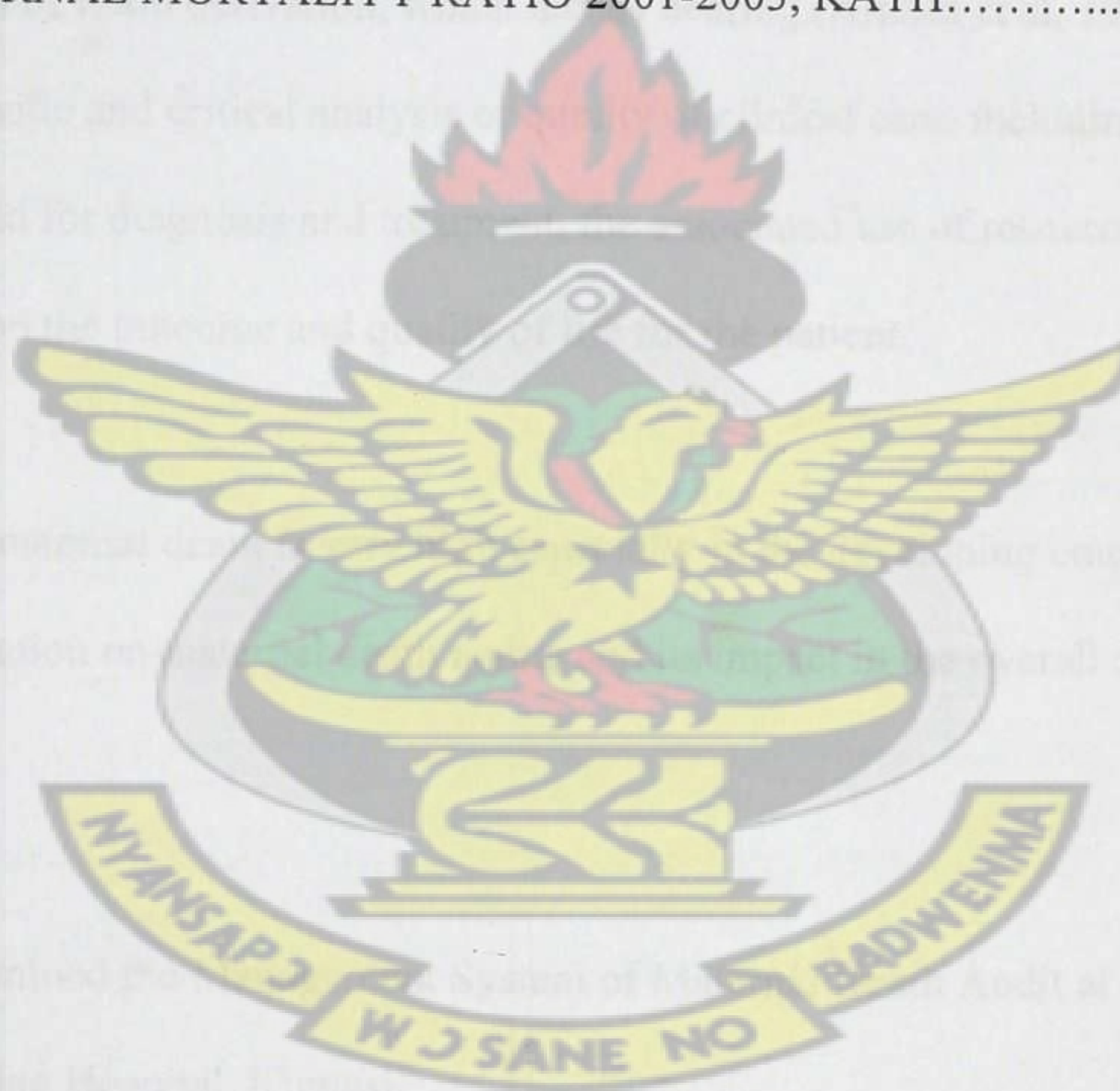
	PAGE
1.1 STAFF STRENGTH PER GRADE.....	11
4.1 TOP TEN CAUSES OF DEATH 2001-2003.....	37
4.2 BACKGROUND OF STAFF.....	39
4.3 MATERNAL DEATH AUDIT (STRUCTURE, PROCESS AND OUTCOME).....	42
4.4 MATERNAL AUDIT (PROCESS).....	43
4.5 VIEWS OF MANAGERS.....	44
4.6 BACKGROUND OF MATERNAL DEATHS.....	45





## LIST OF FIGURES

	<b>PAGE</b>
1.1 CONCEPTUAL FRAMEWORK: ASSESSING MATERNAL DEATH AUDIT SYSTEM.....	7
1.2 MANAGEMENT STURCTURE O&G.....	10
2.1 AUDIT CYCLE.....	20
4.1 TREND OF PREVALENCE OF MATERNAL MORTALIT AT KATH 2001-2003.....	36
4.2 MATERNAL MORTALITY RATIO 2001-2003, KATH.....	36





## ABSTRACT

Maternal death is defined as the death of a woman pregnant or within 42 days following termination of pregnancy, irrespective of duration and site of the pregnancy, from any cause related to or aggravated by pregnancy or its management but not from accidental or incidental causes. (Suleiman, 1999).

Medical Death Audit is an integral part of modern medicine (Irish Medical Journal, 2001). Audit is of Latin derivation, which means hearing (Arnold et al, 1992). Clinical audit is systematic and critical analysis of quality of clinical care, including the procedures used for diagnosis and treatment, the associated use of resources and the effect of care on the outcome and quality of life for the patient.

Even though, maternal death is very high especially in the developing countries including Ghana, information on maternal death audits and its impact in the overall quality of health care.

This study examined the Management System of Maternal Death Audit at Komfo Anokye Teaching Hospital, Kumasi.

The objective of the study included examining the structure, process and outcome of maternal death audit at KATH so as to give recommendation to improving maternal death thereby reducing maternal mortality.



A descriptive study with a cross-sectional design, a total of fifty management/staff was interviewed with a questionnaire. Also a checklist was designed to review one hundred and eighty nine (189) cases of maternal deaths that occurred from 2001-2003.

The findings showed the average maternal mortality ratio at KATH is 9.51/1000 live births. There is no Maternal Audit Committee at KATH that reviews maternal deaths. In fact, it was found that meeting termed "maternal conference" are rarely organized. Such meeting was held only once. Proceedings of such meeting are not recorded neither are standard forms used to review maternal deaths. From the study, it was evident that there were no dissemination of findings of such meetings and therefore no feedback. This is at the peril of improving maternal health.

The practice at KATH was found to be at variance with what has been prescribed by the Ministry of Health as enshrined in the Maternal Death Audit Guidelines document, 2002.

Appropriate recommendations have been made to Management, Staff and other stakeholders at KATH to improve the practice of auditing maternal death so as to reduce the high maternal mortality at the hospital.



# 1.0 BACKGROUND INFORMATION

The first part of this chapter is devoted to a brief history of the institution. It is followed by a description of the various departments and their functions. The third part of the chapter is devoted to a description of the various facilities available to the students. The fourth part of the chapter is devoted to a description of the various activities carried out by the institution.

# KNUST



**L. BRARY**  
**KWAME NNAMANI UNIVERSITY U.**  
**SCIENCE AND TECHNOLOGY**  
**KUMASI-GHANA**



## CHAPTER ONE

### 1.0 BACKGROUND INFORMATION

Complications of pregnancy, childbirth and unsafe abortion are a major cause of death for women of reproductive age in Ghana. The national maternal mortality rate is estimated at around 200 maternal deaths per 100,000 live births, although rates vary widely by district and region; one study in a northern district found a maternal mortality rate of over 800 per 100,000 live births (Maternal Death Audit Guidelines, 2002).

The factors that contribute to maternal mortality are categorised into direct and indirect obstetric factors (Osei-Nketiah, 2001). The direct obstetric causes include haemorrhage, eclampsia, abortion, infection and obstructed labour (Collier et al., 1994; Lassey et al, 1998; WHO/UNICEF, 1999). The indirect causes include maternal age, maternal height and early and repeated pregnancies. Others are malnutrition, anaemia, low socio-economic status, and medical conditions such as sickle cell disease, hypertension, diabetes mellitus and heart diseases (Osei-Nketiah, 2001).

It is known that each time a woman in one of the world's poorest countries becomes pregnant, her risk of dying from that pregnancy is as much as 200 times greater than the risk for a woman in the United States or Europe. (WHO/UNICEF, April 1996; WHO, 1999). Because of the high fertility rate, poor health conditions in general and inadequate availability of medical care, the risk of pregnancy are higher in Africa than anywhere else on earth. An African woman's chance of dying from pregnancy-related causes, (obstructed labour, postpartum haemorrhage, pregnancy-induced hypertension and eclampsia, infection, and unsafe abortion) average 870 per 100,000 live births



(Osei-Nketiah, 2001). In contrast, the risk of maternal death in industrialized nation's averages 27 per 100, 000 live births. All women, whether their pregnancies are complicated or not, need good quality maternal health services during pregnancy, delivery and in the postpartum period to ensure their health. High quality of maternal health services must be appropriate for and acceptable to the women who need them.

Maternal death is defined as the death of a woman pregnant or within 42 days following termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes. (Suleiman, 1999)

Maternal death is the death of a woman during pregnancy, labour and puerperium. (Author, 2004).

Medical Audit is an integral part of modern medicine (Irish Medical Journal, 2001). Audit is of Latin derivation, which means hearing (Arnold et al, 1992). Clinical audit is the systematic and critical analysis of the quality of clinical care, including the procedures used for diagnosis and treatment, the associated use of resources and the effect of care on the outcome and quality of life for the patient (<http://www.scot.nhs.uk/crag/publications/icam/ibca>) ([http://www.mma.org.my/info/4-audit\\_98\\_hm](http://www.mma.org.my/info/4-audit_98_hm))

Audit depends on standards (or protocols, or treatment guidelines) and written records. Every practice or procedure in a medical facility should be governed by a standard from the treatment of life-threatening complications to cleaning of wards to respecting patients' privacy. Written records are essential to almost all audits of clinical practice and



most audits of administrative procedures such as management of pharmaceutical supplies (WHO, 2003).

In obstetrics, the report of the confidential enquiries into maternal mortality is an audit of maternal care. The maternal mortality rate in developed countries is not an accurate reflection of the quality of care of most pregnant women because of the rarity of maternal death (Petros et al, 1995) (Royston et al, 1992) (Drife, 1993). A more sensitive indicator of the quality of maternal obstetric care is the rate of severe acute maternal morbidity. It has been suggested that "near miss" maternal mortality, defined as women requiring transfer to an intensive care unit, is a more comprehensive supplement to the information provided by review of maternal death. (Fitz et al, 1992) and quoted in (<http://www.imj.ie/news-details.php?nNewsId>). Audit of severe acute maternal morbidity permits the development of preventative programmes, education and resources allocation, which would reduce both maternal morbidity and mortality. Research is concerned with discovering the right thing to do and audit is ensuring that it is done right.

In clinical audit there are **PRINCIPLES** of good conduct binding doctors in their practice.

These include:

- Assuming overall responsibility for the care of the patient,
- The system should be professionally led, with a local clinical audit advisory committee chaired by senior health care professionals. Local circumstances will dictate the need for separate uni-professional audit subcommittees
- The overall form of audit should be agreed locally between the professionals and management which itself need to know that an effective system of clinical audit is in place and that all clinical services undergo regular review, as locally agreed (<http://www.mma-org.my/info/4>) ([http://www.show.scot.nhs.uk/crag/publications/icam/ibca\\_03.htm](http://www.show.scot.nhs.uk/crag/publications/icam/ibca_03.htm)).



- Ensuring that the appropriate choice of treatment is based on sound scientific evidence,
- Ensuring confidentiality of patient information,
- Confidentiality issues in relation to medical reports,
- All professional health staff should participate in regular systematic clinical audit.

## 1.2 PROBLEM STATEMENT

Maternal Death is high in Ghana though MOH/GHS have put in place some strategies to improve maternal health there is relatively adequate knowledge about most of the strategies, there is little for maternal death audit. Documentation of maternal death audit findings on maternal audit forms A and B is rare.

The national target of reducing MMR from 214 /100,000 live births to 100/100,000 live births by the year 2001 was not achieved though year 2003 recorded 205/100,000 live births (2003 Annual Report, Reproductive and Child Health). A second look was taken and a target was again set by MOH in its five year Program of Work (2002-2006) to decrease MMR from 214/100,000 live births (Ghana Demographic Health Survey, 2003) to 150/100,000 live births by the year 2006.

Maternal audit is aimed at improving practices and standards of the health services. It is therefore crucial in efforts to achieving maternal deaths targets through the prevention of maternal deaths.

In Ghana, data on rate of maternal audits in health institutions are rare and few of these are reported. For instance, in 2003 whereas Upper West region audited all reported maternal deaths, Volta region audited the least (only 55%). The rate for Ashanti Region



and KATH were not captured in the RCH/MOH Annual report 2003. It is imperative that, to improve maternal services, systems put in place to audit maternal deaths are examined so as to improve the structures for quality maternal care.

There is a national guideline for health institutions to follow when conducting maternal death audit. The organisation of maternal audits at all levels is well stipulated in this national protocol. There is however the need to have a broadened knowledge of the implementation of the guidelines at the facility level. This study is therefore to examine the Management System of Maternal Death Audits at KATH using the MOH guidelines as reference.

### 1.3 RATIONALE FOR THE STUDY

In pursuit of improving maternal health, MOH/GHS has put in place some strategies to reduce maternal deaths. The strategies, which seek to make maternal health ideal, are Safe Motherhood initiative which includes antenatal care, safe delivery and postnatal care, family planning, prevention and management of unsafe abortion, prevention and management of STI/HIV/AIDS, Increase of access to health facilities, and maternal death audit (RCH Annual Report, 2003).

This study would therefore improve the knowledge of maternal death audit in practice – in terms of structures, processes and outcomes. This hopefully, will awaken the interest of Government Agencies particularly, KATH, GHS and MOH on the need to re-examine the conduct of Maternal Death Audit and its relevance to improving quality of care, thereby reducing maternal deaths. It is also expected that the results of the study, will not only benefit government and its agencies but also Non-Governmental Organisations



and International Agencies (i.e. WHO, UNICEF, etc) alike. In summary, this study will contribute immensely to reduce maternal deaths in Ghana.

#### 1.4 RESEARCH QUESTIONS:

1. What is the time trend of maternal deaths at KATH?
2. What are the structures for maternal deaths audit at KATH and are they in accordance with MOH guidelines?
3. What process or procedures are used for maternal death audits?
4. What are the outcomes of the system of maternal death audits?
5. Are the recommendations made in maternal death audit implemented?

#### 1.5 OBJECTIVES

##### 1.5.1 Main Objective;

- To assess the Maternal Death Audit Management System at KATH using the Ministry of Health (MOH) protocols as reference.

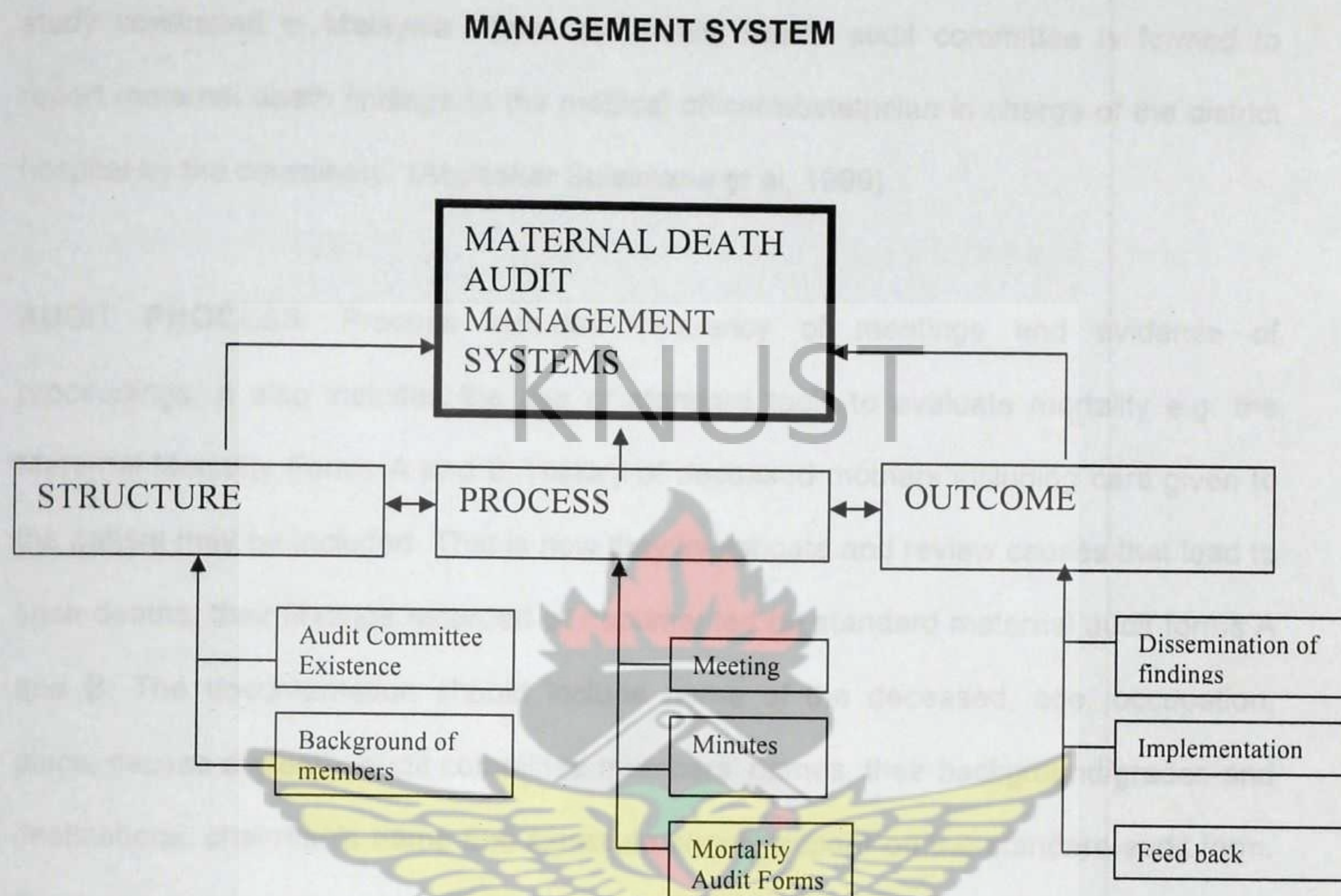
##### 1.5.2 Specific Objectives

1. To determine the time trend of maternal death in KATH.
2. To identify the structures put in place at KATH.
3. To identify procedures and processes of the committee as compared to MOH guidelines.
4. To assess the outcomes of their proceedings i.e. the dissemination of findings and many others and in relation to MOH guidelines.
5. To make recommendations on maternal death audit.



## 1.7 CONCEPTUAL FRAMEWORK

Fig 1.1 Conceptual framework: ASSESSING MATERNAL DEATH AUDIT



Source: Author 2004

**AUDIT STRUCTURE:** Structure consists of the existence of the audit committee within the framework of the management of maternal cases in the hospital. The committee members should also consist of multidisciplinary background, but specifically should reflect those who are directly involve in maternal health. Maternal Death Audit as prescribed in the Maternal Health/Audit Guidelines (MOH) should be in place a Maternal Death Audit Committee. The Audit Committee should consist of the Medical Superintendent, Midwife, Nurses, Biostatistician, Record Keeper, Pharmacist, Matron and



the doctor/nurse who happens to be on duty. The Audit Committee is supposed to meet within 24 hours of any maternal death to discuss the cause of the said death and to disseminate findings to health providers for its implementation. This is evidenced in a study conducted in Malaysia where community health audit committee is formed to report maternal death findings to the medical officer/obstetrician in charge of the district hospital by the coordinator (Abubakar Suleimana et al, 1999).

**AUDIT PROCESS:** Process includes frequency of meetings and evidence of proceedings. It also includes the use of standard tools to evaluate mortality e.g. the Maternal Mortality Forms A and B. History of deceased mothers including care given to the patient may be included. That is how they investigate and review causes that lead to such deaths, their findings recorded or documented on standard maternal audit forms A and B. The documentation should include name of the deceased, age, occupation, place, causes of death, audit committee members' names, their background/grades and destinations, chairman's name and signature should appear on the standard audit form. The findings during committee meetings should be disseminated to health providers.

**AUDIT OUTCOME:** Audit outcome is the aggregate of the structure and the process. How findings are disseminated to health providers and implemented to prevent future occurrence. It is important to provide feedback to staff, to discuss where additional improvements could be made, and to compliment staff on improvements that have occurred.



## PROFILE OF THE STUDY AREA

Sited in Kumasi, the Ashanti Regional capital, Komfo Anokye Teaching Hospital, is the second teaching hospital of Ghana. It serves people in the northern sector of the country and some from the Eastern, Western and Volta regions of Ghana. Its targeted population therefore extends widely across the country.

As a teaching hospital, it provides specialist care in Medicine, Surgery, Paediatrics, Radiotherapy and Oncology. The other services are Physiotherapy, Diagnostics, Dental-Eye-Ear-Nose and Throat (DEENT), Obstetrics and Gynaecology and many others. There are several specialised units under these specialised areas.

With over 1000-bed capacity, the hospital also serves as a training centre for Doctors, Nurses, Midwives, Anaesthetics and other health professionals.

A Hospital Board that appoint the Chief Executive and nine other Top Managers manages the hospital. The Administrative structure of the hospital comprises 12 Directorates with 9 being clinical and the rest non-clinical.

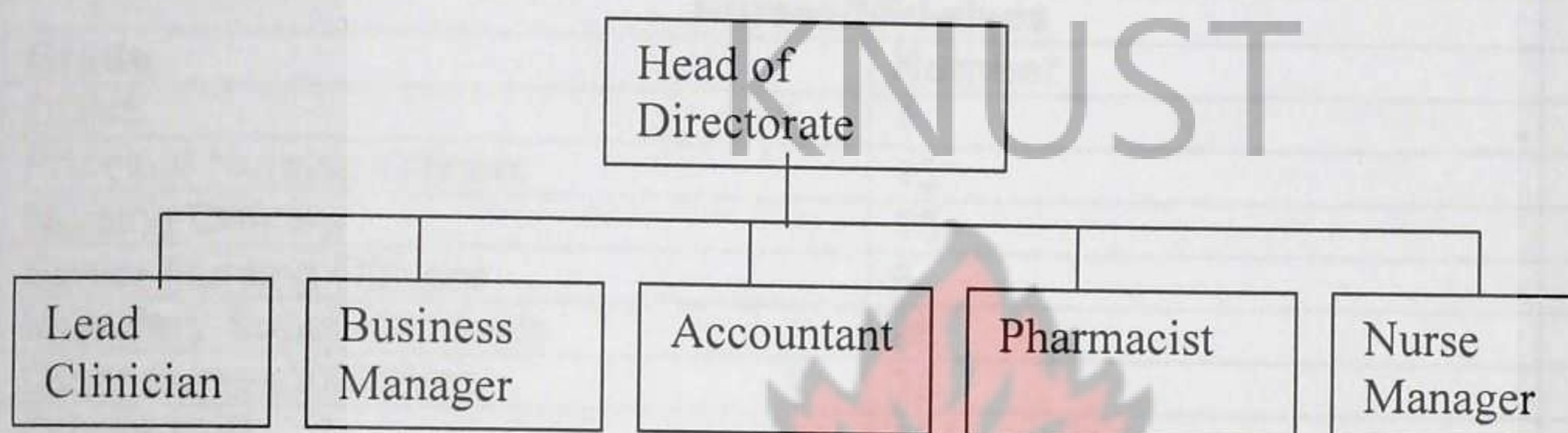
The Obstetrics and Gynaecology Directorate is responsible for maternal health care of the hospital therefore an elaborate background is given below for the purpose of this study.



## OBSTETRICS AND GYNAECOLOGY DIRECTORATE

The management structure at the directorate level as shown in fig.1.1 has a Head of the directorate supported by a Lead Clinician, Accountant, Nurse Manager, Business Manger and a Pharmacist.

Fig 1.2: Management structure of O&G



The units in the directorate that directly link to reducing maternal deaths are Family Planning Units, a three-room theatre, nine consulting rooms, five wards and a labour ward.

Services provided at the directorate include specialist care in:

- Outpatient and In-patient obstetrics and Gynaecology care (Antenatal and post-natal care, specialist Obstetrics and Gynaecological clinics etc).
- Family Planning
- In-patient care



As shown in table 1.1 the directorate has over three hundred staff majority of whom are nurses and midwives.

Table 1.1. Staff strength per grade

Doctors	
Grade	Number
Specialist	14
Principal Medical Officers	11
Senior Medical Officers	19
Medical Officers	27
Nurses/Midwives	
Grade	Number
DDNS	1
Principal Nursing Officers	13
Nursing Officers	18
Senior Nursing Officers	5
Midwifery Superintendents	98
Other nurses/midwives	20
Others staff	131
Total	367

Source: KATH Profile

Seven (7) staff members were on study leave during the year outside the core functional area. Three (3) in anaesthetic and intensive care, two (2) in the public health and two (2) in Ear Nose Throat (ENT) nursing. In addition there were seven (7) resignations, four compulsory retirements, two vacated their posts and one was on leave without pay.

#### • VISION

In line with the vision of the hospital, the Obstetrics & Gynaecology directorate envisioned that in the next three years, it would become the centre of excellence in the provision of quality Obstetric and Gynaecological care and providing specialist outpatient (O.P.D) care comparable to any international standard.



The directorate's mission is to meet customer satisfaction to the best of its ability. The department hopes to do this through the continuous education and motivation of its staff.

- **OBJECTIVE FOR 2004**

1. To curb the influx of visitors to the wards, theatre and labour ward at unauthorised times.
2. To improve on the general attitude of staff towards; work, Patients, colleagues and superiors.
3. To ensure 98% drug availability at all times.
4. To improve upon the hygienic environment in the directorate.
5. To improve on security and protection

**Management Meeting:** - The directorate conducts monthly management meetings about the administration of the department

**Clinical Meetings (early morning meetings):** Review cases of the previous day and discussions and comments are made on their management. No minutes are recorded on such meetings usually attended by clinicians.

**Obstetric & Gynaecology Protocol:** The directorate has come up with protocols as to the handling and management of cases reported to it. The protocol spells out in clear terms, the management procedures that clinicians are to follow. Copies of the document are available to clinicians for use.



**Performance Review:** - The management participates in the hospital quarterly performance review sessions. However this is not done locally. Workshops and seminars were held for staff by Kath to upgrade staff skills and performance.

# **COMPARATIVE STATISTICS FOR THE DIRECTORATE** **BED COMPLIMENT FOR VARIOUS UNITS**

WARDS	YEAR 2002	YEAR 2003
-------	-----------	-----------

A1	38	38
A2	35	35
A3	35	35
A4	21	21
A5	12	12

**TOTAL BED COMPLIMENT 141**

## **ADMISSIONS**

A1	4945
A2	5715
A3	4061
A4	2494
A5	684

<b>TOTAL ADMISSIONS</b>	<b>17899</b>
-------------------------	--------------



## DISCHARGES

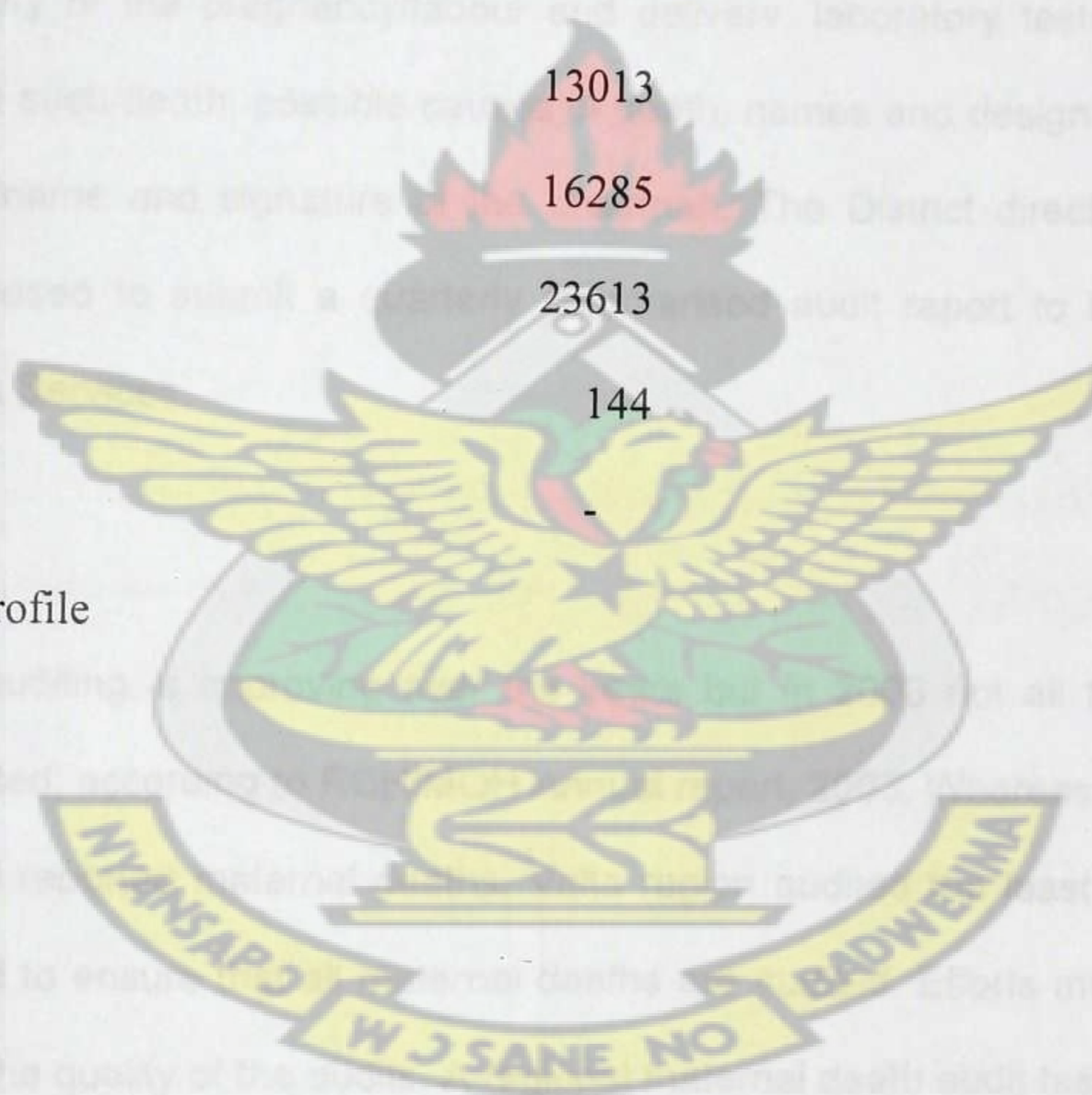
A1	4933
A2	5407
A3	3775
A4	1448
A5	777

## KNUST

## PATIENT DAYS

A1	13013
A2	16285
A3	23613
A4	144
A5	-

Source: KATH Profile





## CHAPTER TWO

### 2.0 LITERATURE REVIEW

#### 2.1 Introduction

The national (MOH) protocol on maternal death audit provides a format of reporting on maternal death findings. The standard reporting is supposed to be on maternal death forms A and B. These forms require the audit committee to enter inter alia, the name of the deceased, her age, home address, educational status, occupation, date and time of arrival, time and place of death, gestational age, gravidity, number of antenatal attendance, history of the pregnancy/labour and delivery, laboratory tests conducted, events that led to such death, possible causes of death, names and designation of audit team members, name and signature of the chairman. The District director of Health Services is supposed to submit a quarterly summarised audit report to the Regional Director of Health Services.

Maternal death auditing is improving over the years but in 2003 not all the maternal deaths were audited, according to RCH/MOH Annual report, 2003. Whereas Upper West region audited all reported maternal deaths, Volta region audited the least (only 55%). There is the need to ensure that all maternal deaths are audited. Efforts must be made to improve upon the quality of the audits. A regional maternal death audit task force must be set up and supported to ensure that all maternal deaths are audited and to improve on the quality of the audits.



## 2.2 The time trend of Maternal Deaths

Each year more than 20 million women experience ill-health as a result of pregnancy and more than 500,000 women were estimated to have died in 1995 as a result of causes related to pregnancy and child-birth (WHO, 2001). Almost all of these deaths, 99% occur in developing countries, particularly Africa.

Among the factors that negatively affect the life of women are the complications of child bearing. These may occur during pregnancy, labour or the first six weeks (42 days) after delivery (puerperium) or abortion. Deaths of this nature, are referred to as Maternal Mortality (International Federation of Gynaecology and Obstetrics) and when it is expressed as the number of maternal deaths per 100,000 live births, it is referred to as Maternal Mortality Ratio (Osei-Nketiah, 2001)  $\text{Number of maternal deaths in a year} / 100,000 \text{ live births}$ .

In Ghana, there has been some achievement over the past three decades with the maternal mortality rate falling from 1100 / 100,000 live births in 1969{Ampofo, 1969} to 734/100,000 live births reported in a recent study of trends in maternal mortality at Korle Bu Teaching Hospital (Lassey. and Wilson, 1998) as quoted in Ghana Medical Journal September 2000 by (Aboagye and Akosa, 2000).

The Ghanaian national maternal mortality rate for 1993-1994 was 219/100,000 live births for rural areas and 212/100,000 live births for urban areas (Ghana Demographic Health Survey, 1994) The maternal mortality rate for the developed world was 26 per 100,000 live births in 1998 (WHO). At the end of the year 2003, Ghana's maternal mortality rate stood at 205 per 100,000 live births (RCH Annual Report, 2003).



Maternal death is a worldwide problem particularly in the developing countries like Ghana. In Ghana, institutional maternal mortality ratio (MMR) for 2003 was 205/100,000 live births. Though the nation recorded a significant fall from 260/100,000 live births in 2001 (RHC Annual Report), the national target (objective) of decreasing MMR from 214/100,000 live births (GDHS, 1993) to 100/100,000 live births by the year 2001 was not achieved as enshrined in MOH's five year (1997-2001) Program of Work (RCH Annual Report, 2003).

The MMR target of 180/100,000 live births was not achieved. Eight hundred and fifty four (854) institutional maternal deaths were recorded in 2003. This represents a maternal mortality ratio of 205/100,000 live births higher than the 2002 ratio of 204/100,000 live births (RCH Annual Report, 2003). Eastern Region had the highest MMR of 263/100,000 live births. Central Region had a reduction in MMR from 600/100,000 live births in 1999 to 159/100,000 live births in 2003. Volta Region also had a reduction from 420/100,000 live births in 1999 to 256/100,000 in 2003. Though there is a significant reduction in MMR over the years, Ghana's MMR is high as compared to developed countries. According to a report, the MMR in the developed world is not an accurate reflection of the quality of care of most pregnant women because of the rarity of maternal death ([http://www.imj.ie/new\\_detail.php?nNews](http://www.imj.ie/new_detail.php?nNews)).

### 2.3 The Structure for Maternal Death Audit

Audit structure is the availability and quality of inputs needed to carry out an activity or deliver a service. It also refers to how well the inputs are organised to achieve set objectives. Inputs include physical infrastructure, personnel resources and other material



resources, which enhance good health delivery. In maternal death audit, the structure includes the setting up of audit committee to review maternal mortalities that may occur at the health facility. The Audit Committee should consist of the Medical Superintendent, Midwife, Nurses, Biostatistician, Record Keeper, Pharmacist, Matron and the doctor/nurse who happens to be on duty (Maternal Health/Death Audit Guidelines, 2001). The Audit Committee is supposed to meet within 24 hours of any maternal death which had occurred in the facility to discuss the cause(s) of the said death and to disseminate findings to health providers for their implementation. This is evidenced in a study conducted in Malaysia where community health audit committee is formed to report maternal death findings to the medical officer/obstetrician in charge of the district hospital by the coordinator (Abubakar Suleimana et al, 1999) and also in Australia where the audit committee should include representatives from obstetrics, neonatology/paediatrics, pathology, midwifery, neonatal nursing and other relevant medical specialists and allied health professionals (Maternal and Perinatal mortality Audit Guidelines, 2001)

Maternal death audit committees at local, provincial, and national levels play a critical role in determining how and why a woman died and whether or not the death could have been prevented. Verbal autopsies and stakeholder participation are also important components of the system. While these committees are common at the national level, few exist within communities where audits take place (WHO, 2003). Structure refers to the organisation and management of the health facility as it affects patient care. A research conducted in Latin American countries shows that only 18 countries had a functioning committee at the national level, and 5 countries had functioning committees at the local level, but with minimal community participation including women. Only 6 countries declared having a representative from the community on the committee.



Verbal autopsies are rarely used, and information on maternal mortality is not discussed at the local level or used for decision -making (WHO, 2003)

## 2.4 The process of Maternal Death Audits

Audit process refers to the actions taken by all those involved in the aspect of care that is being audited. Process refers to the clinical care patients receive. Audit Process includes how the maternal death audit committee works. That is how they investigate and review causes that lead to such deaths, their findings recorded or documented on standard maternal audit forms A and B. The documentation should include name of the deceased, age, occupation, place, causes of death, audit committee members' names, their background/grades and destinations, chairman's name and signature should appear on the standard audit form. The findings during committee meetings should be disseminated to health providers in the health facility.

This is evidenced in a study conducted in Australia where it stated that a feed back process needs to be in place so that individual practices and hospital policy can be improved as a result of the review process and also a confidential national maternal death reporting form should be completed for any maternal death and forwarded to the appropriate zonal maternal and perinatal committee (Australian Institutional Maternal and Perinatal Mortality Review Guidelines 2001). Each maternity unit should review all maternal and perinatal deaths in order to ascertain the cause of death and to assess the presence of potentially avoidable or contributing factors.



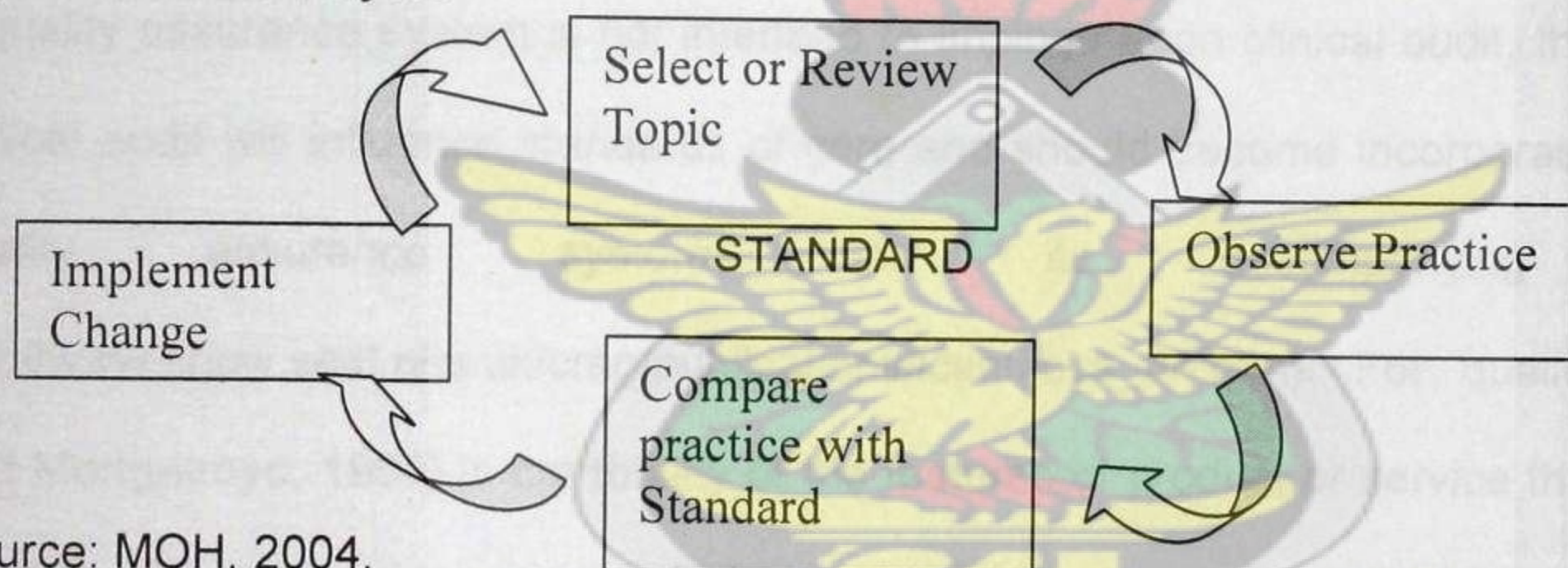
During the process of maternal death audit, a topic is selected or reviewed by the audit committee, and then the committee observes practice and compares practice with standards and implements change when necessary.

Audit is a cycle that goes through four steps to complete. These are:

- Select or review topic
- Observe practice
- Compare practice with standards
- Implement change.

It is important to note that these steps are based on standards the health system operates on.

Fig 2.1 the Audit Cycle



Source: MOH, 2004.

Members of the practice must consider when they will next repeat an audit and the details of such audit must be agreed and must take into account of the many lessons learnt from the previous meeting. There should be a set standard for practitioners to operate on. Standard set should be at a level by which is acceptable for the proper care of the patient.



The strength of audit is its cyclical nature and the opportunity that it provides for measuring the effects of changes in practice routine that have been stimulated by previous audit procedures.

## 2.5 The outcomes of Maternal Death Audit

Outcome is the end result of health care, and health care may be described as the product of the structures (the resources that are available) plus the process (the activities of the health care workers concerned). These outcomes are expressed in terms of the patients' health status or physical or social function. Outcome refers to types of cases in which care is audited (such as maternal deaths, 'near misses,' all complications, all normal deliveries, all cases of eclampsia). While management audit of a quality assurance system is not intended to impinge upon clinical audit, the results of clinical audit will influence standards of care and should become incorporated into that quality assurance system and its accompanying manual ([http://www.show.scot.nhs.uk/crag/publications/icam/ibca\\_04.htm](http://www.show.scot.nhs.uk/crag/publications/icam/ibca_04.htm)). For quality (Morgan and Mortgatroyd, 1994) is the totality of the features of product or service that bears on its ability to satisfy given needs. Outcome quality is the end result of health care and health care may be described as the product of the structures (the resources that are available) plus the process (the activities of the health care workers concerned). These outcomes are expressed in terms of the patient's health status or physical or social functions.

Showing that an audit can have an impact on outcomes provides important support for the creation of permanent structures that allow health care providers to discuss and evaluate their work. A focus on the audit process itself as a technique for attaining



improved standards also provides a justification for auditing not only deaths but offer other clinical situations where quality of care improvements are possible (<http://www.inserm.fr/ethique/cours.nsf/o/>) and prevent their occurrence.

## 2.6. Maternal Death Audit

Due to this high maternal mortality rate, a review of such deaths to improve on maternal health is necessitated. Audit is of Latin derivation, which means 'hearing' (Arnold C.W.B et al, 1992). Medical Audit is an integral part of modern medicine ([http://www.imj.ie/news\\_detail.php?nNewsId/](http://www.imj.ie/news_detail.php?nNewsId/)). Clinical Audit is the systematic and critical analysis of the quality of clinical care, including the procedures used for diagnosis and treatment, the associated use of resources and the effect of care on the outcome and quality of life for the patient. ([http://www.mma.org.my/info14\\_audit\\_98.htm](http://www.mma.org.my/info14_audit_98.htm))(<http://www.show.scot.nhs.uk/crag/publications/icom/ibca>). Audit ensures that, the right thing is done right.

Medical audit is an attempt to improve the quality of medical care by measuring performance of those providing that care, by considering the performance in relation to desired standards and by improving on this performance (Marshall, 1990). Audit is about taking note of what we do, learning from it, and changing it if necessary. Medical Audit is the improvement in quality of care through standard setting, peer review, implementation of change and re-evaluation (Arnold et al. 1992).

The word "audit" is often used to refer to a wide range of methods for monitoring and reporting in health outcomes as well as the structures or the process of care (<http://www.abdn.ac.uk/impact/cbca/whatchbca.htm>). A clinically-led initiative which seeks to improve the quality and outcome of patient care involves structured peer review,



whereby clinician examine their practice and results against agreed standards, and modify their practice where indicated (Shaw, 1992). A commitment to do better, in other words, to constantly seek areas for improvement and to act upon the findings of audit and the acceptance of the concept of best practice or evidence-based practice. In this concept the word "clinical" applies to the work of doctors, midwives, nurses and other health professionals. Clinical audit is thus an essential part of quality assurance and is built upon two main principles. They are critical incident/adverse event clinical audit and criterion-based clinical audit. (<http://www.abdn.ac.uk/impact/acca/whatchbca.htm>).

One of the earliest examples of medical audits goes back to 1912 when the American college of surgeons required applicants for fellowships to submit 50 records for inspection. The poor response to this request led to a proper procedure for keeping records being devised (Arnold et al, 1992). In Scotland, audit has been taking place for a number of years under a variety of guises.

Also he discovered that many women in the lower class had poor diets in childhood and in adolescent as well as during pregnancy. This explained why small women had stillbirth and neonatal death rates about twice those of tall women; amongst small women those in poor general health had higher rates than those who are fit. This led to better antenatal care and a more informed approach to family planning.

The term maternal death audit is broad and is used to describe maternal death case reviews, confidential enquiries, and maternal death surveillance (<http://www.abdn.ac.uk/impact/cbca/whatchbaca.htm>). In obstetrics, the report of the confidential enquiries into maternal mortality is an audit of maternal death ([http://www.imj.ie/new\\_detail.php?nNewsId](http://www.imj.ie/new_detail.php?nNewsId)).



## 2.7 Management Of Maternal Death Audit Report

At the district level, the District Health Management Team (DHMT) should discuss audit quarterly reports from its institutions, prepare quarterly audit summary report to region and must send feedback to institutions concerned. Regional level must review quarterly district audit reports at Regional Health Management Team (RHMT) meetings, send quarterly summary audit reports to the national level and send feedback to the DHMT.

The national level must review all regional audit reports at a special constituted committee meeting of technocrats. The reproductive and child health unit must be responsible for this section, send feedback of recommendations to RHMT. The national level should incorporate the national audit summary report in the annual reproductive and child health report.

Audit is a valuable tool for monitoring the standards of client care being delivered by doctors, midwives and other members of the health team at different levels of the health delivery system. It is also needed for setting standards for provision of care. Different sources of information are needed for enhancing audit. Good record keeping and motivated health workers also enhance process of auditing.

The stated objectives of maternal death audit by the MOH are as follows:

- Evaluate services and provide feedback
- Plan and formulate policies for the improvement of maternal health services
- Improve recommended strategies and policies.



In view of the above objectives, MOH strongly recommends the formation of audit committees at all health institutions especially first and second levels. Below are MOH guidelines for members of the maternal death audit committee as regards to first and second referral level health facilities.

#### First referral level health facility (District Hospital)

- ❖ Head of maternity unit – chairperson
- ❖ All medical officers in the hospital
- ❖ Midwifery staff (antenatal, delivery, postnatal and family planning)
- ❖ District public health nurse or representative
- ❖ Anaesthetist
- ❖ Obstetrician (if available)
- ❖ Head of laboratory
- ❖ Head of pharmacy
- ❖ Hospital matron – secretary
- ❖ Hospital administrator

#### Second level health facility (Regional Hospital)

- ❖ Departmental head (obstetrician/gynaecologist if available) – chairperson
- ❖ Medical officers
- ❖ Midwives in the obstetric & gynaecology department
- ❖ Public health nurse
- ❖ Pathologist if available
- ❖ Anaesthetist
- ❖ Hospital matron – secretary
- ❖ Head of laboratory



❖ Head of pharmacy

❖ Hospital administrator.

(Maternal Health/Death Audit Guidelines, 2002)

The above is evidenced in a study in Australia Where the health authorities requires health institutions to report all maternal deaths to the health department within 72 hours of death. By reporting the following information should be provided:

- Patients name
- Date of birth
- Address
- Hospital of notification
- Hospital medical record number
- Date of death
- Provisional diagnosis

All maternal deaths are individually reviewed by the NSW Maternal and Perinatal Committee. The committee's findings are used to develop policies aimed at reducing maternal and perinatal mortality in Australia (NSW+HEALTH Department 2001).

The roles of the maternal death committee are to:

- Review maternal and perinatal morbidity and mortality in Australia,
- Make recommendations for the prevention of maternal death,
- Advise the health department on matters relating to the health of mothers,
- Classify these deaths as direct, indirect or incidental,
- Examine the circumstances leading to the deaths in order to identify any,



- Provide advice as appropriate to individual clinicians or groups of clinicians who had been involved in the care of the deceased

#### • Audits Are Not Reviews

Reviews are a critically important source of suggestions for topics for audit and the two processes are complementary and reinforcing. Every hospital or medical facility should review all maternal deaths, and also review all 'near misses.' Reviews usually identify several areas where the medical facility should improve the quality of the care they provide. When a review identifies a problem, staff should decide whether it is a common problem, whether standards already exist to cover the problem or whether a (different) standard should be adopted (WHO, 2003). If new standards are adopted, staff should be trained in their implementation and given some time to get used to the new standards before they are audited. Reviews and audits should reinforce each other.

"Review" comprises routine case discussion, for example

- Discussion of maternal death or complications in the maternity ward
- "Morning reports" in which cases of the previous 24 hours are discussed.
- Monthly maternal and perinatal mortality meetings within the obstetrics and gynaecology department or externally organised confidential enquiries of maternal deaths.

It is through these reviews that arises maternal death audit.



## 2.8 Confidentiality of Maternal Audit

Details of audit results concerning the work of individual clinical staff should be shared with clinical peers by prior agreement of the individual health care professionals involved, but only aggregated and anonymous data should be available to managers. Questions raised by such information should be posed to the clinical director or equivalent who would then take action with individual staff. This does not mean that raw data used for audit should be destroyed (likely to be the clinical record) but only that any paper or computer record, which could link individual patients or health care professional to audit conclusions, must not be retained. And that "peer review findings in individual cases should be confidential but the general results of medical audit should be available locally and the lessons learned published more widely" ([http://www.show.scot.nhs.uk/crag/publications/icam/ibca\\_04.htm](http://www.show.scot.nhs.uk/crag/publications/icam/ibca_04.htm))

## 2.9 Audit Standards

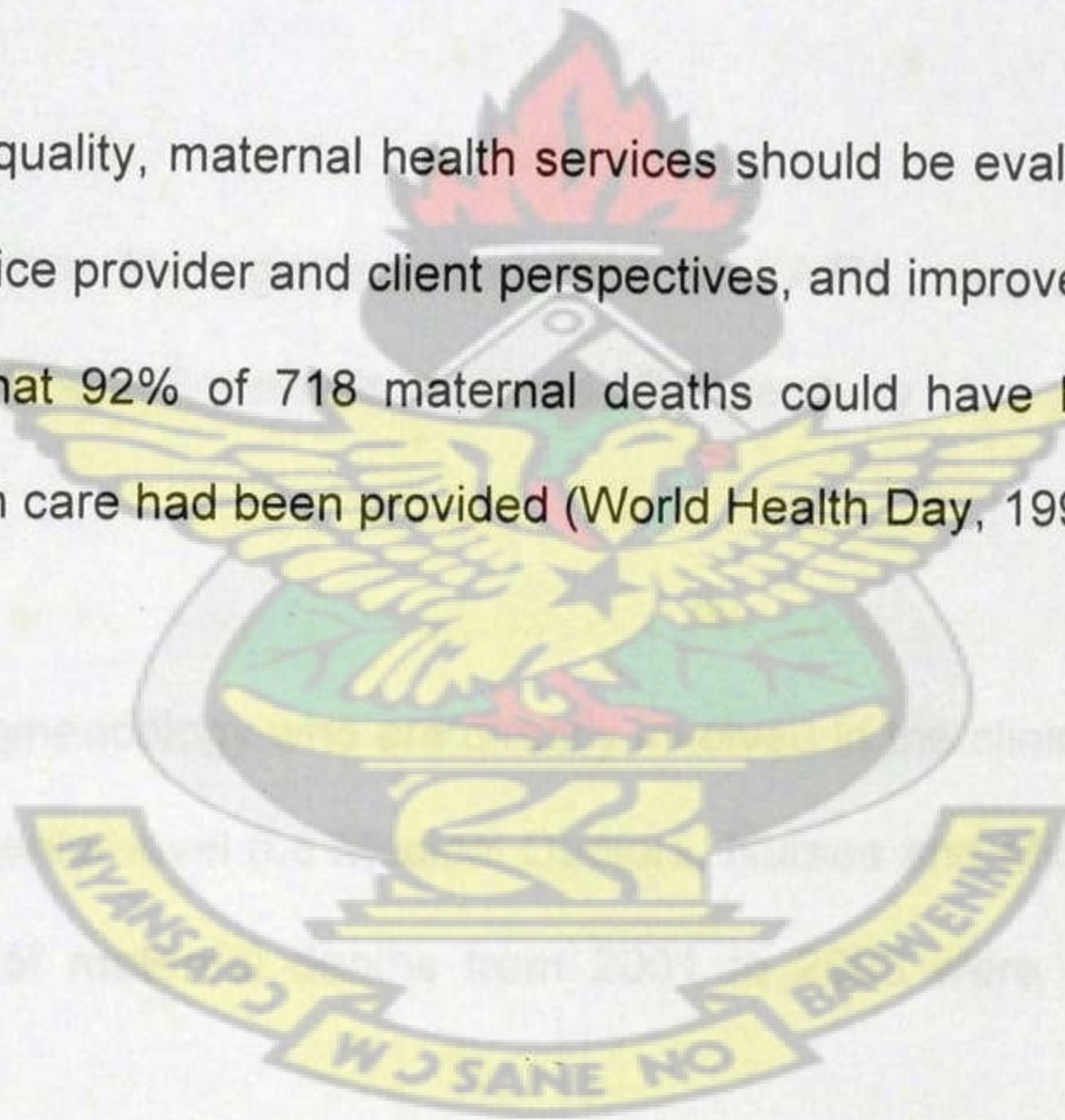
Standards are yardsticks, guidelines and protocols used to measure performance in health care. Standards seek to improve quality in health service. Doing things right the first time (Crosby, 1979). Setting standards in medical audit is predictable degree of uniformity and dependability at low cost with quality suited to the market (Deming, 1984) and quoted by Rewick and Harvey 1989. Standard setting is the secret of quality of health care. To set standard is fully meeting the needs of those who need the service most at the lowest cost to the organisation within the limits and directives set (Ovretveit, 1992).



For quality in maternal health care, hospital management set up maternal death audit committees by which Medical Superintendent of any facility is the head and review the obstetric factors (direct or indirect) that lead to maternal deaths.

Ideally any medical facility has written standards and protocols governing aspects of clinical care and facility management that contribute to the respect for and fulfilment of human rights. These include, for example, specific procedures designed to ensure informed consent, confidentiality of provider-patient communications and patient records, patient privacy, and transparent fee structures. Such specific practices address the right to be treated with dignity and without discrimination (<http://64.233.187.104/search?q>).

In order to assure high quality, maternal health services should be evaluated at regular intervals, from both service provider and client perspectives, and improved as needed. A study in Egypt found that 92% of 718 maternal deaths could have been avoided if standard maternal health care had been provided (World Health Day, 1998)





## CHAPTER THREE

### 3.0 METHODOLOGY

#### 3.1 Study Type

This was a descriptive study with a cross-sectional design.

#### 3.2 Study Variables:

The study employed qualitative and quantitative variables. Specifically, prevalence of maternal death, causes of maternal death, existence of an audit structure, frequency of meetings and minutes, use of standard forms and dissemination of findings are some of the variables.

#### 3.3 Study Population

The study population were Management and Staff at KATH, records on folders of maternal deaths from 2001-2003 were also retrieved for the study.

#### 3.4 Sample Units

Managers in Obstetric/Gynaecology who are directly involved in the clinical management of patients and staff at senior level (i.e Medical Doctors, Nurses and Midwives) form the sample units. Records of maternal deaths from 2001 to 2003 were also eligible for sampling.

#### 3.5. Sample Size

Five Managers and fifty staff members were interviewed. One hundred and eighty nine (189) maternal deaths records were retrieved and reviewed to determine the background of those who died and the causes that lead to such deaths and as to whether such



deaths were audited and recorded on audit forms A and B. These records were sampled from deaths from 2001- 2003.

### **3.6. Sampling**

Management were interviewed using purposive sampling technique.

Convenience sampling was used for staff of the directorate. Due to financial and time constraint this method was adopted because staff in the directorate run on three shifts thereby making it difficult to conduct probability sampling.

Total sampling was used on maternal death folders (records) at the Obstetric/Gynaecology wards of KATH.

Managers and staff were briefed about the purpose of the study and were assured of confidentiality of the responses. They were also informed to choose to answer or, and to stop interview at their convenience. Responses were written or checked on the questionnaire as deem appropriate. Clearance was sort out where inconsistency was found and corrections effected.

### **3.7 Data Collection Technique and Tools**

The study made use of primary and secondary data.

The interview technique and records review were employed. Staffs/management were interviewed using structured interview. Self-administered questionnaires were given out to management to be answered. A checklist was used to collate information from patients' records.



### 3.8 Pre-testing

The pre-testing of the interview guide, questionnaire and checklist were done between 17<sup>th</sup> and 19<sup>th</sup> of August at Manhya Hospital. Respondents with similar characteristics to those of the study location were chosen at random. This was done to identify and detect ambiguous questions and level of people's understanding with respect to the nature of the questions asked. Sentences, which were not clear and gave different, intended meaning and understanding by respondents, were modified accordingly. The checklist was also tested for suitability and precision as per the objectives of this study

### 3.9 Data Handling

To check for accuracy and completeness of data and ensure quality, questionnaire and interview guide were numbered serially. On daily basis, completed questionnaires and interview guides were checked thoroughly.

### 3.10 Data Analysis

The analysis of data was done at the end of the data collection. The responses were grouped and categorised on the basis of information provided. The analysis was done by using Special Package for the Social Scientist (SPSS).

### 3.11 Scope of the Study

The study was limited to the structures, process and outcomes for the selection and reviewing of maternal deaths. It did not examine the details in terms of administration of protocols for the management of maternal cases. In other words, this study ascertained whether protocols for the management of maternal deaths audit were adhered to. This study therefore is not intended to judge the standard of treatment however it emphasises on the need to review maternal death through the establishment of institutional



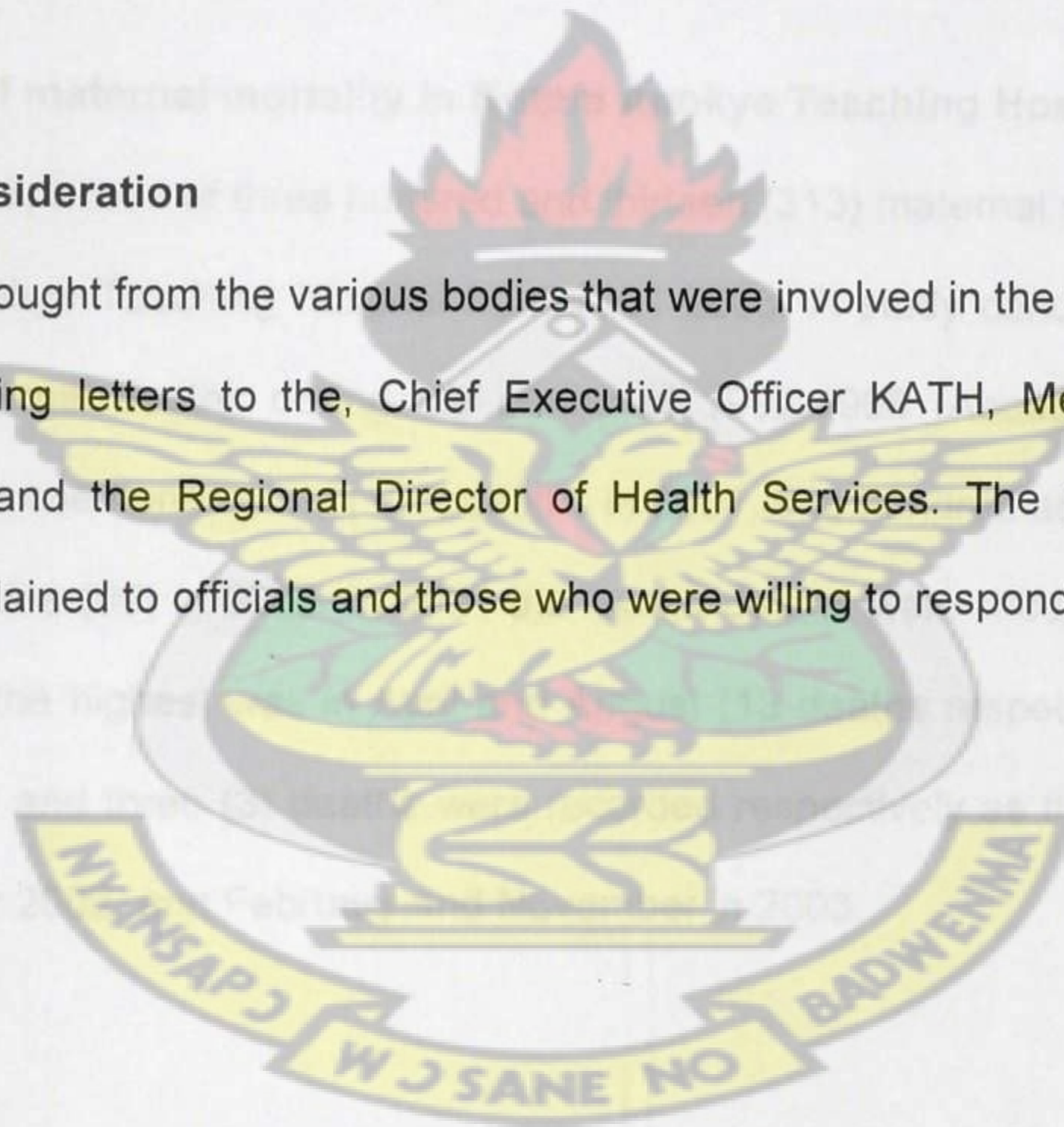
structures and procedures so as to reduce maternal deaths. Hence, it examines the Management System of Maternal Death audits in relation to structure, process and outcome as perceived in the conceptual framework.

### 3.12 Limitations of the Study

The causes of maternal death were not determined from post mortem procedures to ascertain whether they were due to accidental or incidental causes. This study was limited to adherence of MOH/GHS protocols on maternal death audit and examined the observation of clinical (audit) practice, comparing it with standards and changes implemented.

### 3.13 Ethical Consideration

Permission was sought from the various bodies that were involved in the study. This was done by distributing letters to the, Chief Executive Officer KATH, Metro Director of Health Services and the Regional Director of Health Services. The purpose of the research was explained to officials and those who were willing to respond to questions of the study.





## CHAPTER FOUR

### RESULTS

#### 4.0 Introduction

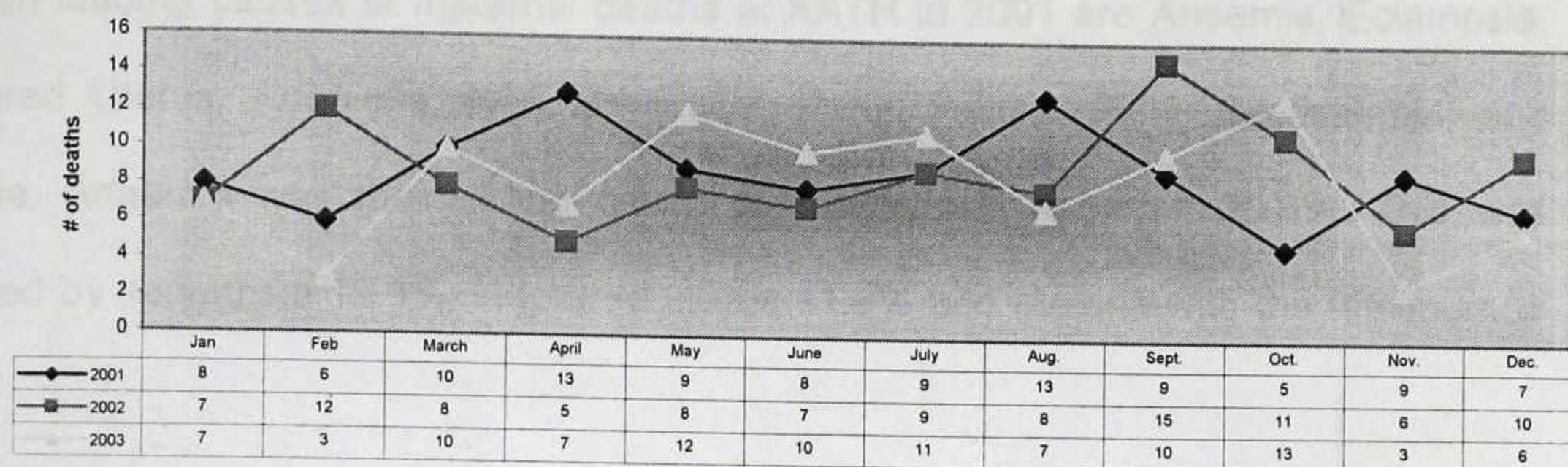
The findings cover the results of analysis of primary and secondary data on maternal mortality at Komfo Anokye Teaching Hospital, from 2001 – 2003. The findings include: prevalence and trend of maternal mortality at the hospital; health providers perspective as far as the structure, process and outcome of maternal audits are concerned; and evidence of maternal audit as per files of maternal deaths sampled from 2001-2003.

#### 4.1 Prevalence of maternal mortality in Komfo Anokye Teaching Hospital

As shown in fig 4.1, a total of three hundred and thirteen (313) maternal deaths occurred at the Komfo Anokye Teaching hospital from 2001-2003. A study conducted at KBTH showed 239 maternal deaths during the period of 1992-1996 (Aboagye and Akosa, 2000). There were one hundred six (106) deaths in 2001, one hundred and eight (108) in 2002 and ninety-nine (99) in 2003. In 2001 the lowest deaths were recorded in October (5 deaths) whilst the highest was in April and August (13 deaths respectively). In 2002 and 2003, five (5) and three (3) deaths were recorded respectively as the lowest in the months of April for 2002, and February and November in 2003.



fig:4.1 Trend of prevalence of maternal mortality at KATH, 2001-2003

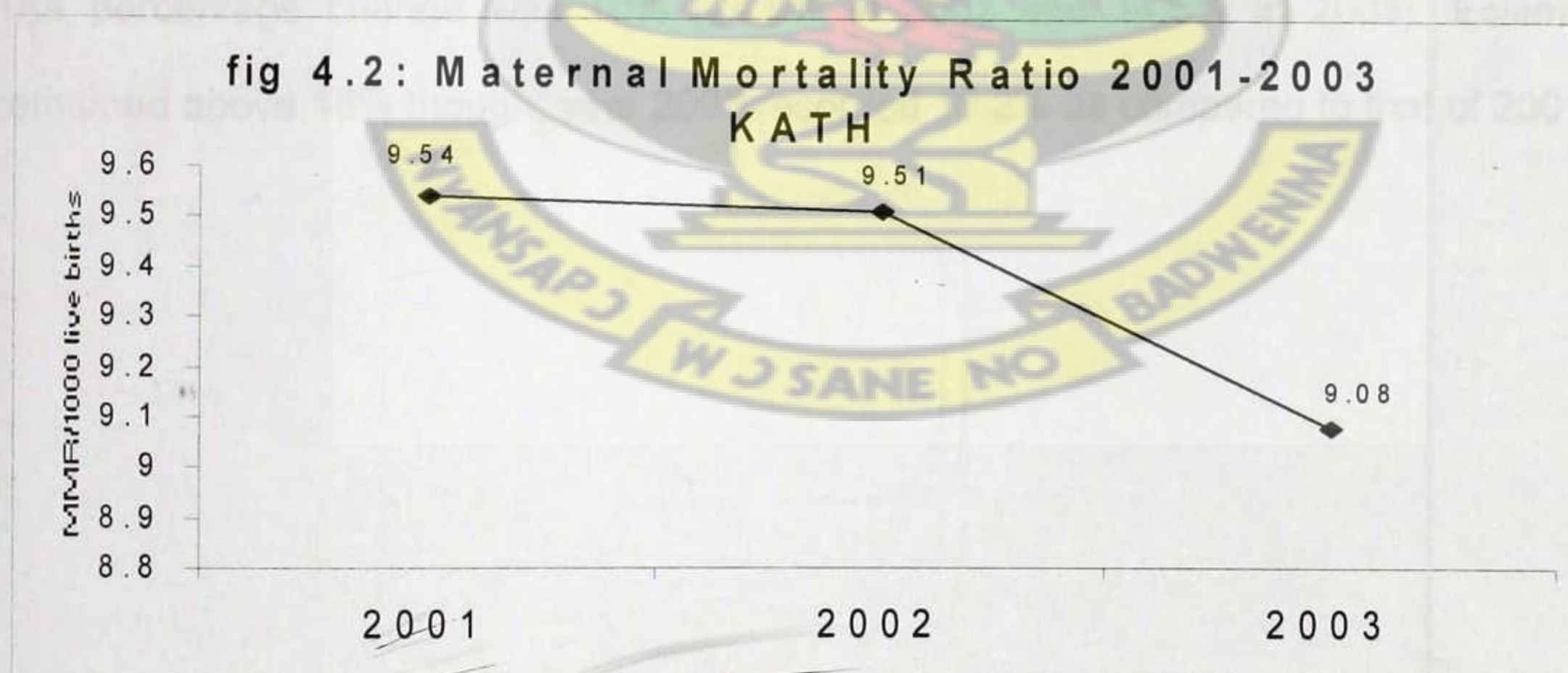


Source: Authors Field Survey, 2004

#### 4.2 Maternal Mortality Ratio 2001-2003

Maternal Mortality Ratio (MMR) of Komfo Anokye Teaching Hospital has been decreasing from 2001 to 2003. The MMR for 2001 was 9.54/1000 live births. This decreased to 9.51/1000 lives births in 2002 and further to 9.08/1000 lives births in 2003.

The trend of decrease is as shown in figure 4.2.



Source: Authors Field Survey, 2004



#### 4.3 Leading causes of death 2001-2003

The ten leading causes of maternal deaths at KATH in 2001 are Anaemia, Eclampsia, Raptured Uterus, Abortions, HIV, Meningitis, Renal Failure, PPH, Septicaemia, and Malaria. Anaemia was the leading cause of deaths and recorded 20.9%. This was followed by eclampsia 19.4%, Raptured uterus 11.9% and Malaria with the minimum of 3%.

In 2002, the ten top leading causes were Anaemia, Eclampsia, PIH, Septicaemia, Jaundice, Meningitis, PPH, Retained Placenta, Renal Failure and Abortion. The percentage occurrence of Anaemia increased from 20.9% to 24.5%. Eclampsia which was 19.4% in 2001 decreased to 18.9% a one percent significant decrease. Pulmonary inflammatory haemorrhage caused 11.3% deaths.

Year 2003's trend changed and Eclampsia rose to the top with 18.2%, Septicaemia 18.2%, Anaemia 14.5%, Hypovolaemic shock, HIV, PPH, Ectopic Pregnancy, Meningitis, PIH, and Sepsis in that order. Anaemia decreased to 14.5% of the total deaths, Septicaemia causes should be looked into. Further detail is as shown in table 4.1

The percentage change was 10% (24.5% in 2002 and 14.5% in 2003). Eclampsia remained above 18% though; year 2003 recorded 18.2% as compared to that of 2001.



**Table 4.1: Top Ten Causes of Death 2001- 2003**

<b>2001</b>			
<b>Disease</b>	<b>Freq N=106</b>	<b>% of all mortality</b>	<b>% of top ten (n=67)</b>
Anaemia	14	13.2	20.9
Eclampsia	13	12.3	19.4
Ruptured uterus	8	7.5	11.9
Abortions	6	5.7	9.0
HIV	6	5.7	9.0
Meningitis	5	4.7	7.5
Renal Failure	5	4.7	7.5
Post partum haemorrhage	4	3.8	6.0
Septicaemia	4	3.8	6.0
Malaria	2	1.9	3.0

Source: Author's Field Survey, 2004

<b>2002</b>			
<b>Disease</b>	<b>Freq N= 108</b>	<b>% of all mortality</b>	<b>% of top ten (n=53)</b>
Anaemia	13	12.0	24.5
Eclampsia	10	9.3	18.9
PIH	6	5.6	11.3
Septicaemia	5	4.6	9.4
Jaundice	4	3.7	7.5
Meningitis	3	2.8	5.7
PPH	3	2.8	5.7
Retained placenta	3	2.8	5.7
Renal failure	3	2.8	5.7
Abortion	3	2.8	5.7

Source: Author's Field Survey, 2004



2003			
Disease	Freq N=99	% of all mortality	% of top ten (n=55)
Eclampsia	10	10.1	18.2
Septicaemia	10	10.1	18.2
Anaemia	8	8.1	14.5
Hypovolaemic shock	7	7.1	12.7
HIV	4	4.0	7.3
PPH	4	4.0	7.3
Ectopic pregnancy	3	3.0	5.5
Meningitis	3	3.0	5.5
PIH	3	3.0	5.5
Sepsis	3	3.0	5.5

Source: Authors Field Survey, 2004

# KNUST

## 4.2 Maternal Death Audit Management System

### 4.2.1 Background of Management/Staff

Overall, 50 Management/Staff were interviewed through convenience sampling at KATH Obstetric and Gynaecology Directorate (wards A1-A5). Fifty percent (50%) of the respondents were Midwives, thirty percent (30) were General Nurse Midwives and twenty percent (20%) were Doctors.

Their years of experience in the job were also considered.



**Table 4.2 Background of Staff**

Options	Frequency (N=50)	Percentage (%)
<b>Professional Background of professionals</b>		
Doctor	10	20.0
General Nurses	15	30.0
Midwives	25	50.0
<b>Years of experience</b>		
>1	2	4.0
1-5	26	52.0
6-10	15	30.0
10+	7	14.0
Mean	5.2	
C.I. 95%	[0.26, 10.14]	

Source: Authors Field Survey, 2004

KNUST

As shown in table 4.3 below, the five leading causes of maternal death at KATH by respondents are Eclampsia, PPH, Severe Anaemia, Meningitis and Septicaemia.

#### 4.2.2 Maternal Death Audit Structure

Thirty two (32) of the respondents representing sixty four percent (64%) answered YES and twenty eight (28) representing thirty six percent (36%) responded NO to the question 'does the hospital audit maternal deaths?' respectively.

On the existence of maternal death audit committee at KATH, out of the fifty- (50) respondents, 9 (18%) responded YES, 37 (74%) answered NO and 4 (8%) responded 'Don't Know'. Nine (9) out of the 50 respondents responded to the audit committee's meeting, 1 responded daily, 3 monthly and 5 said 'they don't know'.

On background of committee members, 90% of the respondents said they were doctors in a team on which the mortality occurred and 10% said they don't know.



Sixty percent (60%) of the staff/managers said they have attended meetings where maternal deaths were discussed whilst the rest had not attended any of such meetings. These meetings were staff durbars (50.0%), workshops (33.3%) and Morning meetings (clinical meetings) (16.7%).

Respondents who attended these meetings indicated that, that was not a maternal death audit meeting (93.3%) whilst the rest (6.7%) considered it as such.

As indicated in table 4.3, eight respondents gave recommendation on the subject matter. Over sixty percent (62.5%) recommended the need to set up a maternal audit committee to audit maternal deaths whilst another sixty two percent (62.5%) proposed increasing staff strength with improved motivation. The other recommendations by fifty percent (50%) and thirty seven percent (37.5%) were: provision of modern equipment and promoting education and counselling respectively.

#### 4.2.3 Maternal Death Audit Process

Responses received on ever attended a meeting to discuss maternal deaths, 50 responses were received. 30 (60%) said YES and 20 (40%) said NO. When further probing was done, on what the meeting was attended, 30 responses were received. 10 (33.3%) said it was workshop, 5 (16.7%) said morning meetings and 15 (50%) said it was a staff durbar. On the question of considering the morning meetings as a maternal death audit/conference 30 responded to it. 2 (6.7%) said YES and 28 (93.3%) said NO as shown on table 4.4 below.



Providers were further asked whether they have ever seen maternal audit form, 49 (98%) said yes and 1 (2%) said no. As to whether they have used the maternal audit form to record findings on maternal death, all the 49 respondents who claimed to have seen it, said no. 'A worrisome situation'. Evidence of maternal audit documentation on maternal death audit forms A and B were not available.

Out of the sixty four percent (64% (32/50)) respondents who indicated that the hospital audit maternal deaths, seventy two percent (71.9% (23/32)) claimed it was done monthly whilst three percent (3.1%(1/32)) said it was done daily. The rest are six percent (6.2%(2/32)) and nineteen percent (18.7% (6/32)) for weekly and quarterly respectively.

#### 4.2.4 Maternal Death Audit Outcome

On the committee's dissemination of findings, 4 responses were received. One answered YES and the remaining three NO. Twenty-six (26) respondents responded YES and 24 NO to the question on how accepted maternal audit is to the management of KATH

(33.3%) said it was workshop, 5 (16.7%) said morning meetings and 15 (50%) said it was a staff durbar. On the question of considering the morning meetings as a maternal death audit/conference 30 responded to it. 2 (6.7%) said YES and 28 (93.3%) said NO as shown on the table 4.4 below.

**Table 4.3 Maternal Death and Audit (structure, process and outcome)**

Options	Frequency (N=50)	Percentage (%)
<b>5 Leading cause of maternal death (professionals view)</b>		
Eclampsia	24	48.0
Post partum haemorrhage	11	22.0
Severe Anaemia	9	18.0
Meningitis	4	8.0
Septicaemia	2	4.0



Does the hospital audit maternal death		
Options	Frequency (N=50)	Percentage (%)
Yes	32	64.0
No	28	36.0
If yes, how frequent (n=32)		
Daily	1	3.1
Weekly	2	6.2
Monthly	23	71.9
Quarterly	6	18.7

Source: Author's Field Survey, 2004

Existence of an audit committee		
Options	Frequency (N=50)	Percentage (%)
Yes	9	18.0
No	37	74.0
Don't know	4	8.0
How often do they meet		
Options	Frequency (n=9)	Percentage (%)
Daily	1	11.1
Weekly	0	0.0
Monthly	3	33.3
Quarterly	0	0.0
Don't know	5	55.6

Committee disseminate findings		
Options	Frequency (n=4)	Percentage (%)
Yes	1	25.0
No	3	75.0
If yes, when was the last bulletin (n=1)		
A month ago	0	0.0
3 months ago	1	100.0
6 months ago	0	0.0
A year ago	0	0.0

Source: Authors Field Survey, 2004



**Table 4.4 Maternal Death and Audit (process)**

Ever attended a meeting to that discussed maternal deaths		
Options	Frequency (n=50)	Percentage (%)
Yes	30	60.0
No	20	40.0
If yes, What was the meeting attended (n = 30)		
Workshop	10	33.3
Morning Meetings	5	16.7
Staff Durbar	15	50.0

Source; Author's Field Survey, 2004

Would you consider that meeting as a maternal audit meeting? (n=30)		
Yes	2	6.7
No	28	93.3
Is maternal audit accepted practice in this hospital?		
Options	Frequency (N=50)	Percentage (%)
Yes	26	52.0
No	24	48.0

Have you seen or used the maternal audit form?		
Options	Frequency (N=50)	Percentage (%)
Yes	49	98.0
No	1	2.0
Recommendation (n > 8)		
Set up maternal audit committee	5	62.5
Increase no of staff and improve motivation	5	62.5
Provide efficient equipment	3	37.5
Promote education and counselling	4	50.0

Source: Authors Field Survey, 2004



#### 4.2.5 Management's Perspective

In-depth interview with 5 top Managers of KATH showed that there is not an appointed committee to review cases. Reasons given included the fact that KATH is autonomous hence such meetings are termed "Maternal Death Conference" so it is a "conference" not a "committee".

Management admitted that minutes of such conference are not available and again even though they contend/disagree with the source of the proposed standard format for recording maternal audit, there are no standard forms used either. This might have informed others view that maternal death is done "partially". It was evident that management had little or no knowledge about the Maternal Health/Death Audit Guidelines.

Further details are as shown in table 4.5 below.

Table 4.5 Views of Managers

Maternal Audit	Response of five top managers
Structure	<i>"There exist not a delegated committee as such, however, conference are organized with the chief residents of O &amp; G being the convener. Participants of such conferences are invited".</i>
Process	Maternal deaths discussions are held during morning meetings and sometimes within the Teams of the Doctors. Other professionals e.g. Nurses, records staff and others are not part of such meetings. There is no standard procedure for recording discussions of maternal deaths such as that proposed by Ministry of Health (i.e. Form A and B). In addition minutes of such meetings are not recorded hence evidence of maternal audit cannot be ascertained even though from managements view it is done.
Outcome	There is no dissemination of findings of such discussions to other staff e.g. nurses.



#### 4.2.6 Background of maternal deaths records 2001-2003 (N=189)

The delivery records (folders/files) for 2001-2003 at KATH (Obstetric & Gynaecology) were retrieved and reviewed for any information relevant to the study. These included age, occupation, place (whether referred), causes of death were looked at. 189 folders/files were retrieved.

From the folders, traders were 79 (41.8%), Farmers 26 (13.8%), Artisan/Seamstress 47 (24.9%), Civil Servants 3 (1.6%) Apprentice 18 (9.5%), Student 8 (4.2%) and unemployment 8 (4.2%).

The top ten causes of maternal death were anaemia 29(14.7%), Eclampsia 19 (9.4%), PPH 15 (7.6%), Abortion 10 (5.1%), Septicaemia 9 (4.5%) Meningitis 5 (2.5%), Hypovolaemic Shock (2%), HIV 3(1.5%), Ectopic Pregnancy 2(1%) and retained Placenta 2(1%).

Table 4.6 Background of maternal deaths

Age Options	Freq (N=189)	Percentage (%)
<15	1	0.53
15-<20	25	13.2
20-<25	38	20.1
25-<30	46	24.3
30-<35	38	20.1
35+	41	21.7
Mean	28.26	
Standard deviation	7.91	



Occupation		
Options	Freq (N=189)	Percentage (%)
Trader	79	41.8
Farmer	26	13.8
Artisan/Seamstress etc	47	24.9
Civil Servant	3	1.6
Apprentice	18	9.5
Student	8	4.2
Unemployed	8	4.2

Source: Field Data 2004

# KNUST

Top ten causes of death		
Disease	Frequency (N =197)	Percentage (%)
Anaemia	29	14.7
Eclampsia	19	9.4
PPH	15	7.6
Abortion	10	5.1
Septicaemia	9	4.5
Meningitis	5	2.5
Hypovolaemic shock	4	2.0
HIV	3	1.5
Ectopic pregnancy	2	1.0
Retained placenta	2	1.0

Source: Field Data 2004



## CHAPTER FIVE

### 5.0 DISCUSSION

Each year more than 20 million women experience ill health as a result of pregnancy and more than 500,000 women were estimated to have died in 1995 as a result of causes related to pregnancy and child-birth (WHO, 2001). The study covers the prevalence and trend of maternal mortality at KATH, the causes of maternal death, evidence of maternal death audit, the existence of audit committee and what happens at maternal death conferences and whether findings are disseminated and implemented. The study shows that morning meetings are held to review previous day's cases. Teams under which such deaths occurred hold such meetings but findings are not properly documented.

#### 5.1.0 The time trend and prevalence of maternal mortality in Komfo Anokye Teaching Hospital (2001-2003)

##### 5.1.1 Maternal Mortality Ratio

The MMR of KATH for these years is 2001 954/100,000 live births, 951/100000 live births in 2002 and 908/100000 live births in 2003. These figures [rates] are higher than the national MMR of 214/100,000 live births as quoted by the Reproductive Health Unit; (RCH Annual Report 2003). The maternal mortality ratio of KATH declined slightly from 954/100,000 live births in 2001 to 908/100,000 live births in 2003. The trend is higher than the national average due to the fact that KATH serves the whole of the northern sector as well as some parts of Eastern, Western, Central regions. This makes the population for KATH unknown. This may be due to the fact that KATH being the only



teaching hospital in the northern sector of the country, the determination of the denominator for the estimation of such indicators is not known. The above ratio was computed as per total number of infants delivered alive at the hospital.

Even if the standard measurement was not used, the interpretation of the current ratio is quite significant in the sense that out of every 100,000 infants delivered alive, an average of 900 mothers may die.

The marginal decrease of the mortality ratio in the past three years at KATH might be due to improved level of quality of care as shown in the increase in coverage of ANC to 98% in 2003. In the same period the number of Specialist and Resident Doctors also increased thereby improving client's access to specialist and quality care.

#### 5.1.2 Causes of Maternal Mortality

The factors that contribute to maternal mortality are categorized into direct and indirect factors (Osei-Nketiah, 2001).

The results show that the main causes of MM from 2001 to 2003 were Anaemia, Eclampsia, Ruptured Uterus, Abortion, Septicaemia, Haemorrhage, HIV, Meningitis, Renal Failure and Malaria. Anaemia and Eclampsia contributed the highest percentage of all the causes within the study period. This is evidenced in a study conducted at ENRH showing the main leading causes of maternal death as haemorrhage, eclampsia, sickle cell crisis, and prolonged obstructed labour (Osei-Nketiah, 2001). As recorded, anaemia caused 20.9% in 2001, 24.5% in 2002 and 14.5% in 2003. Eclampsia also caused 19.4% in 2001, 18.9% in 2002 and 18.2% in 2003. Most of the patients (about



80%) were between 25 and 30 years. A similar study conducted at Korle Bu Teaching Hospital (KBTH) showed anaemia leading maternal mortality.

On the average, Anaemia caused 20% of the deaths recorded, Eclampsia 18.8%, Septicaemia 11.2%, Haemorrhage 11.9%, HIV 5.4%, Meningitis 6.2%, Abortion 4.9%, Renal Failure 4.4%, and Malaria 3%.

Anaemia that caused 35 (20%) of the total deaths may be attributed to Sickle Cell Disease, Malaria as well as direct obstetric causes like Haemorrhage, Ectopic and Unsafe Abortion. Also Iron Deficiency Anaemia is the commonest form of Anaemia in pregnancy. Iron supplementation in pregnancy, and education in improvement in nutritional status should lead to the decline of Anaemia in pregnancy.

Eclampsia caused 18.8% deaths. The mortalities from Eclampsia occurred through seizure attack and this is due to the fact that patients who may have Eclampsia do not attend ANC (Obed,1998). The incidence of Eclampsia of 18.8% at KATH is high as compared to that of developed countries since it is rare (Douglas and Redman, 1994) (Obed, 1998). Management of Eclampsia include prompt and appropriate referral, use of anti-hypertensive drugs, Magnesium Sulphate when indicated, and delivery of the foetus and placenta if the disease is progressing. This may explain why KATH as not adopted an intensive implementation of the findings of the study, of which it was a collaborative centre.

Haemorrhage caused 11.9% deaths during the period of 2001 to 2003. The deaths occurred through Ruptured Uterus, Retained placenta, Pulmonary Inflammatory Haemorrhage (PIH), Uterine Perforation, Renal Failure, Hypovolaemic Shock and

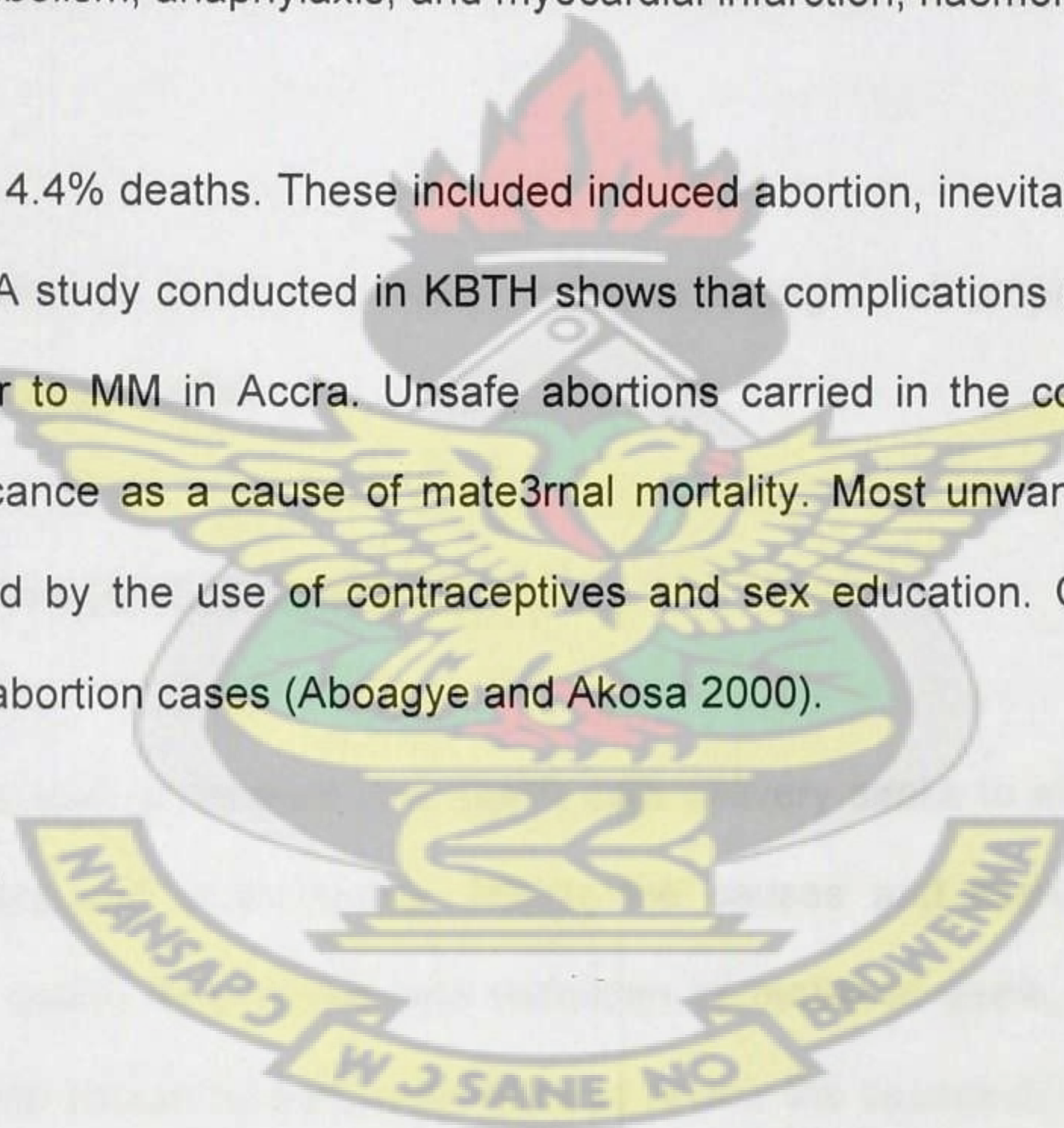


Unsafe Abortion. This is evidenced in a study conducted at KBTH. Prompt management of haemorrhage could help prevent maternal deaths.

Septicaemia caused 11.2% of the deaths. Septicaemia is an infection after delivery of the genital tract. Midwives and general practitioners must be aware of the signs and institute prompt management of any recently delivered woman with a fever and or offensive vaginal discharge.

Meningitis caused 6.2% deaths and may be attributed to sudden collapse in pregnancy, amniotic fluid embolism, anaphylaxis, and myocardial infarction, haemorrhage.

Abortion caused 4.4% deaths. These included induced abortion, inevitable abortion, and septic abortion. A study conducted in KBTH shows that complications of abortion are a major contributor to MM in Accra. Unsafe abortions carried in the communities have assumed significance as a cause of maternal mortality. Most unwanted pregnancies could be avoided by the use of contraceptives and sex education. Qualified doctors should manage abortion cases (Aboagye and Akosa 2000).





## 5.2 Maternal Death Audit Management System

The causes of MM needed prompt management as could help prevent such occurrence. Unfortunately prompt management of the cases were found to be hindered by factors which include proper maternal death audit; audit committee not set up, review of maternal deaths not done within 24 hours of such death and morning review meetings not recorded on maternal death audit form (A and B) and also the results of audit findings were not disseminated to health providers for their implementation. A research conducted in Seine-Saint-Denis district in France shows that results of audit findings were disseminated to health providers and the need for improvement (Papiernik et al, 2002)

In view of this, maternal death committee, members' background, proper documentation and implementation is crucial.

### 5.2.1 The Structure (Audit Committee)

The relevance of audit committee in a health care delivery seeks to eliminate maternal deaths by probing into such deaths, finding the causes and remedies to stop its recurrence. For quality health care and reduction of maternal death, health standard must be set. There should be audit committee to review the causes of maternal deaths, disseminate findings to health providers and make recommendations for implementation. Standards are yardsticks, guidelines and protocols used to measure performance in health care. It is through standard setting that maternal death audit was set up in UK to review maternal deaths which had lead to significant decline in MM. According to research, MM is rare and even 1/100,000 live births MMR reported in developed



countries does not show an accurate reflection of quality of care (IMJ News, 2004). Another study in Malaysia on MM showed that national and local audit committees were set up to reduce maternal mortality([http://www.hsph.harvard.edu/organisations/healthnet/SAsia/suschana/0426/suleiman\\_etc.ht](http://www.hsph.harvard.edu/organisations/healthnet/SAsia/suschana/0426/suleiman_etc.ht)).

The establishment of an interdisciplinary audit committee is paramount to the institution of structures to audit maternal deaths. The component of the audit committee as enshrined in the Ghana Health Service Protocol for Maternal Audit (Maternal Health/Death Audit Guide), are Medical Superintendent, Midwife In-charge, Nurses and Records Keeper. In the context of KATH, the equivalent professional status can be used (i.e Specialist in Obstetric/Gynaecology, Director of Nursing Services, Biostatistician and others). However, only eighteen percent (18% (95% C.I. [0.07, 0.28])) of Management/Staff interviewed claimed that the committee existed. This response however did not correspond to enlisting of members of the committee as none (0%) of respondents could mention members of the committee and or their background. The establishment of audit committee is evidenced in a study conducted in Australia where after the committee's findings, advises the national health department on issues of maternal mortality (News+HEALTH Department, 2001).

### 5.2.2 Process of Maternal Death Audit

Despite the above evidence, sixty four percent (64% (95% C.I.[0.51, 0.77])) management/staff thought that maternal audits were done. This showed that maternal death issues are discussed in certain fora within the hospital. Their claim may affirm evidence that sixty percent (60% 30/50)) attended meetings/durbar where maternal



deaths were discussed. The discussions were held during staff durbars (50%, 15/30), workshops (33.3%, 10/30), and morning meetings (16.7%, 5/30).

Morning meetings are the most frequently held meetings at Obs/Gyn, KATH. This is also referred to as clinical meetings. During such meetings incidence of morbidity and mortality are thoroughly discussed. Maternal mortality is discussed according to time of arrival, resource available at arrival, the appropriateness of investigations and management in general. Lack of clinical acumen was detected as evidenced in several hospitals in Malaysia involving failure to diagnose, failure to appreciate the severity of a patient's condition, inadequate therapy, inappropriate or delayed and failure to adhere to protocols (Suleiman et al, 1999) These discussions are done orally and suggestions are made to the physicians. Minutes of the morning meetings were not available during this study. It has also been established that there is no standard procedure for recording discussions or review of maternal deaths. This cannot be used as a maternal audit meeting as per the format of the Maternal Health/Death Audit Guidelines because the standard forms A and B were not available and known to majority of staff (98%, 49/50 (95% C.I. [0.94, 1.00])) and particularly among medical officers (100%, 5/5) who adhered to the attendance of the Morning Meetings. Staff agreed with the author of the study, as over ninety percent (93.3%, 28/30) said that such meetings could not be maternal audit meetings. Staff recommendation (5/8) about the need to "set up a maternal audit committee" affirms the lack of it at KATH.

Audit being an interactive process brings together health care providers to discuss quality of care, which leads to improving awareness and changes in practice. From this perspective, the audit process is an intervention for improving outcomes because it causes key factors to evaluate their practices. It is increasingly recognised that a



physician's own personal awareness of his/her approaches to care taking can result in better quality of care. Studies have found that the systematic collection of data on care lead to a decrease in adverse outcomes as observed, for example, with the reduction of risk adjusted mortality rates for coronary bypass surgery in New York State between 1987 and 1993. The results of audit study in this optic are better quality care and a decrease in the frequency of identified adverse outcomes (Papiernik et al, 2002).

### 5.2.3 Outcome of Maternal Death Audit

Evidence suggests that since there is not a standard form for the reporting of maternal mortality audit/discussions, information for dissemination is rare hence dissemination of findings are not done. Management confirmed this fact and considered it "worrisome". The lack of feedback as far as discussion or meetings about maternal audits is concerned, contravenes with the conceptual framework/procedure for auditing. This implies that, neither can standard be well compared nor implementation of recommendations thereof reviewed for improved service delivery. Audited result should be disseminated to health providers in the hospital so that death could be avoided and maternal health improved, as it is done in Seine-Saint- Denis hospital (France). Audit results were disseminated to health providers and the momentum created by the study led to the establishment of a continuing forum for the discussion of cases of prenatal death in Seine-Saint-Denis (<http://www.inserm.fr/ethique/cours.msf/o/>).

Furthermore the incontrovertible evidence of the apparent absence of a maternal audit committee at KATH is really "worrisome". This is against the backdrop, that KATH is the second recognized high institution of medical practice in Ghana; this evidence does not befit its status as a teaching hospital. This is because, it is expected that instituting such committees would improve quality of learning and service delivery through teaching and



research thereby improving health and reducing maternal death. Again it has a correlation to the quality of health professionals, particularly medical officers trained at the hospital for the country.

On maternal death audit being an accepted practice at KATH, 50 responses were received and 52% responded in affirmative and 48% was on the contrary. The high perception of it being accepted may be due to "professional guilt" about the need for maternal audit and its relevance to the general practice of delivering quality health care. The contention is further buttressed by Management view that since there is a form of discussion/conference it can be said that it is done. This might have informed the perception of the general staff however, the facts do not support this perception because the meetings are not regular, it is not organized by a known committee neither are proceedings/findings of it known to staff.

To improve on maternal health KATH management should ensure setting up audit committee to review all maternal deaths and that such review should be recorded on the maternal audit form A and B, disseminate findings and implement.

In Ghana, maternal death audit is pre-requisite but not all deaths are audited. In 2003, Upper West region audited all reported maternal deaths; Volta Region audited 55% of her deaths (RCH Annual Report, 2003). Ashanti was not mentioned whether it audits its or not. Level of Maternal Audit at KATH was not also recorded in the report. This might have been due to lack of information because, findings of this study have revealed that there are no minutes on discussions on maternal deaths on morning meetings. KATH as a teaching hospital, should audit its deaths for students to know and handle cases which have precedence on reported cases on health standards.



## CHAPTER SIX

### 6.0 CONCLUSION AND RECOMMENDATIONS

#### 6.1 CONCLUSION

- **The time trend and prevalence of Maternal deaths at KATH**

Maternal deaths at KATH are very high. Maternal Mortality of KATH for 2001, 2002 and 2003 were 106, 108 and 99 respectively.

Anaemia in pregnancy leads the causes of maternal deaths at KATH and is among the top five in Ghana. For the three years Anaemia has caused 20% deaths on the average. KATH should strengthen its education on the nutritional needs of pregnant women, anti-malaria strategies and iron supplementation. These are necessary because for instance it has been proven that anti-malaria strategies could improve the haemoglobin levels of pregnant women (Browne et al., 2002).

Again KATH should advice pregnant women on the need to attend antenatal care to detect causes

- **KATH does not have a Maternal Audit Committee**

Maternal Health/Death Audit Guidelines states inter alia protocols inclusive Audit committee. As at the time of this study, there was no Maternal Audit Committee in place at KATH, which serves as a hindrance to MOH policy of improving maternal health. There is a high (18% (95% C.I. [0.07, 0.28])) perceptions of Management/Staff that the committee exist could not be ascertained by the fact that



none of them was able to mention any of the members of such committee if they really existed.

- **Discussions of Maternal Deaths at KATH are not recorded**

During morning meetings maternal deaths discussed are not documented at all, let alone on the maternal death audit standard form A and B, a recommended form for standard reporting by MOH. It was envisaged that most of the professionals have never set eyes on such a form.

- **The findings of Maternal Death discussions are not disseminated.**

Since issues discussed are not documented on the standard form, findings are not disseminated, hindering the implementation of findings by Team members to improving maternal health.

KATH do not go by MOH policy of maternal death audit by instituting maternal death audit committee and never uses maternal death audit format to document findings. If findings are not properly documented there will be no evidence that there has been audit in place.

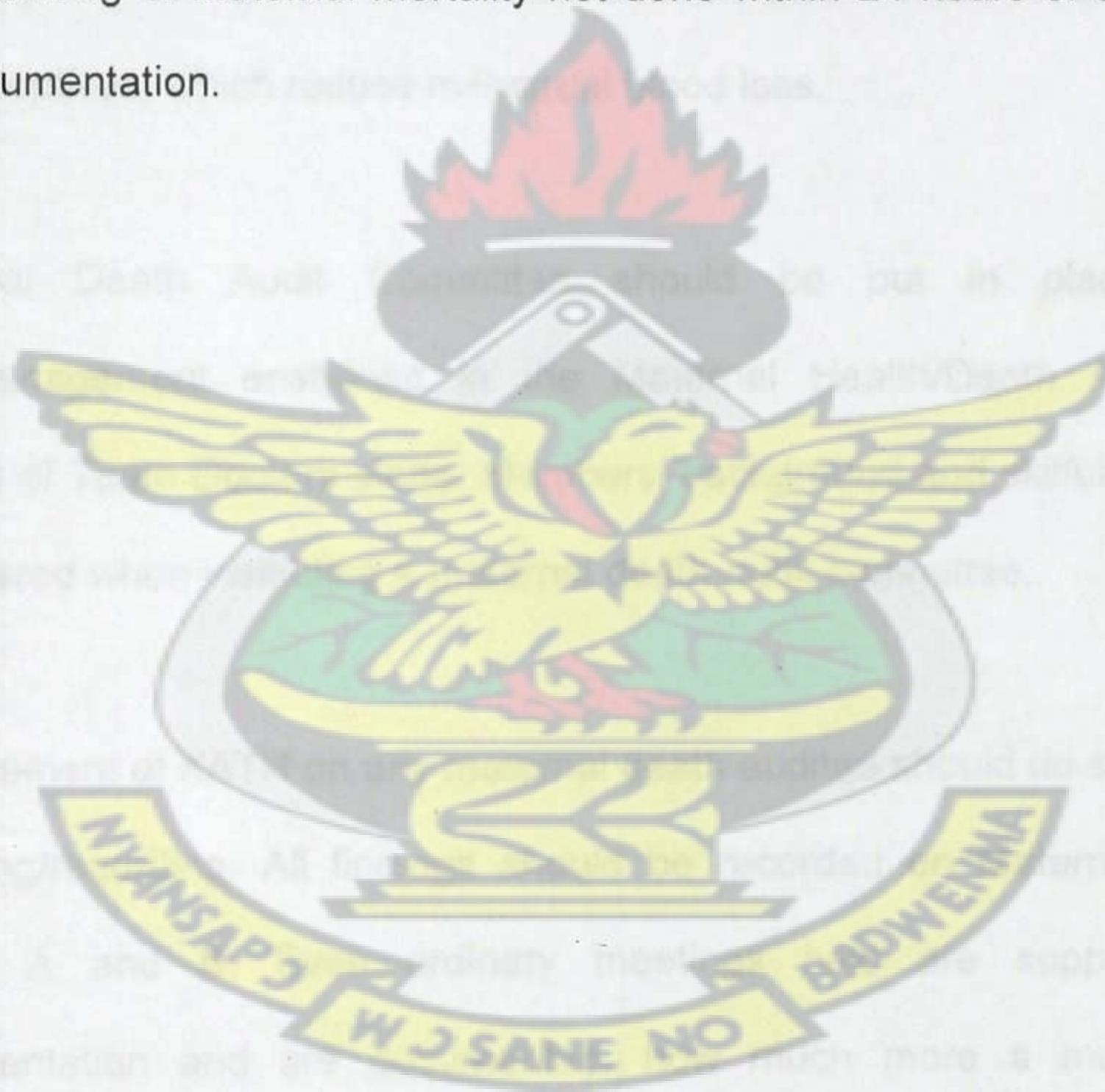
- **KATH review maternal deaths but do not audit maternal deaths**

KATH conduct morning meetings in which cases of the previous 24hrs are discussed. In other words, the meeting is centred on reviewing all cases including maternal death if it so occurred. Focus is not on maternal death per say but on all incidences in the previous day. The review of all cases (morbidity and mortality) therefore, cannot be considered as maternal death audit.



Even though Management/Staff feel obliged to audit maternal death due to the fact that it is a professional and institutional responsibility, accumulative evidence shows that: there is no Audit Committee; minutes of discussion on maternal death are not kept; maternal death discussion do not follow MOH protocol/guidelines, KATH does not conduct Maternal Death Audits but rather reviews morbidity and mortality.

The causes of maternal mortality need prompt management as could help prevent future occurrence. Unfortunately prompt management of the cases were found to be hindered by factors, which include proper maternal death audit, audit committee not in place, auditing of maternal mortality not done within 24 hours of such death and proper documentation.





## 6.2 RECOMMENDATION

1. KATH should follow the policies of MOH/GHS, which seeks to reduce maternal death. This will go a long way to reduce the national MMR of 214/100000 to the national target.
2. KATH should strengthen its education on nutritional needs of pregnant women, anti malaria strategies and iron supplementation. These are necessary because it has been proven that anti malaria strategies could improve the haemoglobin levels of pregnant women (Browne et al, 2002). There should also be the tendency for women to have fewer children and increased use of hormonal contraceptives, which reduce menstrual blood loss.
3. Maternal Death Audit Committee should be put in place to include staff/management enshrined in the Maternal Health/Death Audit Guideline instead of Team Doctors alone. Members' background and skilfulness should be considered when instituting a maternal death audit committee.
4. Management of KATH on any maternal death audited should do standard form of reporting/recording. All findings should be recorded on Maternal Death Audit Forms A and B. Even ordinary meetings held are supposed to have documentation and are documented, how much more a meeting held on maternal death, which is a national issue.



5. KATH should adopt the protocols on Maternal Audit by MOH/GHS so that there will be improvement on future study on maternal audits. This is because it will enhance the standardisation of the procedure of audit.

6. Prompt management of maternal deaths through auditing is paramount and crucial to quality of health.

# KNUST





## STAFF/MANAGEMENT QUESTIONNAIRE

I am a postgraduate student at KNUST researching into the acceptability of Maternal Death Audit at KATH. Please your response to this questionnaire will go a long way to improve the service delivery at KATH and your confidentiality is assured.

Age:..... Profession: (Dr/Midwife/Nurse)

Sex:.....

# KNUST

### CAUSES OF MATERNAL DEATH

1) What are the leading causes of maternal death in this hospital?

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

2) Which of the causes mentioned lead maternal death in this hospital?

.....  
.....

3) How frequent is maternal death recorded in this hospital

(a) daily (b) weekly (c) monthly (d) none of the above

### SAFE MOTHERHOOD

4) Do pregnant women seek immediate health care? Yes [ ] No [ ]

5) Do pregnant women go through the normal antenatal care? Yes [ ] No [ ]

6) How many times are they supposed to attend ANC? .....

7) Do pregnant women have complications during pregnancy? Yes [ ] No [ ]

8) Do skilled health attendants attend to pregnant women during labour?



Yes [ ] No [ ]

9) What prevent pregnant women not to deliver at this hospital?

.....  
.....

#### MATERNAL DEATH AUDIT

10) Does the hospital audit maternal death? Yes [ ] No [ ]

11) If yes how frequent is it done?

a) Daily

b) Weekly

c) Monthly

d) Quarterly

e) None of the above

12) Does the hospital have audit committee? Yes [ ] No [ ]

13) What is the background of the members of the audit committee?

.....  
.....

14) How frequent do they meet?

a) Daily

b) Weekly

c) Monthly

d) Quarterly

e) None of the above

15) Does the audit committee disseminate their findings? Yes [ ] No [ ]

16) If yes when was the last findings disseminated?

a) A month ago



b) Two months ago

c) Six months ago

d) A year ago

e) None of the above

17) Do you think maternal death audit is an accepted practice in this hospital?

Yes [ ] No [ ]

18) Have you ever seen the maternal death audit form A and B before?

Yes [ ] No [ ]

19) If your answer to question 18 is yes, have you used the form to record findings on any maternal death?

Yes [ ] No [ ]

#### ACCESSIBILITY OF THE HOSPITAL

18) Are pregnancy complications treated urgently? Yes [ ] No [ ]

19) Do such cases delay before reaching this hospital? Yes [ ] No [ ]

20) What is the usual means of transport for patients with complications to the hospital?

a) Commercial (b) Ambulance (c) Private (d) On foot

21) Are these complications usually referred? Yes [ ] No [ ]

22) If yes, from where?

a) Public hospitals

b) Private clinics

c) Maternity home

d) TBA's

23) Do people come for counselling on any complications on pregnancy? Yes [ ]

No [ ]

24) Do people come for counselling on abortion? Yes [ ] No [ ]



25) Is there a unit for family planning services? Yes [ ] No [ ]

26) Do you have adequate equipment to manage pregnancy complications?

Yes [ ] No [ ]

27) If no, what equipments are needed?

.....

.....

.....

28) What will you recommend to improve on maternal health?

.....

.....

.....

#### CHECKLIST FOR MATERNAL DEATH RECORDS AT KATH

ID NO	AGE	OCCUPATION	CAUSE OF DEATH



## MATERNAL DEATH AUDIT REPORT FORM

1. Name of deceased .....
2. Age ..... Home Address .....
3. Educational Status:  
None [ ] Primary [ ] Middle/JSS [ ] Secondary [ ]  
Tertiary [ ]
4. Occupation of Deceased .....
5. Occupation of Husband/Partner .....
6. Date & Time of Arrival .....
7. Time of death .....
8. Place of death .....
9. Gestational Age (Months) .....
10. Neonatal outcome .....
11. Gravidity ..... Parity .....
12. ANC During this Pregnant:  
Yes [ ] No [ ]
13. Type of Provider:  
TBA [ ] CHO [ ] Midwife [ ] Medical Officer [ ]  
Obstetrician/Gynaecologist [ ]
14. Antenatal Risk Factors .....  
.....
15. Treatment Given Yes [ ] No [ ]
16. What kind? .....  
.....
17. Referred Yes [ ] No [ ]
18. If Yes; Date and Time of referral .....



19. How far (km) did she live from the nearest facility (which) .....

20. What kind of transport did she use? .....

21. Duration of the journey.....

#### Clinical Details

22. History of the pregnancy .....

23. History of labour and delivery and puerperium

24. Examination and findings including results of laboratory and other investigations



25. Treatment given (including surgical and anaesthetic details.

.....

.....

.....

.....

.....

26. Detailed narrative of events leading to death

.....

.....

.....

.....

.....

27. Possible cause of death

.....

.....

.....

.....

28. Autopsy Report .....

.....

.....

.....

.....

29. Number of Extra Narratives requested for .....

.....

.....

.....



30. Summary of contributory factors to death .....

.....

.....

.....

30. Recommendations and Actions to be taken .....

.....

.....

.....

Names and Designations of Audit team members

.....

.....

.....

.....

.....

Name of Chairman .....

Date.....

Signature of Committee Chairman

.....

### MMR Summary Audit Report Form

Name of Deceased	Age	Date of death	Place	Cause of Death	Phase of Pregnancy (Prenatal, Labour and Delivery Postpartum)	Was death Preventable



## REFERENCES:

- Aboagye B. and Akosa A.B, Autopsy study of Maternal Deaths. Ghana Medical Journal, Sept 2001
- Abouzahr, Improving Access to Quality Maternal Health Services, 1997
- Abu Bakar Suleiman et al, A Strategy For Reducing Maternal Mortality. A Bulletin of the World Health Organization, 1999. 77 (2). P. 190-192.
- Acquaye J.K. Blood Transfusion practice in District Hospitals GMJ, 1997.
- Adetoro O.O. The Pattern of eclampsia at the University of Ilorin Teaching Hospital, Nigeria. Int. J Gynecol. Obstet 1990.
- Annual Report. Reproduction and Child Health Unit, Public Health Division. GHS2003
- Bergstrom S. et al, Seasonal Incidence of Eclampsia. J. Perinat Med. 1992
- Biego G. et al, Survey on Adult and childhood Mortality, Tanzania Macro International, 1995.
- Borghi J. et al, Cost of near-miss obstetric complications for women and their families in Benin and Ghana
- Collier J.A.B. et al, Oxford handbook of clinical specialities-4<sup>th</sup> edition, 164
- Collison AHK et al, Indirect causes of maternal mortality at Korle-Bu Teaching Hospital. G.M.J Dec. 203
- Coverage of maternity care, WHO 1997
- Crowther C.A, Eclampsia at Harare maternity Hospital. South Africa Journal 1985
- Douglass K and Redman C, Eclampsia in the United Kingdom BMJ, 1994
- Ghana statistical service and Macro International Inc. 1999.
- Drife J. O; Maternal 'near miss' reports? B.M.J 1993



Lassey A.T, Wilson J.B Trends in maternal mortality in Korle Bu Teaching Hospital, 1984-1994. Ghana Medical Journal

Liljestrand J. Reducing Perinatal and Maternal Mortality in the World: the Major Challenges. British Journal Obstetric Gynaecology 1999.

Marshall Marinker, Medical Audit and General Practice, 1990

Maternal Health/Death audit guidelines, Reproduction and Child health Unit,  
Public Health Division Ghana Health Service, 2002

Obed S.A. and Adu-Darko Michele, Cervical prolapsed during Pregnancy Ghana Medical Journal, Dec 2003.

Obed S.A. et al, Eclampsia: 134 consecutive cases. Int J. Gynecol Obstet, 1994

Odoi-Agyarko H. et al, Risk Factors in Maternal Mortality January 1993.

Osei-Nketiah, Maternal Mortality at Efia Nkwanta Regional Hospital, Ghana Medical Journal, September 2001.

Petros A. J, Marshall J. C, Van Saene H.K. Should morbidity replace mortality as an end point for clinical trials in the intensive care? Lancet 1995.

The lancet Vol. 359. June 1, 2002. [www.thelancet.com](http://www.thelancet.com)

WHO, 2003. Monitoring the Reduction of Maternal Morbidity and Mortality

[http://www.mma.org.my/info/4\\_audit\\_98.htm](http://www.mma.org.my/info/4_audit_98.htm)

<http://www.abdn.ac.uk/impact/cbca/cycle.htm>

[http://www.show.scot.nhs.uk/crag/publications/icam/ibca\\_02.htm](http://www.show.scot.nhs.uk/crag/publications/icam/ibca_02.htm).

[http://www.imj.ie/news\\_detail.php?nNewsId](http://www.imj.ie/news_detail.php?nNewsId)

<http://www.cdc.gov/mmwr/preview/mmwrthn/mm4838a2.htm>