ASSESSMENT OF MEDICAL RECORDS MAINTENANCE IN KATSINA STATE GENERAL HOSPITALS

BY

UMAR MUKHTAR DANDUME
MARM/EDUC/32746/2012-2013

A THESIS SUBMITTED TO THE SCHOOL OF POSGRADUATE STUDIES, AHMADU BELLO UNIVERSITY, ZARIA IN PARTIAL FULFILLMENT OF THE AWARD OF MASTER DEGREE IN ARCHIVES AND RECORDS MANAGEMENT

DEPARTMENT OF LIBRARY AND INFORMATION SCIENCE,
FACULTY OF EDUCATION
AHMADU BELLO UNIVERSITY,
ZARIA

JUNE, 2017

DECLARATION

I hereby declare that the work in this dissertation entitled ’Assessment of Medical Records Maintenance inKatsina State General Hospitals has been written by me under the supervision of Dr B.S. Aduku andDrBabangida Umar Dangani, and it has not been presented elsewhere, either wholly or in part, for the award of another degree, diploma or any certificate as this or any other institution. All quotations and sources of information have been fully acknowledged within the text and by means of references.

_____ _____

MUKHTAR Umar Dandume Date

CERTIFICATION

This dissertation titled "Assessment of Medical Records Maintenance inKatsina State General Hospitals." meets the regulation governing the award of the Degree of Masters of Archives And Record Management (MARM) of Ahmadu Bello University, Zaria Nigeria and was approved for its contribution to knowledge..

_____ _____

Dr. Baba S. Aduku Date
Chairman Supervisory committee

_____ _____

Dr. Babangida Umar Dangani Date
Member Supervisory commitee

_____ _____

Dr. HabibuMuhammed Date
Head of Department

_____ _____

Prof. KabiruBala Date
Dean School of Post Graduate studies
Ahmadu Bello University Zaria

DEDICATION

This work is dedicated to myself, my parents, my colleagues, relatives and my supervisors.

ACKNOWLEDGEMENT

First and foremost, I would like to thank Almighty Allah, the most gracious, the most merciful and the sustainers of the universe who bestowed all means and favour on me to complete this work successfully.

I sincerely appreciate my supervisors Dr Baba S. Aduku and DrBabangida Umar Dangani who out of their tight schedules, patiently read through my work and made constructive criticism and meaningful corrections and suggestion that led to the success of this work. I once again say thank you. My appreciation also goes to the Head of Department of Library and Information Science, Dr .HabibuMuhammed

I thank all my lecturers in the Department for their support. They include: Prof. ZakariMuhammed, Prof TijjaniAbubakar, (Dean Faculty of Education), Prof. Umar Ibrahim, DrAbdullahi I. Musa, Dr. Abu Yusuf, Dr Ezra S.Gbaje, prof (Mrs) H.M Dauda, MrHayatu M. Mohammed, Mrs. F. M Mohammed, Mrs C. AAdikwu, Idris A Dauda, MalJibrilAbdulrahaman,DrAliyuAbdulkadir, DrHabibu Mohammed and MrsOpeyemiQadir.

My appreciation also goes to AbdulkarimBubeAliyu, AliyuIsiyaku Ahmad, Auzai Ahmad Yamusaand to all my other course mates. I also appreciate the support of my mother Fatima Aliyu and family members and colleaques like DanjumaSulaiman, Sanusi Yusuf Tsiga, Ibrahim Muhammed, Ahmed Rabiu, AbdulkadirMuhammed, AlhShehuLawal`Dandume to mention butfew.

TABLE OF CONTENTS

Title Page---------- i

Declaration---------- ii

Certification---------- iii

Dedication---------- iv

Acknowledgement---------- v

Table of Contents---------- vi

List of tables---------- x

List of Abbreviations---------- xi

Abstract---------- xiii

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study---------- 1

1.2 Statement of the Problem---------- 8

1.3 Research Questions---------- 9

1.4 Hypotheses ---------- 9

1.5 Objectives of the Study---------- 10

1.6 Significance of the Study---------- 10

1.7 Scope of the Study---------- 11

1.8 Operational Definition of the Term---------- 11

References ---------- 12

CHAPTER TWO: REVIEW OF RELATED LITERATURE

2.1 Introduction - - - - - - - - - 14

2.2 Concept of Medical Records - - - - - - - - 14

2.3 Maintenance of Medical Records- - - - - - - - 16

2.3.1 Reasons for the Maintenance of Medical Records- - - - - 17

2.3.2 Storage of Medical Records - - - - - - - - - 18

2.4 Medical Records Filling System - - - - - - - 22

2.4.1 Alphabetical Filing- - - - - - - - - - 24

2.4.2 Numerical Filing - - - - - - - - - 24

2.4.3 Alpha-numerical Filing - - - - - - - - 25

2.5 Preservation of Medical Records - - - - - - 25

2.6 Summary of the Review - - - - - - - - 30

References - - - - - - - - - 32

CHAPTER THREE: METHODOLOGY OF DATA COLLECTION

3.1 Introduction - - - - - - - - - 36

3.2 Research Methodsadopted for the Study- - - - - - 36

3.3 Population of the Study - - - - - - - 37

3.4 Sampling Techniques and Sample Size - - - - - 39

3.5 Instrument for Data Collection - - - - - - 40

3.6 Validity of the Instrument - - - - - - - 41

3.7 Reliability of the Instrument - - - - - - - 41

3.8 Procedure for Data Collection- - - - - - - 41

3.9 Procedure for Data Analysis- - - - - - - - 42

References - - - - - - - - - 43

CHAPTER FOUR: DATA PRESENTATION, ANALYSIS AND CONCLUTION

4.1 Introduction---------- 45

4.2 Response Rates---------- 45

4.3 Demographic Analysis of the Respondents---------- 46

4.4 Inferential Statistical Analysis---------- 59

Null Hypothesis One ---------- 59

Null Hypothesis Two---------- 61

Null Hypothesis Three---------- 62

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction ---------- 63

5.2 Summary of the Study ---------- 63

5.3 Summary of the Major Findings ---------- 63

5.4 Conclusion---------- 64

5.5 Recommendations of the Study---------- 65

5.6 Contribution to Knowledge…---------- 65

5.7 Suggestions for Further Research---------- 66

Bibliography---------- 67

Appendices----------72

LIST OF TABLES

Table 3.1 Population of the Study---------- 38

Table 3.2 Sample of the Study---------- 40

Table 4.1 Response Rate---------- 45

Table 4.2 Educational Qualification of Respondents---------- 47

Table 4.3 Working Experience of Respondents---------- 49

Table 4.4 Types of Medical Records Managed---------- 51

Table 4.5 Devices used in Storing Medical Records---------- 53

Table 4.6 Filing system of Medical Records---------- ------ 55

Table 4.7 Preservation of Medical Records---------- ------ 57

Table 4.8 Difference in the way Medical Record are Maintained---------- ------ 59

Table 4.9Difference in the type of Medical Records Filing system Adopted---------- 61

Table 4.10 Difference in the Methods used in Preservation of Medical Records---------- 62

LIST OF ABBREVIATIONS

1. ABU- Ahmadu Bello University
2. ANOVA- Analysis of Variance
3. DF- Degree of Freedom
4. Dr- Doctor
5. ESARBICA- Eastern and Southern Regional Branch of the International Council on Archives.
6. F- Frequency
7. H_O- Null Hypothesis
8. MARM- Master in Archives and Records Management
9. Mrs.- mistress
10. No – Number
11. Prof – Professor
12. Sign – Significance
13. S/N – Serial Number
14. SPSS – Statistical Package for Social Science
15. VAR0001 – independent variable
16. VAR0002- dependent variable
17. α – Alpha
18. %- Percentage
19. RM – Record Management
20. I S O- International Standard Organization
21. PMR – Personal Medical Records
22. EMR_S Electronic Medical Records
23. UNESCO – United Nations Educational Scientific and Cultural Organization

24. ICT – Information Communication Technology

25. CD ROM- Compact Disc Read Only Memory

26. P H I – Protected Health Information

ABSTRACT

Medical records are created/ generated in health institutions during the process of treating patients as the Hospital clients. General Hospitals in KatsinaState have over the years generated and accumulated huge amount of medical records. Valuable as these records are, a lot are misplaced and mutilated in the Hospitals. The study came up with four research questions: what types of medical records have been stored, and devices used in storing medical records, the types of filing system adopted in the General Hospitals in Katsina State, and what methods are used in preserving medical records. A descriptive survey research design was employed for the study to find out how the selected General Hospitals effectively stored, preserved and file their medical records. The staff identified to be managing the medical records was 112. The study used Krejcie and Morgan table to determine the sample size which was 43. Forty three. (43} copies of questionnaire were distributed but 42 were filled and returned which gave a response rate of 97.8%. Data analysis of the bio-data variables were presented in frequencies and percentages. Answers to the three research questions were presented. The three research hypotheses were tested at 0.05 alpha level of significance and One-way ANOVA was used to test the hypotheses. The study revealed that good maintenance of medical records in any format largely depends on good storage, preservation and filing, while poor medical records maintenance resulted in misplaced and delayed access to patient's records. The study concluded that medical records maintenance is not effective because of the manual system they are using in maintaining the records.

CHAPTER ONE

INTRODUCTION

1.1 Background tothe Study

Records are documents in either electronic or print format that serve as evidence of an activity or transaction performed by an organization that require retention for some periods. A records retention schedule is a document stipulating 'the length of time a records series must be retained in active and inactive storage before its final disposition to permanent storage, preservation or destruction(Bryan,2012) Adeniran (2006) defined records as all transactions of an organization within and outside, in performing its functions, kept for future reference that maintain the organization's history and ensuring continuity of the organization's activities.Records contain information that is valuable resources and important business assets. A systematic approach to the management of records is essential for organization to protect and preserve records as evidence of activities and transaction. University of Pretoria (2010) stated that records constitute information that is recorded in any form, created or received routinely in the course of organization's business or correspondences; and retained by the organization as evidence of such activities. The International Standard Organization (2001) defined recordsas "information created, received andmaintained" as evidence and information by an organization or person, in pursuance of legal obligations or in transaction of business.

A medical record is record generated at the health institution during the process of treating patients as the hospital clients. These records are also known as Personal Health Record (PHR) and are usually characterized by amongst others, the nature and source of information contained. It is defined as "patient managed health records" (Clark and Meiris, 2006). Medical records are important documents meant basically for recording the treatment procedure for a patient. These records

areimportant to both the patient and the doctor. It is the only crucial and effective weapon doctors use to counter the false claims of the patients when they file a case against them. As such, both outpatient treatment and impatient management should be documented completely and carefully by the health workers including all preoperative instructions, prescriptions and content recorded carefully (Consumer Protection Act, 1986). Clark and Meiris (2006) also underscored the point that the web–based Personal Medical Records (PMR), created during e-health services, assist clinicians with patients' engagement, lifelong health information coordination and information access to both patients and health service providers.

Personal Medical Records (PMR) brought about effective communication between patients and service providers, improves efficiency in medical practice and increased drug security via interaction and contra-indication checks. Properly preserved medical records will enable the evaluation of patient care, medical investigations and medically related administrative decision-making and problem-solving. This implies that records management is crucial to the successful management of the health services and it is deemed necessary for any health system, including an e-health system.

Medical records exist in different forms or formats, irrespective of sex, age, or status. For effective and efficient health care delivery, different types of medical records are created so that the health need of patients with different health challenges is met. The medical records therefore, are powerful tools which allow the physician to track the patient's medical history and also identify problems or patterns that may help determine the course of health. They enable physicians to offer quality health to their patients. They are living documents that tell the history of patients and each encounter they have had with any health professionals involved in delivering any of the health services to the individuals/patients. Furthermore, a complete and accurate medical records will meet all legal, regulatory and auditing requirements when the need arise. (Public and Physician Advisory

Services, 2012). Kukah (2005), listed medical records as identification records, clinical records, treatment notes, laboratory records, obstetrics records, new born records, ambler records, radiology, physiotherapy records, doctor's orders,and family planning records.It also includes any other document (record) created for the patient in the process of any health service delivery. These records are either created as the patient visits the health centre or received either by way of referral or transfer cases all for the purpose of rendering a particular health service delivery. Since these are records created by different health professionals for different purposes, they must then be well captured with content well and clearly stated so that the purpose will be achieved.

AccordingtoNgoepe (2004), sound records management is the heart of good public management since government services are dependent on access to information. This is because every single activity in government service requires accountability and transparency for proper governance. The State Records New South Wales (2004) emphasized that records are used to prove 'what happened, why and by whom'. Records service as a tool for easy accountability and are necessary to meet legal, financial and accountability requirements. In medical records, all the transactions performed during interaction between patients and service providers need proper management for accountability and also to meet legal, financial and administrative requirements. This implies that a successful health records system needs maximum support for proper records keeping and maintenance.

Both paper-based and electronic patients' medical records are created simultaneously as each patient consults. The paper format entails all information about the patients, such as personal detail like dates of consultation, financial status for consultation, prescriptions, diagnosis and treatments. Electronic formats only cover the personal details such as dates of consultation and financial status (whether the patient paid for consultation or still owe the hospital money)

The medical record is made up of a number of forms, which are all used for a specific purpose. The basic sets of forms in the inpatient medical records include:

1. Front sheet or identification and summery sheet, which covers identification, final diagnosis, diseases and operation codes, and attending doctor's signature.
2. Consent for treatment is often on the back of the front sheet and must be signed by the patient at the time of admission. There are two parts to this form. The first half of the form is a general consent for treatment and the bottom half is consent to release information to authorized persons.
3. Correspondence and legal documents received about the patient, e g referral letter, requests for information e t c .
4. Discharge summery, if required by the hospital/health authority.
5. Admission note, including the patient's family medical history, the patient's post medical history, presenting symptoms,results of physical examination, provisional diagnosis(reason the patient came or was brought to hospital), proposed tests and care.
6. Clinical progress notes recording the patient's daily treatment and reaction to that treatment written by the attending doctor and other health professionals;
7. Nurses' progress notes recording daily nursing care including temperature, pulse and respiratory charts, blood pressure charts e t c.
8. Operation report if an operation occurred or operation performed;
9. Other health care professional note, e g physiotherapy, social workers, e t c.
10. Pathology reports including hematology, histology, microbiology, e t c.
11. Other reports – x-ray, e t c.
12. Orders for treatment and medication forms listing daily medications ordered and given with signatures of the doctor prescribing the treatment and the nurse administering it,

13. Special nursing forms for observation of head injuries e t c.

Management **of**medical records is the art and science of managing all information relating to the operation of a health practice. This includes filing and storing patient charts, scanning, medical records, ensuring adherence to regulations and retention schedules, and managing the destruction of medical records after their retention period. Medical records management also involves effective administration of a practice of non-clinical information including accounting records, contracts, and other business-related documentation (Shoreline, 2007). Hospitals and other organization that manage their records properly are rewarded with several benefits. The benefits include, but not limited to, easy retrieval and access to records, ability to prevent and tract fraud and corruption, ease to follow informed problem-solving and decision-making and the protection of organizations against legal charges/claims (litigation). The organization is also able to comply with pieces of legislation as well as professional administration and accountability. Gerntholtz van Heerden and Vine (2007) endorsed that electronic medical records (EMRs) make records management even better since it enable a quicker and cheaper clinical documents compilation, patient summaries formation, information retrieval and diverse clinical information audits. Bhana (2008) states that records keeping are enabler since, without it, things like auditing and financial management will not be possible. Records can be used to support businessactivities, decision-making and accountability. Proper records management assists the organizations in preserving well-organized records in their business. This is due to the fact that a well-organized medical record has the following advantages;

1. It enables the hospital to find right information easily and comprehensively;
2. It enables the organization to perform its functions successfully and efficiently and in an accountable manner;
3. It supports the business, legal, and accountability requirement of the organization ;

4. It ensures the conduct of business in an orderly, efficient and accountable manner;
5. It ensures the consistent delivery of services;
6. It allows continuity in service delivery when staff leaves
7. It supports and document policy formation and administrative decision-making
8. It provides continuity in the event of a disaster;
9. It protects the interests of the organization and the right of employees, clients and present and future stakeholders;
10. It supports and document the organization's activities, development and achievements;
11. It provides evidence of business in the context of cultural activity and contribute to the cultural identity and collective memory of the nation (National Archives and Records Service of South Africa,(2007)

Records maintenance is an important phase in the records lifecycle. Records maintenance ensures orderly organization and storage of records so as to properly position them for easy retrieval for decision-making. Maintenance is the process of preserving a condition or situation or state of being preserved. Michael (2010), listed three types of maintenance operations: preventive, operational and corrective maintenance. In preventive maintenance, care and servicing by personal for the purpose of maintaining equipment and facilities in satisfactory operating condition, by providing for systematic inspection, detection, and correction of incipient failure either before they occur or before they develop into major defects. Maintenance includes tests, measurement, adjustment, and parts of replacement, performed especially to prevent faults from occurring. The primary goals of maintenance are to avoid or mitigate the consequences of failure of equipment or facilities/document. This may be by preventing the failure before it actually occurs with planned maintenance and condition based maintenance to achieve. It is designed to preserve and restore equipment and facilities reliability by replacing worn components before they actually fail.

Operational maintenance is the care and minor maintenance of equipment/ facilities using procedures that do not require detailed technical knowledge of the equipment's or systems function and design. This category of operational maintenance normally consists of inspection, cleaning, servicing, preserving, lubrication and adjusting as required.

Corrective maintenance is a maintenance task performed to identify, isolate, and rectify a fault so that the failed equipment, machine, or system can be restored to an operational condition within the tolerance or limits established for in-service operation (Morow, 2011).

Records maintenance therefore, is a very important aspect of records management program.This is because records need to be properly maintained in order to be organized and arranged for effective utilization. Records maintenance has occupied an important position in information management cycle. Records maintenance ensures orderly organization and storage of records so as to properly position them for easy retrieval for decision making In view of this, Steward (2005) observed that one sure way to cause chaos in an office is for administrators to leave materials, which should be put in their proper orders in files lying around because no one know how to maintain and get them into the system.

In many other organizational tasks or work activities, records maintenance is introduced for certain purposes, ensure availability of relevant and timely information. Relevant and timely information will always be available if records are properly maintained. Records maintenance is also there to improve compliance with legal and regulatory requirements and community expectations. The improvement of knowledge sharing, retention and access to organizational memory would also be guaranteed. Furthermore, it ensures better management of risks with the availability of evidence; providesevidence on organizational actions and decisions taken. Proper records keeping would also decrease storage, material and labor costs (Man, 2005, Swan; Cunningham: Robertson 2002; Carvalho, 2001).

Furthermore, Willis (2005) showed that with a sound and proper information and records maintenance system, the organization will have the ability to comply with the six key organizational requirements which are transparency, accountability, due process, administrative compliance, statutory and commonlawas well as the information security. Effective and proper records maintenance ensures that:

1 .Complete records are protected

2 .Records can be located when needed.

3 .Records andnon-record materials and personnel papers are maintained separately.

4 .Identification and retention of permanent records are facilitated.

5 .Contribution is made to economy of operations by facilitating records disposition.

1.2 Statement of the Problem

Medical Records are vital assets in ensuring that health institutions are governed effectively and efficiently. The information recorded is eventually used to confirm the patients' health history during current and future consultations. The paces which are retrieved and served for this purpose determine the patient waiting time for the services which consequently impact on the quality of the service rendered by the health institution. For instance, United State Department of Health and Human Services (2006) reported that in health service institutions, the ratio for missing medical records is 1:7. This means that for every seven patients consulting at the health institutions, one medical file would be missing. It can be deduced that this is the result of ineffective records maintenance.

Records in hospitals are also used to collect and validate statistical information daily. The statistics collected are used to regularly review the hospitals monthly performance in all activities. It is through proper records management that the data collected can be complete and accurate. To improve these, Barry (2001) argued that organizations need to come up with an electronic system to comply with and

implement electronic records management as a necessity. It is legitimate options are eventually cheaper in terms of money, time and energy to ensure speedy service delivery

Despite the fact that patient's records in hospitals are very vital, the researcher observed that patient's records inGeneral Hospitals in Katsina State were missing, misplaced, mutilated, or incomplete files. Wamukoya and Mutual (2005) stated that, poor records management is guaranteed to result in information gaps that lead to inadequate records and the loss of document heritage. As a result, cases of lost or misplaced patient's medical records/documents as well as mutilated or incomplete files become common occurrences. This and other reasons prompted the researcher to assess the records maintenance in Katsina State General Hospitals.

1.3Research Questions

The study addressed the following research questions: -

1. What types of medical records are being stored inGeneral Hospitals ofKatsinaState?
2. What types of devices are used in storing medical records in General Hospitals of Katsina State
3. What types of medical records filing system are adopted in the GeneralHospitals ofKatsinaState?
4. What methods are used in preserving medical records in General Hospitals of KatsinaState?

1.4 Hypotheses

The following null hypotheses were advanced to guide the research:

$HO_{1:}$ There is no significant difference in thetypes of medical records stored in General Hospitals ofKatsina State.

HO_2There is no significant difference in the devices used in storing medical records in General Hospitals of Katsina State.

$HO_{3:}$ There is no significant difference in the filing system of medical recordsadopted in General Hospitals ofKatsina State.

$HO_{4:}$ There is no significant difference in the method used in preserving medical records in General Hospital ofKatsina State.

1.5 Objectives of the Study

The followingwere the objectives of the study

1. To identify the types of medical records stored in General Hospitals of Katsina State.
2. To find out the devices used in storing medical records in General Hospitals of Katsina State
3. To identify the types of filing systemfor medical records adopted inGeneral Hospital ofKatsina State.
4. To find out the method used inpreserving medical records in General Hospitals of Katsina State

1.6Significance of the Study

The study was deemed to be significant to the General Hospitalsin Katsina State because it would provide analysis of records management and demonstrate the shortcomings of current records keeping practices of the General Hospitals in KatsinaState, Ngolube (2003) stated that "research into records management trends and practices can lead to a better understanding of records management problems and challenges, as well as providing solutions to what is done, and how resources should be used." This research however, was expected toprovide solutions to the challenges that exist in the maintenance of medical records in the selected General Hospitals in Katsina State. Finally, the research would contribute to the body of knowledge especially in areas of storage, filing, preservation and general maintenance of medical records.

1.7 Scope of the Study

. This study covered some selected General Hospitals of Katsina State which includethe following local Government where the General Hospitals are situated:Katsina, Daura, Dutsinma, Kankara, Mani, and FuntuaGeneral Hospitals..

1.8Operational Definition of Terms

The following terms were defined operationally to ease their understanding and usage in this study.

Assessment: is the act of judging how medical records are maintained in Katsina State General Hospitals.

Medical Records:these are the types of records generated or received at the health institutionin Katsina State during the process of treating patients as the hospital clients.

Records: These are documented information ineither electronic or print format that serve as evidence of the activities or transaction inKatsina State General Hospitals

Record Maintenance: -Is the process of preserving medical records in Katsina State General Hospitals.

RecordsManagement: The systematic control of all records in Katsina State General Hospitals from their creation or receipt through processing, distribution, organization, and retrieval to their ultimate preservation and disposition.

Record Maintenance: -Is the process of preserving medical records in Katsina State General Hospitals.

References

Ayeni, J. (2000)Information and Records Management in Nigeria: Problems and Prospectors Lagos Nigeria.

Barry, R.E (2001), Electronic Document and Records Management System, Toward Methodology for RequirementsDefinition, available: http://www.caldeson.com/barryi.html#six (accessed 03/04/2008.

Bak, N. (2004), Completing Your Thesis: A Practical Guide Pretoria: Vanschalk Publishers.

Bryan, E.O. (2012). The Records Classification System: An Introduction; A presentation at the staff Development Programme of Caribbean Centre for Development Administration.

Clark, .J.L and Meiris, D.C (2006), Electronic Personal Health Records Come of Age American *Journalist of Medical Quality*, 21:21.

International Standard Organization. (2001). ISO 15489 -1 Information and Documentation and Record Management Part I: General, Geneva International Standard Organization.

Ngoepe, M.S, (2004) Accountability, Transparency and Good Governance: the National Archives and Records Services of Source South Africa's roles in helping Government to Better Services Delivery to the South African's Paper Presented as the Seventh LIASA Annual National Conference, Polokwane, September to October Available :http//www.liasa.org.za.conference.conference 2004/paper/liasa conference 2004ngoebepdf Accessed 29/08/2010

Ngulube, P. (2003), Preservation and Access to Public Records and Archives in South Africa, PhD Thesis, Pietermaritzburg: University of Natal. Available at: http//www.hs.unp.ac.za/infs/thesispn.pdf#search=patric%20ngulube. Accessed 12 march 2011

Oxford Advance Learners Leaner Dictionary (2006) 6th Edition Oxford English.University of South Africa (2010) Records Management Policy.Available:http//www.cm.unisa.ac.za/contents/departments/corp_policies/docs/recordsmanagementpolicy-mancom-15may07.pdf. Accessed 20 November 2010

University of Manchester. (2010),Records Management Office Accessed 18 April 2011. Available at: http:www.campus.manchester.ac.uk/recordsmanagement/record%20management/

United State Department of Health and Human Services.(2006). Consumer Awareness Addressing Health Care Connectivity as a Matter of Life and Death. Available; http//www.hhs.gov/heathinformationtechnology/consumerawareness.html (accessed31-03-2008)

University of Pretoria (2011) Records and Management.Available at http//www.is.up.ac.za/recordmanagement/. Accessed 4 February 2011

Wamukoya, J. &Mutula, S.M. (2005) 'Capacity- building requirements for e- records management: the case of East and Southern Africa' .Records management journal, 15(2): 71-9, Accessed 11Febuary 2010. Available at: http:// www.emeraldinsight.com/Insight/viewContentItem/

Willis, A. (2005) Corporate Governance and Management of Information and records, Records Management Journal, (15) 2: 86-97

Yusof, ZM and Chell,R,W(2005) The Records; life Cycle: An Adequate Concept for Technology – Generated Records. *Information Development*, (16) 3:135-141.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

The chapter reviewed literatures that are related tothisstudy. The review was done under the following sub- headings

2.2 ConceptofMedical Records

2.3 Medical Records Maintenance

2.3.1 Reason for the Maintenance of Medical Records

2.3.2 Storage of Medical Records

2.4 Medical Records Filing System

2.4.1 Alphabetical Filing

2.4.2 Numerical Filing

2.4.3 Alpha- numerical Filing

2.5 Medical Records Preservation

2.6 Summary of the Review

2.2 Concept of Medical Records

Medical records are the types of records generated at the health care institutions during the process of treating patients as the hospital clients. as known as a Personal Health Record (PHR) and

are usually characterized by, among others, the nature and sourceof information contained. They are defined as "patients: managed health records". (Clark and Meiris 2006). Medical records exist in different forms or formats irrespective of sex, age, or status. For effective and efficient health care delivery, different types of medical records are created so that the health need of patients with different health challenges is met. The medical records therefore, are powerful tools which allow the doctor to track the patient's medical history and also identify problems or patterns that may help determine the course of health care. They enable physicians to offer quality health care to their patients.

Furthermore, a complete and accurate medical records will meet all legal, regulatory and auditing requirements when the need arises, (Public and Physician Advisory Services, 2012)Kukah (2005), listed medical records as identification records, clinical records, treatment notes, laboratory records obstetrics records, new born records ambler records, radiology, physiotherapy records, doctors' orders, family planning records, etc. These records are either created or received either by the way of referral or transfer cases, all for the purpose of rendering a particular health care service delivery. Since there are records created by different health professionals for different purposes, they must then be well maintained and clearly stated so that the purpose will be achieved.

Medical records form essential part of a patient's present and future health care. As a written collection of information about a patient's health and treatment, they are used essentially for the present and continuing care of the patient. In addition, medical records are used in the management and planning of health care statistics (WHO, 2006). Doctors, nurses, and other health care professionals write up medical records so that previous medical information is available when the patients return to the health care facility. The medical records must therefore be available. This is the job of the medical records worker. If a medical record cannot be located, the patient may suffer

because information, which could be vital for their continuing care, is not available.If the medical records cannot be produced when needed for patient care, the medical records system is not working properly and confidence in the overall work of the medical service is affected. (World Health Organization, 2006). In view of the above medical records have to be properly preserved, protected and maintained.

The main purposes of medical record are:

1. To record the facts about a patient's health with emphasis on events affecting the patient during current admission or attendance at the health care facility, and
2. For the continuing care of the patient when they require health care in the future.
3. To document the cause of patient's illness and treatment.
4. To communicate between attending doctors and other health care professionals providing care to the patient.
5. For research of specific diseases and treatment.
6. For the collection of health statistics.

2.3 Maintenance of Medical Records

Maintenance is a work that is carried out to preserve information resources/ records in order to enable its continued use and functions, above a minimum acceptable level of performance, over its design service life, without unforeseen renewal or major repair activities. Maintenance is carried out at predefined intervals in an attempt to reduce equipment/records failures or to ensure a consistent appearance of the records.

Maintenance of recordsis one of the stages of a records lifecycle. It is the stage in which records are preserved by the records manager and records management clerks. Records are also used by government officials and stakeholders at this stage. For example, when patients have further

consultation or follow-up visits, the doctor will request the file created during the previous consultation from the Records Management Unit. This is because the file contains records or information about the previous consultation, treatment and prescriptions. The doctor also needs the file to update it withinformation related to the current consultation, treatment and prescription. The doctor will use the file and return it to the Records Management Unit for filing and maintenance. The file will be maintained by filing it in the right storage place and shelf as classified for easy futureretrieval. It will also be protected against exposure to dangerous hazards like water, fire, rough handling, dust, ultraviolet rays, humid temperature, insects, rodents, vandalism and theft (National Archives and Records Service of South Africa 2004; National Archives and Records Service of South Africa, 2007). This will ensure that the quality of the records is maintained throughout its lifespan until such time as it has to be disposed off.

2.3.1 Reasons for the Maintenance of Medical Records

Maintenance serves to protect the records in a number of ways:

1. Physical integrity: to keep the assets in good working order so as to minimize disruptions and downtimes.
2. Risk management: to keep the assets in a state of good repair for the owners' healthy and safety.
3. Aesthetic preservation: to keep the assets from deteriorating in appearance and becoming unsightly.
4. Responsible stewardship: to ensure that the assets achieve their full potential service life.
5. Fiscal responsibility: to leverage efficiencies that can be reflected on the owners' balance sheet.

6. Duty of care: to satisfy a legislated duty that is owed to owners, occupants and quest on the property.

Duty to mitigate: to prevent unnecessary damage to assets that may result in their premature failure.

2.3 .2 Storage of Medical Records

One sure sign that an organization has an effective records management program in place isthat it stores and maintains its records securely and efficiently. Cost-effective, secure storageSystemthat provide quick and rapid retrieval of records, will help ensure the ready availability of recordsin case of litigation and audits, as well as for future reference use. (Noris, 2003), some indications that a good storage program is in place include:

1. Proper shelving is used to store records.
2. Vaults are used for the most valuable records.
3. Electronic data backup procedures are in place and are routinely followed.
4. Fire prevention systems are in place in storage areas.
5. Adequate environmental controls exist in storage areas.
6. Security rules and procedures are in place and followed.
7. Recording format standards are complied with.

Storage is one of the principles in the management of records and information. Diebold, (2005) noted that one of the basic functions of an office is storage and retention of information for future use. They are determined by the need to protect records against:

1. Loss through careless handling
2. Damage by trampling under foot
3. Loss by fire or water
4. Deterioration through dust or dampness

5. Prevention of theft or unauthorized access
6. Misuse and abuse
7. Delay in locating and retrieving for usability.

It follows therefore, that the physical design of storage area or space must facilitate proximity of active files, comfort of staff and easy retrieval.

Similarly, the management of storage equipment and furniture must promote easy access, quick reception of inquiries and request as well as smooth contact or intervention between staff working there. This is why appropriate and secured storage space, with good ventilation and lighting is a solution to the problems of managing medical records.

Records storage as the housing of records when they are semi-active or inactive but must still be retained.(Penn, 2006). Those records that are rarely used but that must be retained for occasional reference, for auditing or for legal or archival reasons are less expensively stored outside the office area.According to Read etal, (2002), storing is the actual placement of records into storage containers, a physical task of great importance in an office. A misfiled record is often a lost record; and a lost record means loss of time, money, and peace of mind while searching for the record.

The time at which records are actually put into the storage containers depends on the workload during the day. In some offices, storing is the job performed first in the morning, in others, all storing is done in the early afternoon; in others, storing is the last task performed each day. In a centralized filing department, storage takes place routinely throughout the day, everyday storing, retrieving, and re-storing. With the emergence of Information and Communication Technologies (ICT), records are stored in a devices, such as Computer, CD-ROM, CD Flash Drives, Hard Disk, Memory Card e t c .

Storage rooms and basement are only suitable for the storage of paper file. If storage area must be created, the following should be considered:

1. Location - convenience to the office
2. Size- including room location for growth
3. Access
4. Security
5. Fire protection
6. Temperature/humidity controls
7. Shelving
8. Water/flood prevention
9. Floor load
10. Work areas/lighting
11. Ventilation

The use of storage rooms and basement storage areas can seriously undermine a filing system unless the same procedures for files maintenance in the office are applied to records store in these areas.(Shoreline Records Management, 2014). Medical records storage is a vital concern for practices, clinics, and hospital of every size. As requirements for medical records management continue to change, practices need to stay updated on the latest regulations and ensure that they are in compliance with the latest records retentionrequirement(Ameri Health, 2015).

Medical records are stored in a secure manner that allows access to authorized personnel only. Protected Health Information (PHI) is protected against unauthorized or inadvertent disclosure and staff receives periodic training in confidentiality of member information. Medical records are safeguarded against lost or destruction and are maintained according to state requirements. According

toAmeri Health (2015) a planned and systematic approach to storage of records will benefit organizations by ensuring that the records within their custody as follow:

1. Locatable (that is, the records are identifiable, their location is known, and they are retrievable).
2. Secure from unauthorized access.
3. Preserved so that they may be used for the duration of their retention period.

Records may be stored in storage areas or storage facilities, storage areas are rooms, vaults, cupboards, compactuses, and shelves.. Storage facilities are buildings, whose sole purpose is to store records. All records should be appraised before being placed in storage to determine the retention period and disposal action. This is to ensure that the records are managed properly whilst they are in storage by knowing:

1. The length of time the records may be held in storage device.

2. The services or resources that may be required when it is time to dispose of them.

Records held in storage need to be managed to ensure their ongoing preservation and accessibility for long as they are required to be kept. Once a record is no longer current, it ceases to be actively used and managed. This can have a detrimental effect on the records (especially for digital records) as the quality of a record that is not actively managed deteriorates rapidly. The information on records stored in poor conditions may well be lost and therefore not available when the organization requires it (Archives of New Zealand, 2007).

Archives of New Zealand (2007) providedcriteria for the implementation of the storage standard which will enable effective management of storage activities, which include:

1. Undertaking appropriate authorization process for storage areas and facilities

2. Inspection of storage areas, facilities and records in storage as part of an ongoing monitoring process.

3. Conducting risk assessment and mitigation to ensure that storage areas and facilities are in appropriate locations and constructed from materials to assist with the preservation of records.

4. Ensuring that records are store in conditions that preserve them for the duration of their retention period.

5. Development and implementing sufficient systems and procedures to facilitate effective and efficient identification and control of records in storage.

6. Ensuring that appropriate security measures are in place to protect the records.

7. Developing and implementing an ongoing maintenance programmed.

8. Implementing an endorsed disaster preparedness, management and recovery programme.

Therefore, storage accommodation for records should be clean, tidy, secure, prevent damage to the records and provide a safe working environment for staff.

2.4 Records Filing System

In a recent survey of some registries and store rooms in public sectors like hospitals in Nigeria, Longe (2003) observed that many files have inaccurate titles and some records are misfiled either inadvertently or deliberately. He pointed out that in most ministries, the file circulation systems are ineffective and a great deal of time is wasted to locate files. These results in poor information flow to decision makers. Filing is the process of arranging and storing records in an orderly manner so that they could be located with ease as at when required. Alegbeleye (2000) defined filing system as the preparation and placement of records into appropriate place so that they can be reached and used at appropriate time.

The efficiency of a filing system depends not only upon use of the most suitable equipment and method but on the ability and reliability of the staff responsible for filing. Stewart (2006) observed that one of the most frequent sources of delay and annoyance in filing is to find that folder has been

removed from its pace in the cabinet and a lengthy, irritating search all over the office is necessary to trace it. In the same view, Penn et al, (2004) stated that the movement of files creates a conflict of interest between registries/record room and their users. For registries/record room they create headaches, bid for the users whom the registries/record room serves, the files exist to be moved and used. Thus, to avoid this he stated that a file location system has to be maintained and this can be achieved most effectively by replacing a file by a location card when it is taken out or sent from the registry record room. The location file will show the title and file reference, the date on which it was taken out, and the name of the officer/person who has it. One such card can be made out for every file as it is created and rest inside the file cover when the file is in place in the registry/records room.

According toAjewole (2000), filing is an age-long means of preserving records and information, and a tool in the effective management of records and information. This shows that filing is essential for management and maintenance medical records.The filing system should be organized so that records can be protected against loss and damage. As it is, the hospitals records especially paper records are not kept in a safe environment neither are they classified- accordingly(Mnjama, 2004)

Likewise, Harward Library (2013) stated that good records arrangement will benefit an organization in the following;

1. Control costs associated with records and information management
2. Improve efficiency and access to information
3. Meet compliance obligations
4. Minimize the legal risks posed by inadequate records management practices
5. Ensure that permanent and historical records are captured and maintained

In the medical field, filing is one of the essential processes when it comes to the management of information. If one does not file his records and keep them safely, retrieval of information in time of

need may be greatly impaired.Akor and Udensi (2013) stated elaborately that the fundamental benefit in records arrangement is that it facilitates timely and efficient decision-making, promotes public participation, informed future decisions, produces evidence in litigation cases, increases accountability of decision makers and fast-track service delivery. Different methods of arranging medical records will impact the maintenance of records and retrieval of information. Wilburta et al,(2009), listed some types of filing system which are commonly used in filing arrangement which are designed to file and reference records in different ways: alphabetical, numeric, alpha- numeric and subject filing system.

2.4.1 Alphabetical Filing

With alphabetical filing, medical records are organized using the last and first names. This makes it easy for one to locate medical records for appointments. These types of filing system expedite the information retrieval process but lacks confidentiality; a patient can be easily identified this way, but name must be visible to do so. The most common record arrangement is the alphabetical order. Uhegbu (2007) stated that alphabetical system of arrangement arranges files according to the sequence of letters (alphabetic) from A-Z.

2.4.2Numerical Filing

A numeric system files medical records in a chronological order. There are three types of straight numeric filing systems used in storing medical records: the unit numbering system, the serial unit numbering system, and the serial numbering system. In the serial numbering system, every patient receives a new number every time he/she is treated at the hospital. If one visits the hospital five times, he gets five different medical record numbers. Unlike the serial numbering system, with serial unit numbering despite receiving a new medical record number, one's previous records are brought forward and filed by the number that was issued to him latest. As for the unit numbering system, one

is assigned one medical record number during your first visit, which is applicable in all subsequent treatments and visits. The straight numeric filing method increases client confidentiality and makes it easier to retrieve information. Another advantage is that office personnel can be easily trained on its usage.

2.4.3 Alpha-numeric Filing

Alpha-numeric filing is the classification of records by codes. The codes give information about the contents of folders. Alpha-numeric filings are divided into two types: subject files and name files. Subject files follow encyclopedic arrangement with numeric coding of records and folders. Name files are usually filed alphabetically with names arranged in sequence according to exact spelling, and are dependent on the accurate interpretation of the spoken or handwritten name.

2.5Medical RecordsPreservation

Feathers and storage (2005), defined preservation as the maintenance of collection and individual object as close as possible to the original condition through appropriate housing, handling, repair and conservation treatment.The preservation of records is not a new phenomenon. Ancient civilizations entrusted record keepers with this task of memorizing documents. Gradually the increase in records creation has prompted the need to store records in better ways. Consequently, records are kept in physical form on shelves, resulting in the first collections of various records. The preservation of records facilitates continuity in decision-making while providing substantiation of precedent activities and historical superiority for future generations.

With the introduction of moderntechnologies, a record keeping is moving from manual to electronic format. A lot of records are now preserved in a range of technological systems e.g. emails, database etc. and archived for later access. However, it is important to note that while technology has

significantly, eased access to records; it also allows the authentication and authorization of access to records by people who are not authorized to have access to particular documents. In order to preserve records effectively, everyone involved with records management or preservation must share the responsibility for their physical security and protection.

Once vital records are properly stored, they must be preserved for long term use. Preservation is described in a number of different ways which include:

1. Process and operations involved in ensuring the technical and intellectual survival of authentic records over time.
2. Protection of cultural property by minimizing chemical and physical deterioration. Improving storage condition and environmental control plays a big part in this. The primary goals of preservation are to prolong the existence of cultural material.

The objective of preservation is to ensure that information survives in an accessible and usable way for as long as it is wanted. In most instances, this implies that the survival of the information for the same period of time as the physical medium in which it is contained such as manuscript, a printed book or a photograph. Information will be lost if the medium that carries it is not preserved in a usable form. To effectively provide information to users, both information and means of housing it must be in good condition. Therefore, preservation of records:

1. Ensure integrity of records
2. Increase confidence in the organizations information network
3. Minimize loss of records and information
4. Give early warning signal of vital records
5. Guarantee accurate indexing classification of records

6. Check rapid deterioration or degradation of records.
7. Ensure retention of the value of corporate records and information assets.
8. Validate current and future quality and condition of records and Information.
9. Speedy location of closed files or records and information when requires for legal, financial and administrative purpose.

The prominent inhibitors to effective and efficient preservation of information materials and recordcentres include the following:

1. Inadequate finance: Almostall African archives and record centers do not allocate adequate funds in their annual budget for preservation and conservation of information materials in their holdings. This has really caused the low priority or lack of desire attention given to the preservation of records by management of such organizations.
2. Inadequacy of equipment/materials: Lack of suitable or inadequate equipment and materials contributes significantly to thepresent poor status of preservation of medical records. Some of the essential materials and equipment required for setting up functional preservation and restoration in records centres are not available locally (ESARBICA,2002).
3. Unfavorable Government Economic Policies: The economic policies of most African governments do not favour records services, so preservation activities are not given the priority attention they deserve. Such economic policies include those concerning high duties and tariffs charged on imports of preservation equipment.
4. Tropical climate: The effect of tropical climate of excessive temperature, high relative humidity, dust, and rodents that feed on paper-based materials caused rapid deterioration and decay of information materials in African records centers. These agents of rapid deterioration

and decay of information resources add more to the costs associated with preservation and restoration of records (UNESCO, 2009).

5. Manpower and other infrastructure: For any preservation programmed to succeed in records centers there must be adequate and well- trained manpower (Ngulube, 2001). This is because preservation of information resources is a specialized field of knowledge that requires records professionals who understand the physical and chemical nature of the materials in their records holding. Popoola(2009) advocated the need to expose records managers and archivist to preservation and restoration practices during their training. Akussah (2006) cited in Popoolainclude operating environmental control, storage and housing, operating environmental systems, designing new buildings or renovation of buildings.
6. Lack of preservation and conservation policy: Most African countries do not have a national information policy which makes the formulation of preservation policies in records centers (Wamukoya andMutula, 2005).
7. Quality of paper and ink: the low quality of paper and ink use in the production of records especially paper- based records in records offices pose serious danger to preservation of records in African countries (Popoola, 2009).

The long- term preservation of records will be dependent upon a number of factors, including temperature and humiditylevels, protection from pests, the effective management of any mould-affected items, air quality and the effect of natural light, protection from these, combined with an effective maintenance programmed, risk assessment and mitigation strategies, will ensure the long- term availability of records. International Standard Organization (2003) listed some preventive measures which include:

1. Maintaining a cool, dry, ventilated and clean environment.
2. Perimeter spraying of the building to discourage pest and vermin.

3. Preventing the accumulation of rubbish or food in the storage area (this will remove food sources from the storage area).
4. Carefully selecting furnishing materials and floor coverings to exclude those that attract insects.
5. Configuring the shelving so that the bottom shelf is 100- 150cm from the floor to enable cleaning and air circulation.
6. Designing the storage operation and processes so that records are inspected for infestation before they come into contact with records already in storage.
7. Regularly inspecting the site for pest and vermin.
8. Using pest control traps and baits.

Preserving records effectively means that documents must always be placed, handled, consulted and displayed in a way that minimizes the risk of damage and take into account their sizes, shapes, and physical conditions. The records must be stored in a safe and secure location and displayed under appropriate preservation conditions (e.g. avoiding areas of unsuitable temperature and humidity or areas directly affected by ultra violet light) and if they are moved, they must be moved with care between locations. Proper accounts must be kept at all times of the precise location of all records, including those temporarily withdrawn or undergoing administration (i.e. referencing, cataloguing, etc.). In cases where serious damage or loss has taken place, it is imperative for the right staff to be alerted immediately in order for corrective measures to be taken.

At a higher level, preservation connotes for more than keeping a material in its original form or being familiar with all reformatting technologies available. It also means accessibility, when a user needs it, he gets it. Hence the whole process of security, shelving, and circulation are usually preservation from abuses, like mutilation, defacing and stealing or records are preservation tenet. These are done

to ensure longevity of the lifespan of records. According to Horneby (2007), preservation implies the state of being or remaining in a stated condition after a longtime.

The deteriorating state of records, gives rise to preservation and security needs. In the course of preserving records, there is need to adequately consider the value of records in terms of educational socio-political and economic impact, and decide the period during which each class of records or document might be kept for use and then destroyed or permanently preserved for future use. Records by their nature are susceptible deterioration; preserving and securing item becomes ultra-important. In assessing records, it is mandatory to consider their durability in relation to their usage. In order to retain information contained in all media of communication for effective use in the future, there is the need toeither preserve, conserve, or affect both activities on item.

2.6 Summary of the Review

The literature review have revealed what other writers have said about the concept of records, as written, documented, and captured or printed information capable of providing evidence of an activity. Records, undeniable are rich primary sources of information with evidential administrative, research, fiscal, historical and litigation value that are generated in general hospitals to document information about patients. Medical records are the type of record generated at the health care institution during the process of treating patients as the hospital clients. Medical record include but not limited to patients folders, test and test result slips, diagnostic notes, admission note death record, Immunization records etc.The review went further to discuss record maintenance which is the work carried out to preserve information/record, in order to enable its continued use and functions, over it design service life, without unforeseen renewal or major repair activities.

The review also assessed the ways in which medical records are maintained such as storage, filing system and preservation. The review identified insufficient storage space, poor filing system and inadequate preservation as the key factors responsible for poor record maintenance in general hospitals resulting to loss, mutilation and incomplete records. From the literature reviewed none them assessed medical records ofgeneral hospitals in Katsina State. As a result of this, the study stood to bridge this gap.

References

Ajewole, G. A. (2000). Presentation and Management of Information and Records,in Information and Record Management in Nigeria: Problems and Prospects Lagos: NIREM.

Akanji, D. O. (2005) Development of Medical Records in Nigeria: 3rd edition "the Journey so far" Nigeria: Onudin, pp 1-2.

Akor, P.U. and Udensi, J. (2013) An assessment of Record Management System in Establishment Division of Two Universities in Nigeria. Mediterranean Journal of Sciences.Rame – Italy 4(12) 87-96.

Akuezuilo, E.O.(2004), Research Methodology and Statistic NuelCenti (Nig.)Publication Co.

Akussah, H. (2006) Records Management in Ghana: An Overview. *African Journal of Library, Archives and Information Science, 6(2): 101-106.*

Alegbeleye, G (2000). Records and Information. Paper Presented at the Workshopon Records and Information Management Ibadan.

American Patient Application Service, (2015) .Electronic Medical Records System.Us: Uspc.Pp.37-49.

Barry, R. E. (2001). Electronic Document and Records Management System,toward a Methodology for Requirements Definition, Available:

Barry, R. E. (2004). Electronic Document and Records Management System,toward a Methodology for Requirements Definition, InformationManagement and Technology, 27(6), 251-256.

Bhana, P. (2008). The Contribution of Proper Recordkeeping Towards Auditing and RiskMitigation: Auditor General's perspective, Corporate Executive: Office of the Auditor-General . 10 November.

Buckland, M. (1990), Nature of Records Management Theory *American Archivist*,57, 346-351.

Clark,. J. L. and Meiris, D, C. (2006). Electronic Personal Health Records comeofage*American Journal of Medical Quality, 21:22.*

Cloonan, M. V. (2001). W. (h) Ether Preservation?*Library Quarterly*; 71(2) 231-242.

ESARBICA, (2002), Minutes of the ESARBICA. Executive Board meeting held at the mountainInn, Mbabane, Swaziland, 11-13 march, 2002.

Feather, J. (2005) Preservation and the Management of Library Collections. London: The LibraryAssociation.

Gerntholtz, T .Van Heerden, M.V. and Vine. G.G.(2007), Electronic Medical Records- WhyShould you consider implementing an EMR? The 21st century health care system isusing a 19th century paperwork system, CME, (25) 1: 24-28.

Harvard University Library (2013) Managing University Records: Overview. Harvard Library:Cambridge, MA 02138.

Harry and Steven, (2004), Exploring Archives: An introduction to archival ideas and Practice inSouth Africa. 2nd ed.Pretoria:NASA.
http//www.caldeson.com/rimos/barry1.htm1six accessed 03/04/2008.
http//www.record/new.gov.au/records.keeping/governmentrecoersKeepingmanual/document/recordskeeping. Accessed 29-08-2010.

International Standard Organization. (2003) ISO 15489-1 *Information and documentation andrecords management parts 1*: General Geneva International Standard Organization.

Johnson, B, and Christenson, L. (2004). Educational Research: Quantitative andMixed Approaches, Boston: Person.

Kukah, Y. (2005). Medical Records Managers UsmanDanfodio UniversityTeaching Hospital, Sokoto.

Lewis, J and Ritchie, J.E.(2003) Quantitative Research Practice, a guide for social sciencestudents and Researches, London: SAGA Publications.

Longe, H. (2003). Design Development and Implementation of Cost EffectiveManagement System in local Government Administration in Managementof Public Records and Information in Nigeria Problems and Prospects. Lagos: NIREM.

Man, E. (2005) A functional approach to appraisal and retention scheduling. RecordsManagement Journal, (15) 1:21-33.

Marshall, C and Rossman, G. (2006) Designing qualitative research 4th ed. California: SAGEPublications Inc.

Michael, Q.(2010) Preservation or Preventive World Words.

Mnjama,N.(2004).'Records and Information: the neglected resources. Paper read at Access Information Management Service' Annual Records Management Conference in Kruger National Park, SA, 18-21 May 2005.

Morow, L.C. (2011), Maintenance Engineering. Hand Book, Mcgraw Hill, New York.

Newman, L. W. (2006), Social Research Methods: Qualitative and Quantitative Approaches, 6thed. Boston, Pearson.

Ngoepe, M. S. (2004). Accountability, Transparency and Good Governance: theNational Achieves and Records Services of South Africa's Role in HelpingGovernment to Better Services Delivery to the South Africa's Paperpresented at the Seventh.

Ngulube, P.(2001), Guidelines and Standards for Records Management Education and Training:A model for Anglophone Africa. *Records Management Journal* 11 (3), 155-173.

Noris, Thomas. D. (2003). ‘’The Seven Attributes of an Effective’’ Archive TechnicalInformatiion Series 61 (2003) available at:

Osuala, S. (2005), Principles and Practice of Health Records Management., Nigeria, Royal ClassPrinting Pp 120-123.

Peen,I.A(2004)Records management Handbook 2nd EditionAlder Short; Gower p. 45.

Popoola , S,O. (2009).Preservation and Conservation of Information Resources. University ofIbadan, Nigeria: Distance Learning Center.

Public and Physician Advisory Services 2012.

Read-Smith, J,Ginn, M. L. and Kallaus, N. E. (2002). Records Management,Seventh Edition, Australian. South- Western Press.

Richard, C. (2005). Managing Institution Archives Foundational Principles andPractices.Green wood Press, Western, Connecticut.

Shellenberg, T. R. (2005). Modern Archives: Principles and Techniques, Chicago:

Shellenberg, T. R. (2006). The Management of Archived Columbia UniversityPress, New York.

State Records New South Wales.(2004) Introducing Records, Records Keeping andRecords Management,Intro.no.3:April available

Steward, ,J,R. (2006)Filing Systems and Records Management New York:MCGRAW Hill.inc.tsal,J and Bond (2007),A Composing of ElectronicHealth Centers ,*International Journal for Quality in Health Care* (20) 2:136.

Uhegbu, A.N. (2007). The Information User: Issues and Themes 2nd Ed. Abia State University, Uturu.

UNESCO, (2009).Safeguarding our Documentary Heritage. Retrieved may 12th 2007 from:http://webworld.Unesco.org/University of Chicago Press. P.16.

Upward, F. (2006).Structuring the Record Continuum Part 1: Post custodialPrinciples and Properties, *Archives and manuscripts Journal*, 24(2), 242-255.

Wamukoya, F. and Mutula, S, M. (2005) E- records management and governance in East and SouthAfrica. *Malaysian Journal of library and information science*, 10 (2) 67-83.

Wilburta Q, lindh,et al(2009), Comprehensive Medical Assisting: Administrativeand Clinical’’ Delmer.

Willis, A (2005), Corporate Governance and Management of Information and Records. *RecordsManagement Journal*, (15) 2:86-97.

World Health Organization (2003), Medical Records Manual: A Guide for DevelopingCountries; Western Pacific Region.

CHAPTER THREE

RESEARCHMETHODOLOGY

3.1 Introduction

The chapter presented the research methodology adopted in carrying out this research work. This chapter is organized under the following sub-headings:

3.2Research Methodadopted for the Study

3.3Population of the Study

3.4Sampling Technique andSampleSize

3.5Instruments for Data Collection

3.6Validity of the Instrument

3.7 Reliability of the Instrument

3.8Procedure for Data Collection

3.9 Procedure for Data Analysis

3.2 ResearchMethodAdoptedfor the Study

The research adopted for this study was the Survey method. This was because it is appropriate in allowing the researcher to collect and analyze data by studying the interrelation that exists among the variables. This is informed by Akuzuilo (2004) who observed that survey method is one in which a group of people or items are studied by collecting and analyzing data from the people of the entire group. According to Ndagi (2004) survey research is concerned with the collection of data for the purpose of describing and interpreting existing conditions, prevailing practices, beliefs and attitude on ongoing process. Aina (2002), stated that survey research is accomplishedthrough observation, interviews and administering of questionnaire to a relatively large representative sample

of the population interested in. Similarly, Creswell (2003) also asserted that survey research is a set of orderly procedures specifying the information to be obtained and from whom and how. Ifidon and Ifidon (2007) in the same vein viewed survey research as the type of research methodology that gathers data from a population in order to determine the current status of the population with respect to one or more variable. From another perspective,Bryman (2008) observed that survey approach allows a concentrated focus on a single phenomenon and the utilization of a wide array of data gathering methods.

The major advantage of survey research according to Osuala (2005) is that, it studies both large and small population by selecting and studying samples chosen from the large population to discover relative incidences, distribution and interrelation of sociological and psychological variables and by containing the entire population if is small. This is supported by Ali (2006) who stated that survey is a type of descriptive research which uses sample data to describe and explain what is existent or non-existent on the present status of a phenomenon being investigated. Thus, based on the gravities of survey research method the researcher considered it appropriate and adopted the research method for the study.

3.3Population of the Study

The Population for the study comprised of all the (20) general hospitals in Katsina State and the medical records managed. The subject of the study included all those responsible for the maintenance of medical records in Katsina State General Hospitals. They are records staff, as shown in table 3.1.

Table 3.1: Populationof the Study.

S/NO	GENERAL HOSPITALS	NUMBER OF RECORDS STAFF
1..	BatsariGeneral Hospital	06
2.	DanmusaGeneral Hospital	06
3.	DauraGeneral Hospital	08
4	DutsinmaGeneral Hospital	08
5..	FuntuaGeneral Hospital	06
6.	IngawaGeneral Hospital	04
7.	JibiaGeneral Hospital	06
8.	KatsinaGeneral Hospital	10
9..	KankiaGeneral Hospital	08
10.	KankaraGeneral Hospital	05
11.	KurfiGeneral Hospital	05
12.	Mani General Hospital	06
13.	MalumfashiGeneral Hospital	05
14.	MusawaGeneral Hospital	06
15.	Orthopedic General Hospital	03
16.	TuraiYar'aduaGeneral Hospital	06
17.	KaitaGeneral Hospital	04
18..	RimiGeneral Hospital	04
19.	Katsina Eye Centre, Katsina	03
20	Maternal and Children Center Malumfashi	03
	TOTAL	**112**

Source: Katsina State Hospitals Management Board Document as at 30th April, 2015.

3.4 Sampling Technique andSampleSize

Samplingprovides information required about the selection of the sample. It also provides a detailed foundation where the research sample was drawn and for a population that is enough for the selection of the subjects(Lewis and Bit chic,(2003).Johnson and Christenson (2004) established that sample served as representative of the whole population which is the sample frame because they are considered to be representative of the population. The researcher used purposive sampling method for qualitative data collection. Purposive sampling assists to identify and involve key participants out of the entire population who have better knowledge, understanding and information about the matter being studied. This depends on the researcher's knowledge about the participants in question (Kumar 2005, leedy and Ormrod 2005)

Forty three (43)Records Management Staff (respondents) were selected as sample from the six selected General Hospitalsin KatsinaState that manage medical records.TwoGeneral Hospitals were sampled from each of the Three Geo-political Zones in the State, which included Katsina Zone, Daura Zone, and Funtua Zone.Kielmanas cited in Ibrahim (2013) maintained that a sample size of 35 to 43% is adequate for a research population. Hence the researcher used 38% of the population of this research where 43 samples were obtained. Table 3.2 presented the sample of this study.

Table 3.2 Sample of the Study.

S/N0	GENERAL HOSPITALS	NUMBER OF RESPONDENTS
1.	KatsinaGeneral Hospitals	10
2.	DutsinmaGeneral Hospital	08
3.	DauraGeneral Hospital	08
4.	FuntuaGeneral Hospital	06
5.	KankaraGeneral Hospital	05
6.	Mani General Hospital	06
	TOTAL	**43**

.

3.5 Instrumentfor Data Collection

The research instrument that was used for this study was questionnaire. This instrument was carefully designed to enhanced data collection. The questionnaire for this research was closed ended type. Penwarden (2013) was of the view that the close-ended questions are used in order to collect data that is easily quantifiable. Also Krug (2015) believed that closed-ended questions allow the respondents to choose questions from the alternatives that will match their opinions.

The questionnairecontained four sections, Section "A" consistedBio data of the respondentsSection "B" consistedof records managed in the selectedGeneral Hospitals of Katsina State,Section "C" consisted the types of filing system used in selected General Hospitals in Katsina State,whileSection"D" consisted of the methodsused in thepreservations of medicalrecords in the selected General Hospitals in Katsina State.

3.6 Validity of the Instrument

The validity of research instrument is important when conducting research. Hopkins (2005)defined validity as how well variables measure what they aresupposed to measure. Edward and Talbot (2008) suggested that the validity of information is basedon the extent the method measured what they are expected to measure. Validity is also seen as the extent to which a study is free from interference, contamination and control or variable manipulation (Sarontakos, 2007). Face and content validity of the instrument were used. It was in order to make sure that the instrument was well checked by the supervisors from the facial point of view as well as making sure that the contents of the instrument match the research questions and the research problem

3.7 Reliability of the Instrument

In order to ensure reliability of the instrument, a pilot study was conducted atTsafe General Hospital, Zamfara State, usingeight (8) questionnaires. After the pilot study, the researcher used split-half reliability using Spearman Brown Formula. The reliability index obtained was 0.76. This means that the instrument was highly reliable and it can be used for the main study

3.8 Procedures for Data Collection

The researcher, with the help ofthreeresearch assistants, visited each of the selected general hospitals to administer the questionnaire. The questionnaire was administered to the respondents in the records office and collected back after completion. The recordoffice was a convenient place to administer the questionnaire because the respondents spend most of their time in the office. Three weeks was spent to distribute and collect back the instrument.

3.9Procedure for Data Analysis

The datawas collected, and analyzed using descriptive statistics such as frequency distribution tables and percentages. All the hypotheses were analyzed using One-Way ANOVA

References

Aina, L.O. (2002) Research in information science: An African Perspective.Ibadan, Striling- Horden publishers (Nig) Ltd.

Akuezulo, E.O. (2004). Research Methodology and Statistics, Nvelcenti (Nig) Publication Co.

Ali, A. (2006).Conducting Research in Education and Social Sciences, Enugu: TashiwaNetworks Ltd.

Bryman A. (2008). Social Research Methods: New York Oxford University Press Inch.

Creswell, J. W. (2003).Research Design, Qualitative, Quantitative and Mixed Method Approach,Thousand Oaks, California, Sage Publications, Inch.

Edwards, A and Talbot, R. (2008) The Hard Pressed Researcher: A ResearcherHandbook for the Carrying Profession. New York; London.

Hopkins W.G. (2000) Qualitative Research Design: Sport Science. Accessed on 08September, 2011. Available at*: http//www.sug.porg.za.indexm.pdfOption=com=content.*

Ibrahim, U (2013). Techniques for Writing and Presentation of Theses/ Dissertation: A companion Guide for Postgraduate Students in Nigerian University System. Zaria: ABU Press.

Ifidon S.E. and Ifidon E.I. (2007). Basic Principles of Research Methods: Good News ExpressCommunications. Benin City.

Johnson,B and Chritenson, L. (2004). Educational Research: Qualitative and MixedApproaches, Boston: Person.

Kothari, C.R. (2007). Research Methodology: Method and Technique, New Delhi: WishwaPrakashan.

Krug, R. (2015) How to Decide What Types of Questions to Use in Your Surveys.Retrieved from http://www.blogs.constanttact.com/survey-questions.Accessed on 20/2.2015.

Lewis, J, and Ritehie, J. (2003). Qualitative Research Practice, A Guide forSocial Sciences Students and Researchers, London, SAGE Publications.

Marshall, C, and Rossman, G.B. (2006). Designing Qualitative Research, New Burypark, C.A sage.

Ndagi, J.O. (2004). The Practice of Social Research 4th Edition: Belmont, Wad publishing Co.

Neuman,L.W. (2006) Social Research Methods: Qualitative and QuantitativeApproaches,6th Edition Boston, Pearson

One-way ANOVA(2015), Laerd Statistic, One-way ANOVA Using Stata. Retrieved from http://www.file://c:/users/USER/Documents/One-way ANOVA in stata-procedure, output and interpretation of the output using a relevant example html.Accessed on 1/9/2015.

Osuala, S, (2005). Principles and Practice of Health Records Management.Nigeria, Royal Class Printing Pp- 120-123.

Pendwarden, R. (2013), Comparing Closed-Ended and Open-Ended Questions. Retrieved from http://www.fluidsurveys.com/university/comparing-open- ended questions.Accessed on 20/3/2015.

Sarantakos, S. (2007). Social Research 2nd Edition New York: Palgrave.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 Introduction

This chapter presented the data collected, analyzed and discussed. These were presented under the following sub-headings:

4.2 Response Rate

4.3 Demographic Analysis of the Respondents

4.4Inferential Statistical Analysis

4.2 Response Rate

A total of forty three (43) copies of questionnaire were distributed to the records staff in selected General Hospitals in Katsina State. The sum of forty two (42) copies of the questionnaire were duly completed, returned, examined and found useful for the analysis. This represents 97.8% response rate. Table 4.1 presented the distribution of the response rate.

Table 4.1 Response Rate

S/N	General Hospitals	No. of questionnaire distributed	No. of questionnaire returned	Percentages (%) of questionnairereturned
1.	Katsina	10	9	20.9%
2.	Dutsinma	8	8	18.6%
3.	Daura	8	8	18.6%
4.	Funtua	6	6	13.9%
5.	Kankara	5	5	11.9%
6.	Mani	6	6	13.9%
Total		**43**	**42**	**97.8%**

From Table 4.1 high response rate of 42 (97.8%) was realized. The high response rate was achieved due to the fact that the researcher was helped by the research assistantswho administering and collecting of the questionnaire. In addition, good relationship was established between the researcher and the respondents which led to on-the-spot completion of the questionnaire by the respondents.

4.3 Demographic Analysis of the Respondents

The section presented the demographic information of the respondents. This included their educational qualification and their working experience. Table 4.2 presented the educational qualification of the respondents.

Table 4.2 Educational Qualification Respondents

S/N	Educational Qualification	General Hospitals												Total	
		Katsina		Dutsinma		Daura		Funtua		Kankara		Mani			
		F	%	F	%	F	%	F	%	F	%	F	%	F	%
1.	Secondary school leaving certificate	0	0.0	1	2.3	0	0.0	1	2.3	0	0.0	0	0.0	2	4.6
2.	NCE/Diploma in Health Information Management	0	0.0	2	4.8	3	7.1	3	7.1	6	14.2	5	12.0	19	45.2
3.	First Degree in Business Administration	6	14.2	3	7.1	4	9.5	0	0.0	1	2.3	1	2.3	15	35.4
4.	Master Degree	1	2.3	1	2.3	0	0.0	3	7.1	0	0.0	1	2.3	6	14.0
5.	Ph. D	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

Table 4.2 presents the educational qualification of the respondents in General Hospitals in Katsina State. It can be seen that majority of the respondents 19 (45.2%) had NCE/Diploma. While 15 (35.4%) of respondents has first degree. Also 6(14.0%) of respondents has master degree. However, 2 (4.6%) of the respondents has lowest qualification with secondary school living certificates. The table also shows that none of the respondents has PhDqualification which represents0 (0.0%)This is in line with the finding of Ngulube (2001) who reported that records management staff is expected to have a qualification higher than secondary qualification. This is because management of records is a specialized field of knowledge that requires records professionals. The implication of this finding is that if the record managers are well trained with basic skills in medical records maintenance, this will improve efficiency and effectiveness of the services. Table 4.3 below presented the working experience of the respondents.

Table 4.3 Working Experience of Respondents

S/N	Working Experience	General Hospitals												Total	
		Katsina		Dutsinma		Daura		Funtua		Kankara		Mani			
		F	%	F	%	F	%	F	%	F	%	F	%	F	%
1.	0-11 years	0	0.0	1	2.4	0	0.0	4	9.5	3	7.1	3	7.1	11	26.1
2.	12-20 years	13	30.9	2	4.8	0	0.0	3	7.1	1	2.4	3	7.1	22	52.3
3.	21-30 years	1	2.4	1	2.4	0	0.0	1	2.4	1	2.4	0	0.0	4	9.6
4.	31 years and above	4	9.5	0	0.0	0	0.0	1	2.4	0	0.0	0	0.0	5	11.9

Table 4.3 presents the respondent's working experience. Table 4.3 showed that majority of the respondents 22(52.3%) has working experience of between 12-20 years, while 11(26.1%) respondents has working experience of between the age of 0-11 years. The table also revealed that 5(11.9%) respondents are between the age of 31 and above years of working experience. While 4(9.6%) of the respondents has the lowest number of working experience of between 21-30 years. Table 4.4 below presented the types of medical records managed.

Table 4.4 Types of Medical Records managed in General Hospitals in Katsina State

	Medical Records	General Hospitals												Total	
		Katsina		Dutsinma		Daura		Funtua		Kankara		Mani			
		F	%	F	%	F	%	F	%	F	%	F	%	F	%
1	Test and test slips	6	14.2	7	16 .6	6	14.2	6	14.2	5	11.9	5	11.9	35	83.0
2	Patients folders	8	19.0	7	16.6	7	16.2	6	14.2	5	11.9	6	14.2	39	92.5
3	Diagnostic note	5	11.9	7	16.6	6	14.2	3	7.1	3	7.1	2	4.7	26	61.5
4	Discharge notes/slips	3	7.1	6	14.2	7	16.2	4	9.5	2	4.7	1	2.3	23	54.4
5	Referral letter/note	2	4.7	7	16.6	6	14.2	4	9.5	5	11.9	1	2.3	25	59.2
6	Prescription slips/note	3	7.1	4	9.5	4	9.5	4	9.5	5	11.9	2	4.7	23	54.5
7	Admission note/slips	5	11.9	7	16.6	6	14.2	4	9.5	4	9.5	4	9.5	30	71.2
8	Immunization records	2	4.7	6	14.2	6	14.2	4	9.5	2	4.7	0	0.0	20	47.3
9	Antenatal records	3	7.1	6	14.2	4	9.5	0	0.0	2	4.7	1	2.3	16	37.8
10	Death records	5	11.9	7	16.6	6	14.2	3	7.1	5	11.9	4	9.5	30	71.2
11	Eye records	1	2.3	3	7.1	2	4.7	2	4.7	0	0.0	0	0.0	8	18.8
12	Ear records	3	7.1	6	14.2	7	16.2	4	9.5	2	4.7	1	2.3	23	54.4
13	Family planning records	2	4.7	7	16.6	6	14.2	4	9.5	5	11.9	1	2.3	25	59.2
14	General out patient records	3	7.1	4	9.5	4	9.5	4	9.5	3	7.1	2	4.7	23	54.5
15	Scanning /ultrasound result	5	11.9	7	16.6	6	14.2	4	9.5	4	9.5	4	9.5	30	71.2
16	X-ray film records	2	4.7	6	14.2	6	14.2	4	9.5	2	4.7	0	0.0	20	47.3
17	Delivery records	2	4.7	6	14.2	6	14.2	4	9.5	2	4.7	0	0.0	20	47.3

Table 4.4 revealed the responses of respondents on the various types of medical records maintained in General Hospitals in Katsina State. The overall response 39(92.5%) indicated that most of these General Hospitals stored patients records. While 35(83.0%) revealed that some of the General Hospitals in Katsina State stored Test and test slips. Also 30(71.2%) respondents indicates that some of the General Hospitals in Katsina State stored admission notes//slips, death records and scanning/ultrasound result. However, the table also indicated that 26(61.5%) of respondents stored diagnostic notes. While 25(59.2%) respondents indicate that some of the General Hospitals in Katsina State stored referral letter and family planning records. The table also shows that 23(54.5%) of the respondents revealed discharge notes/slips ,prescription slips/notes and Ear records are stored in their Hospitals. while 20(47.3%) of respondents indicated that some of the General Hospitals in Katsina State stored immunization records, x-ray film records and delivery records. The table revealed that antenatal records are stored in their Hospitals. While 16(37.8%) of respondents indicates that antenatal records are stored in their hospitals. However, the table also indicated that 8 (18.8 %) of the respondents stored Eye records which represent the lowest responses.This finding corresponded with that of Duranti, (2005) who reported that medical records such as files and folders are highly created and stored in records office in Hospital. Table 4.5 below presented the devices in managing medical records.

Table 4.5 Devices Used in Storing Medical Records in General Hospitals in Katsina State

	Devices Used in Storing Records	General Hospitals												Total	
		Katsina		Dutsinma		Daura		Funtua		Kankara		Mani			
		F	%	F	%	F	%	F	%	F	%	F	%	F	%
a.	File	6	14.2	7	16.6	6	14.2	5	11.9	1	2.3	5	11.9	35	83.0
b.	Folders	6	14.2	7	16.6	7	16.2	2	4.7	4	9.5	5	11.9	39	92.5
c.	Wooden shelves	5	11.9	7	16.6	6	14.2	3	7.1	3	7.1	2	4.7	26	61.5
d.	Metal shelves	3	7.1	6	14.2	7	16.2	4	9.5	2	4.7	1	2.3	23	54.4
e.	Wooden cupboards	2	4.7	7	16.6	6	14.2	4	9.5	5	11.9	1	2.3	25	59.2
f..	CD-ROM	3	7.1	4	9.5	4	9.5	4	9.5	0	0.0	2	4.7	23	54.5
g.	Metal safe	5	11.9	7	16.6	6	14.2	4	9.5	4	9.5	4	9.5	30	71.2
h.	Computer	2	4.7	6	14.2	6	14.2	4	9.5	2	4.7	0	0.0	20	47.3
i.	Floppy disk	3	7.1	6	14.2	4	9.5	0	0.0	2	4.7	1	2.3	16	37.8
j.	Flash drive	5	11.9	7	16.6	6	14.2	3	7.1	5	11.9	4	9.5	30	71.2
k.	Hard drive	1	2.3	3	7.1	2	4.7	2	4.7	0	0.0	0	0.0	8	18.8
l.	Metal cabinet drawers	6	14.2	7	16.6	7	16.2	7	16.6	2	4.7	5	11.9	39	92.5
m.	Tape	5	11.9	7	16.6	6	14.2	3	7.1	3	7.1	2	4.7	26	61.5

Table 4.5 showed the responses of respondents on the various devices used in storing medical records in the General Hospitals in Katsina State. The table indicate that the highest score was 39 (92.5%) stated that folders and Metal cabinet drawers are highly used as records facility for storing patients records. While 35(83.0%) of respondents stated that file was used as devices for storing their medical records. The table also shows that 30 (71.2%) of respondents indicates that metal safe and flash drive are the devices used in their hospitals. However, 26(61.5%) of respondents revealed that some of the General Hospitals in Katsina State used wooden shelves and tape for storing medical records. The table also indicates that 25(59.2%) of respondents revealed that some of the Hospitals used wooden cupboard in storing their medical records. However, 23 (54.4%) of respondents indicated that metal shelves and CD-ROM was used for storing medical records. Also 20 (47.3%) of respondents shows that they used computer for storing medical records. The table also revealed that 16 (37.8%) of respondents indicates that some of the General Hospitals used floppy disk in storing medical records The table also shows that 8(18.8%) of the respondents indicated that few General Hospitals used hard drive in storing their medical records, and this may be due to the fact that Hard Drive is expansive as well as ICT devices. This finding is in agreement with Steward and Melesco (2002) who posited that records requires storage equipment and facilities for effective records security. This implies that folders aid records identification, eases their retrieval, protects the valuable paper records from harm and enables their physical and intellectual control.Table 4.6 below presented the system of filing arrangement.

Table 4.6Systems of file Arrangement Adopted in General Hospitals in Katsina State

	Systems of file Arrangement	General Hospitals												Total	
		Katsina		Dutsinma		Daura		Funtua		Kankara		Mani			
		F	%	F	%	F	%	F	%	F	%	F	%	F	%
1	Alphabetical	6	14.2	7	16.6	6	14.2	5	11.9	0	0.0	5	11.9	35	83.0
2	Numerical	6	14.2	7	16.6	7	16.2	7	16.6	3	7.1	5	11.9	39	92.5
3	Chronological	5	11.9	7	16.6	6	14.2	3	7.1	3	7.1	2	4.7	26	61.5
4	Alpha-numerical	3	7.1	6	14.2	7	16.2	4	9.5	2	4.7	1	2.3	23	54.4
5	By department	2	4.7	7	16.6	6	14.2	4	9.5	5	11.9	1	2.3	25	59.2

Table 4.6 showed the responses on the arrangement of medical records adopted in General Hospitals inKatsina State. The overall response in the table39(92.5%) shows that numerical system is highly adopted in arranging medical records in General Hospitals in Katsina State. While 35 (83.0%) of respondents indicates that some of the General Hospital in Katsina State used alphabetical system of arranging their medical records. The table also showed that 26 (61.5%) of respondents revealed that they used chronological system of arranging their medical records. However , 25(59.2%) of respondents indicates that they arranged their medical records by department The table also revealed that 23(54.4) of respondents indicate that some of the General Hospitals in Katsina State used Alpha- numerical in arranging their medical records that is, they combine numbers and alphabets.Arrangement of medical records using numbers is time saving, and allows for easy access to the records. If records are poorly arranged, the result is that they could be misplaced, and generates frustration in accessing them, causes delays and disappointments.This is in line with the assertion of Man, (2005) that failure to arrange records in good order will results to‘’costly delays, lost business opportunities, frustrated office personnel and managers. The implication here is that it is easy for records managers to retrieve records when arranged numerically. Table 4.7 below presented the methods used in preserving medical records.

Table 4.7 Preservation of Medical Records in General Hospitals ofKatsina State

	Preservation of Medical Records	General Hospitals												Total	
		Katsina		Dutsinma		Daura		Funtua		Kankara		Mani			
		F	%	F	%	F	%	F	%	F	%	F	%	F	%
a.	Lamination	6	14.2	7	16.6	6	14.2	5	11.9	5	11.9	5	11.9	35	83.0
b.	Cleaning and dusting of medical records	6	14.2	7	16.6	7	16.2	7	16.6	3	7.1	5	11.9	39	92.5
c.	Binding	5	11.9	7	16.6	6	14.2	3	7.1	3	7.1	2	4.7	26	61.5
d.	Encapsulation	3	7.1	6	14.2	7	16.2	4	9.5	2	4.7	1	2.3	23	54.4
e.	Microfilming	2	4.7	7	16.6	6	14.2	4	9.5	5	11.9	1	2.3	25	59.2
f.	De acidification	3	7.1	4	9.5	4	9.5	4	9.5	0	0.0	2	4.7	23	54.5
g.	Photocopying	5	11.9	7	16.6	6	14.2	4	9.5	4	9.5	4	9.5	30	71.2
h.	Shelving of medical records to allow for free flow of air	2	4.7	6	14.2	6	14.2	4	9.5	2	4.7	0	0	20	47.3
i.	Installing air conditioner	3	7.1	6	14.2	4	9.5	0	0	2	4.7	1	2.3	16	37.8
j.	Provision of adequate security system to prevent theft, mutilation and defacing of paper-based materials	5	11.9	7	16.6	6	14.2	3	7.1	5	11.9	4	9.5	30	71.2
k.	Use of insecticides and insect repellent for medical records preservation	1	2.3	3	7.1	2	4.7	2	4.7	0	0	0	0	8	18.8

Table 4.7 presented the ways in which these General Hospitals preserved their medical records. From the table, it was discovered that majority of the respondents 39(92.5%) showed that they used cleaning and dusting of medical records in preserving their medical records in General Hospitals in Katsina State. While 35(83.0%) indicated that lamination was used in preserving their medical records in some General Hospitals of Katsina State. The table also showed that 30 (71.2%) of respondents indicated that photocopying and provision of adequate security system to prevent theft, mutilation and defacing of paper-based materials to preserved their medical records. The table also presented that 26 (61.5%) of respondents indicated that binding was used in preserving their medical records. However, 25 (59.2%) of respondents revealed that they used microfilming system in preserving medical records in some of the General Hospitals of Katsina State. It also showed that 23 (54.4%) of respondents indicates that encapsulation and de-acidification was used in preserving their medical records in some of the General Hospitals in Katsina State. The table also showed that 20 (47.3%) of respondents revealed that shelving of medical records to allow for free flow of air was used in preserving medical records in some of the General Hospitals of Katsina State. The table also revealed that 16(37.8%) of respondents indicates that installing of air conditioner was the method used to preserve their medical records in some General Hospitals of Katsina State. The table also revealed that 8(18.8%) of the respondents indicates that some of the General Hospitals in Katsina State used insecticide and insect repellent in preserving their medical records, which is the lowest response.. This finding is in line with that of Horneby (2007) who posited that preserving records effectively means that documents must always be placed, handled, consulted and /or displayed in a way that minimizes the risk of damage and take into account of their size, shape, and physical condition. The implication here is that preservation connotes for more than keeping a records in its original form

or being familiar with all reformatting technologies available. It also means accessibility, when a user needs it, he gets it.

4.4 Inferential Statistical Analysis

Three null hypotheses were formulated and tested in the study. All the hypotheses were tested using One-way ANOVA. They met the assumptionsof one –way ANOVAwhich include two or more categorically unrelated groups, there should be independence of observation, the dependent variable should be approximately normally distributed for each category, and there should be homogeneity of variance of the distribution (One-way ANOVA, 2015

Null Hypothesis one

$Ho_{1:}$ *There is no significant difference in the medical records maintained in General Hospitals ofKatsina State.*

One-way ANOVA was used to test this hypothesis. This is because; the hypothesis met all the assumptions of the test. Table 4.8 presented the data collected and analyzed on this hypothesis

Table 4.8 Difference in the medical records they maintained.

VAR00001

	Sum of Squares	Df	Mean Square	F	Sig
Between group	189.787	5	37.957	.517	.761
Within Group	2641.189	36	73.366		
Total	2830.976	41			

Table 4.8 revealed that the P value is 0.761. Since the α(0.05) was used for this hypothesis, the null hypothesis one is not rejected because the P value (0.761) is greater than α (0.05). It was concluded that most of the responses of the medical records staff in General Hospitals in

Katsinastate, the medical records they maintained are the same, meaning that the null hypothesis was retained.

Null Hypothesis Two

Ho_2 There is no significant difference in the type of medical records filing system adopted in General Hospitals of Katsina State.

One-way ANOVA was used to test this hypothesis. This is because; the hypothesis met all the assumptions of the test table 4.9presented the data collected and analyzed on this hypothesis

Table 4.9 Difference in the type of medical records filing system used

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	98.343	5	19.669	2.254	.070
Within Groups	314.133	36	8.726		
Total	412.476	41			

Table 4.9 revealed that the P value is represented by 0.070. Since α (0.05) was used for this hypothesis, the null hypothesis two was retained because the P value (0.070) is greater than α (0.05). It was concluded that most of the responses of medical records staff on the types of medical records filing system they adopt, are the same, meaning that there is no significance difference in the types of medical records filing system adopted.

Null hypothesis three

Ho_3 There is no significant difference in the methods used in preservation of medical records in General Hospitals inKatsina State

One-way ANOVA was used to test this hypothesis; this is because the hypothesis met all the assumption of the test. Table 4.10 presented the data collected and analyzed on this hypothesis.

Table 4.10 Difference in the methods used in preservation of medical records

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	130.316	5	26.063	.275	.924
Within Groups	3415.589	36	94.877		
Total	3545.905	41			

Table 4.10 revealed that the P value is represented by 0.924. Since α (0.05) was used for this hypothesis, the null hypothesis three is retained because the P value (0.924) is greater than α (0.05). It is concluded that most of the responses of the medical records staff on the methods of medical records preservation used are the same, meaning that there is no significant difference in the methods used in preservation of medical records.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the entire research, conclusion and recommendations based on the research findings. It also advances some suggestions for further research**.**

5.2 Summary of the Study

This study focused on the assessment of medical records maintenance in General Hospitals in Katsina State. Four research questions were formulated to assess how medical records are stored, devices used in storing medical records, types of medical records filing system and the method of preservation of medical records. The research method adopted was survey. The population of this study comprised twenty (20) General Hospitals; six (6) General Hospitals were selected with the total number of forty three (43) respondents from the records staff as samples for this study. The instrument used to collect the data was the structured questionnaire. The data collected was analyzed and presented using descriptive statistics such as frequency distributions tables and percentages, while that of hypotheses was analyzed using inferential statistics (One-way ANOVA).

5.3 Summary of the Major Findings

Based on the data collected and analyzed for this study, the following are the major findings:

1. The type of medical records stored in General Hospital in Katsina State were patients folders.

2. The type of devices used in General Hospital in Katsina State was folders and metal cabinet drawer.
3. The type of filing system used in the General Hospitals in Katsina State was numerical system.
4. The method of preservation used in General Hospitals in Katsina State was cleaning and dusting of medical records.

Inferential finding

All the three null hypotheses formulated were retained indicating no significant difference in storage, devices used for storing medical records, filing, and preservation used in General Hospitals of Katsina State.

1. The study willassist the Katsina State Hospitals Management Board and other Hospitals administrators in understanding the new trends of medical records maintenance
2. The study will assist the other researchers undertaking research on other aspect of medical records.

5.4 Conclusion

Based on the analysis and finding of the study, it is concluded that the type of medical records mostly stored in General Hospitals in Katsina State is patient's folders , and the devices used in storing medical records is folders and metal cabinet drawer, the system of filing arrangement mostly used in the General Hospitals Katsina State was numerical system. And the preservation methods mostly used are cleaning and dusting of medical records. This showed that medical records maintenance in General Hospitals in Katsina State is done manually and it still helps in

the general maintenance of medical records created in the Hospitals as this would go a long way to assist medical health services in the general hospitals.

5.5 Recommendations

Based on the analysis and findings of this study, it is recommended that:

1. Apart from patients folders that are mostly stored in general hospitals in KatsinaState, other records such as eye records, antenatal records, x-rays records should be stored as these records may be needed later for reference purpose.
2. Apart from folders and metal cabinet used as devices for storing medical records, other devices such as CD-ROM, hard drive computer should be used in storing medical records as this help in security and loss of the records.
3. Besides the numerical filing system that is mostly adoptedin general hospitals in Katsina State, other filing system such as Alpha-numerical and Alphabetical should be used as these filing systems also help in quick retrieval of the records.
4. Apart from cleaning and dusting of medical records in general hospitals in Katsina State, other preservation methods such as using insecticides, providing good ventilation and air conditioners should be used in order to ensure maximum care of the medical records.

5.6 Contributions to Knowledge

The study would contribute to:

1. The study has revealed that patient folders are the type of medical records stored or maintained in general hospitals of Katsina State.
2. The study also revealed that folders and metal cabinet drawers are the facilities mostly used in storing patient’s records.

3. The study equally revealed that numerical system is the filing system used in the general hospitals of Katsina State.

5.7 Suggestions for Further Research

1. Preservation and Conservation of Medical Records for effective health services in General Hospitals in Katsina State

2. Creation/ Generation and Use of Medical Records for effective health services in General Hospitals in Katsina State.

References

Aina, L.O. (2002). Research in Information Science: An African Perspective.Ibadan, Striling-Horden publishers (Nig) Ltd.

Ajewole, B (2001).Records and Information Resources Management in Public Service, A theoretical and framework. Lagos: The administrative staff College of Nigeria(ASCON) 24:28.

Ajewole. G. A. (2000). Presentation and Management of Information and Records,in Information and Record Management in Nigeria: Problems and Prospects Lagos: NIREM.

Akanji, D. O. (2005). Development of Medical Records in Nigeria: 3rd edition "the Journey so far" Nigeria: Onudin, pp 1-2.

Akanji, D. O. (2005). Development of Medical Records in Nigeria: 3rd edition "the Journy so far" Nigeria: Onudin, pp 1-2

Akuezuilo, E.O.(2004). Research Methodology and Statistic NuelCenti (Nig.)Publication Co.

Akuezulo, E.O. (2004). Research Methodology and Statistics, Nvelcenti (Nig) Publication Co.

Akussah, H. (2006) Records Management in Ghana: An Overview. *African Journal of Library, Archives and Information Science, 6(2): 101-106.*

Alegbeleye, G (2000). Records and Information. Paper Presented at the Workshopon Records and Information Management Ibadan.

Alegbeleye, G (2000). Records and Information. Paper Presented at the Workshop on Records and Information Management Ibadan.

Ali, A. (2006).Conducting Research in Education and Social Sciences, Enugu: TashiwaNetworks Ltd.

American Patient Application Service, (2015).Electronic Medical Records System.Us: Uspc.Pp.37-49.

Barry, R. E. (2001). Electronic Document and Records Management Systemtoward a Methodology for Requirements Definition, Available:

Barry, R. E. (2004). Electronic Document and Records Management System,toward a Methodology for Requirements Definition, InformationManagement and Technology, 27(6), 251-256.

Bhana, P. (2008). The Contribution of Proper Recordkeeping Towards Auditing and RiskMitigation: Auditor General's perspective, Corporate Executive: Office of the Auditor-General . 10 November.

Bryman A. (2008). Social Research Methods: New York Oxford University Press Inch.

Bryan, E.O. (2012). The Records Classification System: An Introduction ; A presentation at the staff Development Programme of Caribbean Centre for Development Administration

Buckland, M. (1990), Nature of Records Management Theory American Archivist,57, 346-351

Clark. J. L. and Meiris, D, C. (2006). Electonic Personal Health Records come of age American Journal of Medical Quality, 21:22.

Clark. J. L. and Meiris, D, C. (2006). Electronic Personal Health Records come ofage *American Journal of Medical Quality, 21:22.*

Cloonan, M. V. (2000). W. (h) Ither Preservation?Library Quarterly; 71(2) 231- 242.

Cloonan, M. V. (2001). W. (h) Ether Preservation?*Library Quarterly*; 71(2) 231-242.

Creswell, J. W. (2003).Research Design, Qualitative, Quantitative and Mixed Method Approach,Thousand Oaks, California, Sage Publications, Inch.

Duranti, L. (2005). The odyssey of Records Manager. London: Scarecrow Press.

Edwards, A and Talbot, R. (2008) The Hard Pressed Researcher: A ResearcherHandbook for the Carrying Profession. New York: London.

ESARBICA, (2002), Minutes of the ESARBICA. Executive Board meeting held at the mountainInn, Mbabane, Swaziland, 11-13 march, 2002.

Feather J. (2005) Preservation and the Management of Library Collections. London: The LibraryAssociation.

Gerntholtz.T .Van Heerden, M.V. and Vine. G.G.(2007), Electronic Medical Records-WhyShould you consider implementing an EMR? The 21st century health care system isusing a 19th century paperwork system, CME, (25) 1: 24-28.

Harry and Steven, (2004), Exploring Archives: An introduction to archival ideas and Practice inSouth Africa. 2nd ed.Pretoria:NASA.

Hopkins W.G. (2000) Qualitative Research Design: Sport Science. Accessed on 08September, 2011. Available at*: http//www.sug.porg.za.indexm.pdfOption=com=content.*

http// www. File//c/ users/USER Documents/one-way ANOVA in stats-procedure, output and interpretation of the output using a relevant example html. Accessed on 1/9/2015.*http//www.caldeson.com/rimos/barry1.htm1six*accessed 03/04/2008.*http//www.record/new.gov.au/records.keeping/governmentrecoersKeepingmanual/document/recordskeeping.* Accessed 29-08-2010.

Ibrahim, U (2013). Techniques for Writing and Presentation of Theses/ Dissertation: A companion Guide for Postgraduate Students in Nigerian University System. Zaria: ABU Press.

Ifidon S.E.and Ifidon E.I. (2007). Basic Principles of Research Methods: Good News ExpressCommunications. Benin City.

International Standard Organization. (2003) ISO 15489-1 *Information and documentation andrecords management parts 1*: General Geneva International Standard Organization.

Johnson, B and Christenson, L. (2004). Educational Research: Quantitative and Mixed Approaches, Boston: Person.

Johnson,B and Chritenson, L. (2004). Educational Research: Qualitative and MixedApproaches, Boston: Person.

Johnson, B, and Christenson, L. (2004). Educational Research: Quantitative andMixed Approaches, Boston: Person.

Kothari, C.R. (2007). Research Methodology: Method and Technique, New Delhi: WishwaPrakashan.

Kukah, Y. (2005). Medical Records Managers UsmanDanfodio UniversityTeaching Hospital, Sokoto.

Kumar, R (2005) Research Methodology; *A step by step Guide for Beginners, London: Sage*

Lewis, J and Ritchie, J.E.(2003) Quantitative Research Practice, a guide for social sciencestudents and Researches, London: SAGA Publications.

Longe, H. (2003). Design Development and Implementation of Cost EffectiveManagement System in local Government Administration in Managementof Public Records and Information in Nigeria Problems and Prospects. Lagos: NIREM.

Longe, H. (2003). Design Development and Implementation of Cost Effective Management System in local Government Administration in Managementof Public Records and Information in Nigeria Problems and Prospects. Lagos: NIREM.

Man, E. (2005) A functional approach to appraisal and retention scheduling. RecordsManagement Journal, (15) 1:21-33.

Marshall, C, and Rossman, G.B. (2006). Designing Qualitative Research, New Burypark, C.A sage.

Marshall, C and Rossman, G. (2006) Designing qualitative research 4th ed. California: SAGEPublications Inc.s

Michael, Q.(2010) Preservation or Preventive World Words.

Morow, L.C.(2011).Maintenance Engineering. Hand Book, McGraw Hill, New York.

Ndagi, J.O. (2004). The Practice of Social Research 4th Edition: Belmont, Wad publishing Co.

Neuman,L.W. (2006) Social Research Methods: Qualitative and QuantitativeApproaches,6th Edition Boston, Pearson.

Newman, L. W.(2006), Social Research Methods: Qualitative and Quantitative Approaches, 6thed. Boston, Pearson.

Ngoepe, M. S. (2004). Accountability, Transparency and Good Governance: theNational Achieves and Records Services of South Africa's Role in HelpingGovernment to Better Services Delivery to the South Africa's Paperpresented at the Seventh.

Ngoepe, M. S. (2004). Accountability, Transparency and Good Governance: the National Achieves and Records Services of South Africa's Role in Helping Government to Better Services Delivery to the South Africa's PaperPresented at the Seventh.One –way ANOVA (2015) laerd statistic, One-way ANOVA Using Strata. Retrieved from

Ngulube, P.(2001), Guidelines and Standards for Records Management Education and Training:A model for Anglophone Africa. *Records Management Journal* 11 (3), 155-173.

Noris , Thomas. D. (2003). ''The Seven Attributes of an Effective'' Archive TechnicalInformation Series 61 (2003) available at:

Osuala, S, (2005). Principles and Practice of Health Records Management.Nigeria, Royal Class Printing Pp- 120-123.

Osuala, S. (2005), Principles and Practice of Health Records Management., Nigeria, Royal ClassPrinting Pp 120-123.

Peen,I.A(2006)Records management Handbook 2nd EditionAlder Short; Gower p. 45.

Popoola, S,O. (2009).Preservation and Conservation of Information Resources. University of Ibadan, Nigeria: Distance Learning Center, Press, New York.

Public and Physician Advisory Services 2012.

Read-Smith, J,Ginn, M. L. and Kallaus, N. E. (2002). Records Management,Seventh Edition, Australian. South- Western Press.

Read-Smith, J.; Ginn, M. L. and Kallaus, N. E. (2002). Records Management, Seventh Edition, Australian. South- Western Press.

Richard, C. (2005). Managing Institution Archives Foundational Principles andPractices. Green wood Press, Western, Connecticut.

Sarantakos, S. (2007). Social Research 2nd Edition New York: Palgrave. Ajewale. G. A. (2000). Presentation and Management of Information and Records, in Information and Record Management in Nigeria: Problems and Prospects Lagos: NIREM.

Shellenberg, T. R. (2005). Modern Archives: Principles and Techniques, Chicago:University of Chicago Press. P.16.

Shellenberg, T. R. (2006). The Management of Archived Columbia UniversityPress, New York.

State Records New South Wales.(2004) Introducing Records, Records Keeping andRecords Management,Intro.no.3:April available

http//www.record/new.gov.au/records.keeping/government-recoerskeepingmanual/document/recordskeeping Accessed 29-08-2010.

Steward, ,J,R. (2006)Filing Systems and Records Management New York:MCGREW Hill.inc.tsal,J and Bond (2007),A Composing of ElectronicHealth Centers ,*International Journal for Quality in Health Care* (20) 2:136.

UNESCO, (2009).Safeguarding our Documentary Heritage. Retrieved may 12th 2007 from:http://webworld.Unesco.org/University of Chicago Press. P.16.

Upward, F. (2006).Structuring the Record Continuum Part 1: Post custodialPrinciples and Properties, *Archives and manuscripts Journal*, 24(2), 242-255.

W.H.O (2006), Medical Records Manual: A Guide for Developing Countries;

Wamukoya, F. and Mutula, S, M. (2005) E- records management and governance in East and SouthAfrica. *Malaysian Journal of library and information science*, 10 (2) 67-83.

Wilburta Q, lindh,et al(2009), Comprehensive Medical Assisting: Administrativeand Clinical'' Delmer

Willis, A (2005), Corporate Governance and Management of Information and Records. *RecordsManagement Journal*, (15) 2:86-97.

World Health Organization (2003), Medical Records Manual: A Guide for DevelopingCountries; Western Pacific Region.

APPENDIX I

Department of Library and Information Science,
Faculty of Education,
Ahmadu Bello University,
Zaria.
Date ……..

QUESTIONNAIRE FOR ASSESMENT OF RECORDS MAINTENANCE IN SELECTED GENERAL HOSPITALS IN KATSINA STATE

Dear Respondent,

I am a postgraduate student of the above named department presently conducting a research. This is in partial fulfillment of the requirement for the award of Master in Archives and Records Management (MARM).

Kindly go through the questionnaire and provide answers appropriately.Every information provided will be treated confidentially and will not be used for any other purpose than that of this research.

Yours faithfully,

Umar MukhtarDandume
08068593170,
(umarmukhtar20@gmail.com)

APPENDIX II

This questionnaire is designed to obtain the relevant information from the medical records staff in the selected general hospital in Katsinastate.

Section A: Personal Information

Instruction: kindly tick as appropriate and specify where necessary.

1. Name of your general hospital

   …….

2. Educational qualification

a. Secondary School leaving cert. [ ]

b. NCE/Diploma [ ]

c. BA/BSC/BLS [ ]

d. MA/MSC/MLS/MARM [ ]

e. PhD [ ]

f. Others [ ]

3. working experience with the Hospital

a. 0-11 years [ ] b. 11-20 years [ ]

c. 21-39 years [ ] d. 40-years and above [ ]

Section B: Medical Records maintained

1. **What types of medical records maintained in your general hospital?**

Specific instruction: you may tick more than one option.

a. Patient folders [ ]

b. Test and test result slips [ ]

c. Diagnostic note [ ]

d. Discharge notes/slips [ ]

e. Referral letter/note [ ]

f. Prescription slips/note [ ]

g. Admission note/slips [ ]

h. Immunization records [ ]

i. Antenatal records [ ]

j. Death records[ ]

k. Eye records [ ]

l. Ear records [ ]

m. Family planning records [ ]

n. General out patient records [ ]

o. Scanning /ultrasound result [ ]

p. X-ray film records [ ]

q. Delivery records [ ]

r. Others (specify)……

……

2. Which of these devices do you use in storing medical records in your General Hospital?

a. file [ ]

b. folders [ ]

c. wooden shelves [ ]

d. metal shelves [ ]

e. wooden cupboards [ ]

f. metal cabinet drawers [ ]

g. metal safe [ ]

h. Computer [ ]

I. floppy Disk [ ]

J. Flash Drive [ ]

K. Hard Drive [ ]

l. CD ROM [ ]

m. Tape [ ]

n. Others (specify)...……....

3. How adequate is the storage system?

	Storage facilities	Very adequate 3	Adequate 2	Undecided 1	Inadequate 0
a.	File				
b.	Folders				
c.	Wooden				

	shelves				
d.	Metal shelves				
e.	Wooden cupboards				
f.	Metal cabinet drawers				
g.	Metal safe				
h.	Computer				
I	Hard Drive				
J.	CD ROM				
k.	Tape				
l.	Floppy disk				
m.	Others (specify)…….				

Section C: Medical Records Filing System

1. What systems of file arrangement are you practicing in your General Hospital

   a. Alphabetical [ ]

   b. Numerical [ ]

   c. Chronological [ ]

   d. Alpha-numerical [ ]

   e. By department [

   f. Others(specify)

   ……

Section D: Preservation of Medical Records

Specific instruction**:** you may tick more than one option.

1. Which of these manual techniques are adopted in your General Hospital to preserve medical records (tick as many as applicable?)
   a. Lamination [ ]
   b. Microfilming [ ]
   c. Binding [ ]
   d. Encapsulation [ ]
   e. Cleaning and dusting of medical records [ ]
   f. Deacidification [ ]
   g. Photocopying [ ]
   h. Shelving of medical records to allow for free flow of air [ ]
   i. Installing air conditioner [ ]
   j. Provision of adequate security system to prevent theft, mutilation, and defacing of paper-based materials [ ]
   k. Use of insecticide and insect repellant for medical records preservation [ ]

   1. Others (specify)……..
   2. Which of the following digital preservation techniques do you use in your medical records department? (Tick as applicable)
   a. Refreshing (periodic copying from one physical medium to another[ ]

b. Technology preservation (replicating any old configuration of hardware and software) [ ]

c. Migration (Transfer of digital materials from one generation of computer technology to subsequent generation) [ ]

d. Emulation (preserving the original application programs) [ ]

e. Encapsulation (creating the original application that was used to create or access the digital object on future computer platforms) [ ]

f. Others (specify)……