GENERATION, ORGANISATION AND USE OF MEDICAL RECORDS IN PRIMARY HEALTH CARE CENTRES OF AHMADU BELLO UNIVERSITY, ZARIA

By

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DEPARTMENT OF LIBRARY AND INFORMATION SCIENCE,
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DECEMBER, 2014.

DECLARATION

I declare that the work in this thesis entitled "Generation, Organization and Use of Medical Records in Primary Health Care Centres of Ahmadu Bello University, Zaria" has been carried out by me. All sources of information are duly acknowledged by means of references. No part of this thesis was previously presented for a degree or Diploma in this or any other institution.

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CERTIFICATION

This thesis entitled "Generation, Organization and Use of Medical Records in Primary Health Care Centres of Ahmadu Bello University, Zaria by AFINIKI AKUSO meets the regulations governing the award of the degree of Master of Archives and Records Management (MARM) of Ahmadu Bello University, Zaria, and is approved for its contribution to knowledge and literary presentation.

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DEDICATION

This research work is dedicated to the Almighty God who saw me through the ups and downs, in rain and sunshine. Also to my parents, His Royal Highness the Chief of Kubacha, Mallam Ibrahim Ereje and my best and unforgettable mother, late Mallama Hauwa Ibrahim (Mama Afini), who laid the foundation of my academic life, my husband Pst. Dr. Ezekiel Akuso and my wonderful children Jenom, Nomsu (Hauwa), Rinom and my baby Prayer Akuso all for being there always.

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ABSTRACT

The study aimed at investigating the generation, organization and use of medical records in Primary Health Care Centres of Ahmadu Bello University, Zaria. To achieve these objectives, six research questions were formulated and answered accordingly. Review of related literatures was also carried out which covered types of medical records generated, when they are generated and the use of these medical records in primary health care centres. The survey research method was adopted for this study. The population under this study consisted of record staff, nurses, laboratory technicians, and doctors of all the Primary Health Care Centres in Ahmadu Bello University Zaria. A total of 100 respondents from the population formed the sample for this study. The five primary Health Care centres studied were University Health Care Services Samaru-Main Campus, University Health Care Services Kongo Campus, National Animal Production Institute (NAPRI) Clinic Shika, Institute of Agricultural Research (IAR) Clinic, Samaru and Divisional of Agricultural Colleges (DAC) Clinic, Samaru. The data was collected by distributing questionnaires, which was the instrument used for data collection. The data collected were analyzed using the frequency distribution tables, simple percentages and histograms. Based on the data collected and analyzed, the result of the findings indicated that patients' folders, antenatal records and family planning records among others were the types of medical records generated with the highest frequencies. It also states that medical records were commonly generated when making reference to patient's file and from test results. Furthermore, the alphabetical and departmental methods were the systems used for organizing medical records with the highest frequencies. It also revealed that family planning records and general out patient records were the commonest medical records used among others with the highest frequency while eye record and X-ray were the rarely used. It was also discovered that planning and proper diagnoses were the major purposes of using medical records which were the highest. And that computers and photocopiers were the commonest ICTs used for generating and use of medical records which carried the highest response rate. It was recommended that qualified and competent staff be used for generating and organization of medical records, a uniformed method of organizing medical records be adopted across the five primary Health Care centres. There should be diversified sources of generating medical records and Primary Health Care Centres should enhance the use of adequate and relevant ICTs gadgets which can lead to full automation system.

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LIST OF ABBREVIATIONS

PHCC	- Primary Health Care Centre
RM	- Record Management
MR	-Medical Record
ABU	- Ahmadu Bello University
NAPRI	- National Animal Production Research Institute
DAC	- Division of Agricultural Colleges
IAR	- Institute of Agricultural Research

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

In every human endeavour, records are generated on a daily basis. These records serve as a channel of expression for most organizations, institutions or agencies. For organisations to achieve their set-up goals and objectives in their day to day operations, information must be well captured at the point of generation and the ability to organize them well will determine their usability and accessibility.

Records serve as an evidence for any business transactions. The role and importance of records to any organization cannot be over emphasized. They are not only generated and received, but they constitute the pillars that keep an organization in all aspects of its operations and existence almost on daily basis. These records contain information which is crucial to human endeavour as reported by Hassan (2009), that information is an indispensable tool in office work, management, and decision making and in work productivity. This is to say that effectively organized and good management of private and public sectors / organizations' records, depend heavily on the availability of current, complete, accurate and reliable information which is generated and supplied on time to facilitate planning, decision making and in order to enhance productivity.

The nature of record varies, depending on the purpose, setting and context of the services delivered. However, whatever type of record there is, it is important that the staff or record manager get familiar with the legal and ethical requirements for record management in the context of that specific professional context.(Egwunyenya, 2009). On this note, Uwaifo (2004), says that medical records management must be guided by some levels of confidentiality, proper maintenance, security, preservation of content and context.

According to Akporhonor and Iwhiwhu, (2007) the personnels who maintain the registry systems with filing cabinets containing the paper evidence of medical records are inadequate and in fact not so much knowledgeable of their responsibilities. It was further pointed out that other associated problems of recording, generating, organizing and using medical records, including lack of record manual and filling guidelines, lead to loss of vital information (Iwhiwhu, 2000).

Records can be defined as information in any format created, received and maintained as evidence by an organization or individual in pursuance of legal obligations or in the transaction of business (ICOLC.2005). Records generally are created for various reasons such as reference, informative and legal purposes. Records are considered to be vital and of great value in every organization. Therefore, proper management is imperative in order to ensure their use, retention, accessibility, retrieval and storage. This can be achieved through proper management principles. The fact that different organizations and individuals create or generate different types of records remains indisputable. Records are created or generated for certain purposes and for these purposes to be achieved; there must be proper and effective records management. Records Management is the efficient and systematic control of records from creation to disposition. It is the process of maintenance and use of the records of an agency. With the passage of time, medical records have become the backbone for developing a new dimension in the health sector. World Health Organization (WHO) introduced the International Classifications of Diseases with the view of integrating the proper diagnosis systems and also formulating the time and factual data on the basis of medical records kept by the health sector. By this they laid emphasis on caring for patients by checking the errors committed due to ignorance. It also helps to check

carelessness under or over estimation of drugs / treatment and non-channel attitudes of health workers.

Medical records serve as legal documents, and are subject to the laws of the country, state or the organizations in which they are produced. As such, there is great variability in rules and regulations governing their productions, ownership, accessibility and destruction. Koocher and Keith-Spiegel (1998), note that every organization must have an agreed strategy for managing all its records. This must include a record management policy, clear statement of the responsibilities of staff and record managers at all levels; this is to ensure that objectives of the records management programmes, organizational structure and personnel requirements are achieved.

The origin of medical records can be traced back to the seventh century when (Franklin, 1752 AD), through a hospital which he set in Philadelphia (USA), introduced medical records by preparing a file of special cases on which patient's name, admission date, discharge date, etc were written. In the same way another hospital was opened in Boston in 1821 AD, where a typical method of keeping relevant data for patients was initiated. Separate files for different patients were opened in order to keep their records. These processes proved to be more helpful in finding the necessary data regarding the patients and in acquiring important facts that could make it easier to take care of them.

Medical Record is an important document meant basically for recording the treatment procedure for a patient. This record is important to both the patient, as well as the doctor. It has become the only crucial and effective weapon doctors use to counter the false claims of the patient when they file a case against them. As such both outpatient treatment and inpatient management should be documented completely and carefully by the consultant

including all preoperative instructions, prescriptions and content for invasive procedures and surgery should be recorded carefully (Consumer Protection Act, 1986).

Michalak (1997) asserts that medical Records are basically the daily orders related to the indoor patients including the few outdoor sheets. These include the findings on the patients who have visited the doctors on that day and drug prescriptions which have been continued or changed. All these he added must be legibly written.

Medical records are very relevant to the consultants because they are the daily notes which they have to refer time and again during the course of the treatment until the patient is completely cured. They use these notes to consult operative events and treat the patient, plan for the next operation, and discover any problem and plan for the next line of action. These same notes are used for patient's follow – up. They can be used for referral purposes where the history of the patient's health care is written, medication and treatment given or diagnosis. These will help the next doctor reach a conclusive diagnosis and be able to treat the patient accordingly. Medical records help staff members get instructions from daily orders as to which drug is to be administered with its dosage.

Medical records are also required at the law suit because these are the most important documents that can be used in a legal case. They can be used to prove the innocence of a doctor. On the other hand, the doctor or the consultants under the medical ethics are supposed to give the case report to the patient on request. Medical Records if properly managed can become defence shields for the doctor in the court of law. Hence proper maintenance of such records is necessary. Every record management process should be put in place to safe-guard such records.

1.1.2 Primary Health Care Centre.

A Primary Health Care Centre is the first level of the health care service delivery closer to the people in the community they live or work. The Primary Health Care Centres are mostly run by organizations, institutions or governments of such communities. Where they are not able to attend to the patient, a referral to a bigger [secondary] health care centre for better treatment is given. A Primary Health Care Centre is an essential health care based on practically, scientifically sound, and socially acceptable methods and technology, universally accessible to all in the community through their full participation at an affordable cost [WHO & UNICEF, 1978]. Furthermore, a Primary Health Care Centre lays its emphasis of health care delivery to the people themselves and their needs to reshape their lives health wise.

1.1.3 Primary Health Care Centres in Ahmadu Bello University.

Ahmadu Bello University, Zaria as an academic institution comprising of staff and students of different levels and categories has five Primary Health Care Centres which are located at the Samaru Main Campus, Congo Campus, Quarter 3 for IAR, Samaru, DAC (Divisional of Agricultural Colleges) Samaru and NAPRI (National Animal Production Research Institute) Shika, Zaria. They offer Primary Health Care services to a population of about one hundred thousand (100,000) people made up of Staff with their family members and Students of all levels and the Samaru Community. Where they cannot continue, they refer such cases to the Ahmadu Bello University Teaching Hospital, Shika for further investigations and treatments.

The Primary Health Care Centre in the Main Campus, which is the Sick – Bay, presently covers the location of the total of over 2,600 square metres. It was occupied since 1968, before then, it was located at different areas at different times. It started at the

Nagwamatse Road in Area A quarters of A.B.U Samaru Zaria, later it was shifted to Cappa Housing Unit, then to the former Community Medicine Department and finally to its present location.

These movements were necessitated in order to create more conducive space to cope with the rising demands for these services as the University population is always on the increase. To support this argument, in 1972 the main campus Sick – Bay attended to an estimated average number of 350 cases on a daily basis. By 1982, it rose to about 500. In 1987, 700, from 1997 – 2002, 900 and by 2005 – date to over 1,000 cases daily. On the Congo Campus, the Sick –Bay is located opposite the Security Office, with expansion programmes going on at different stages in order to cope with the rising demands of and for its services. Presently, it occupies about 2,000 square metres and has attended to about 200 cases on daily basis as at 1972, 286 cases by 1982, 309 – 400 cases by 1997 and about 500 – 600 cases by 2005 to date on a daily basis.

The third Primary Health Care Centre, which is affiliated to the main campus, is the IAR Clinic which is located at Area 3 quarters Samaru. We also have the NAPRI clinic which is located at Shika and the DAC clinic at the Division of Agricultural Colleges respectively. All these affiliated clinics threat common illnesses while difficult or complicated ones are referred to the main campus and where it cannot handle, the patient is referred to Ahmadu Bello University Teaching Hospital, (Health Services. Strategic Planning Handbook 2006 – 2011).

1.2 Statement of the Problem

Records management practice is a universally accepted act from generation to disposal. Mc Gill University in USA, as opined by Cox (2010), records management practice beside cultural, historical, legal and economic efficiency and dimensions of records

management, serve as source of accountability. Similarly in the survey conducted by Iron Mountain (2010 in Boston USA), it was revealed that about 80% of the organizations in US have command for the basics for managing physical records and less than 23% have established policies that cover electronic records like emails, images and other forms of digital data. It was further discovered that 65% of their companies are committed to improving their records management programmes and have basic record management programmes put in place. These records include formal records policies and procedures, retention schedules, off-site storage and critical backup's tapes, CDs, hard copies records and systems for rapid retrieval. Most of our Primary Health Care Systems are lacking in such operational policies. Like any other Organization, our Primary Health Care systems need easy access to records; this will facilitate quick, effective and quality service delivery to its users. This can be attainable only and when our medical records are well generated and organized.

The University Primary Health Care Services have the responsibility to ensure that medical records are generated, organized and used in a way that users will be able to have easy access to their records at a time of need. This is because there is a changing role in information delivery that affects even the medical sector as opined by Hamid (2006). Information technology is transforming the way health care services are delivered through effective information packaging, assessing and organization. Ahmadu Bello University as a Premier University in northern Nigeria, offers primary health care services to its staff and students 24hours daily in its main campus and other satellite campuses. Preliminary investigation by the researcher further reveals that due to the increased number of people in the University's Primary Health Care Centres (either by employment as staff or by admission as students), there is daily increase of patients. This has also led to increased

accumulation of patients medical records because the University Health Services provide about 80% of the health care service deliveries in its Primary Health Care Centres. In a related development, some of the staff of Records Section are not professionals in the field of records management; therefore records are not properly captured/generated. (Ahmadu Bello University Health Care Services Hand Book 2010). It is in view of these that the researcher decided to embark on this research which has to do with the Generation, Organization and Use of Medical Records in the University's Primary Health Care Centres with the aim of complimenting the efforts of the governing board in providing and ensuring effective and efficient health care service delivery by discovering problems militating against effective generation, organization and use of patients medical records and proffer solutions to the existing problems.

1.3 Research Questions

This research study hopes to provide answers to the following research questions

1. What types of medical records are generated in Primary Health Care Centres of Ahmadu Bello University, Zaria?
2. When are medical records generated in Primary Health Care Centres of Ahmadu Bello University, Zaria?
3. How are medical records organized in Primary Health Care Centres of Ahmadu Bello University, Zaria?
4. What types of medical records are used in Primary Health Care Centres of Ahmadu Bello University, Zaria?
5. For what purpose (s) are medical records used in primary health care centres of Ahmadu Bello University Zaria

6. What type of ICTs facilities are used for medical records generation, organization and use in primary health care centres of Ahmadu Bello University Zaria?

1.4 Objectives of the Study

The objectives of the study are as follows:

1. To identify the types of medical records that are being generated in Primary Health Care Centres of Ahmadu Bello University, Zaria.
2. To find out when medical records are generated in Primary Health Care Centres of Ahmadu Bello University, Zaria.
3. To find out how medical records are organized in Primary Health Care Centres of Ahmadu Bello University, Zaria.
4. To identify what types of medical records are used in Primary Health Care Centres of Ahmadu Bello University, Zaria.
5. To discover the purpose (s) of medical records in primary health care centres of Ahmadu Bello University, Zaria
6. To find out what type (s) of ICTs are used for medical records generation, organization and use in primary health care centres of Ahmadu Bello University, Zaria.

1.5 Significance of the Study

One of the basic reasons for conducting research is to add to knowledge and find solution(s) to existing problems which will help in societal progress and development. Management is a major ingredient in ensuring a smooth running of an organization which involves generation, organization and use as part of the managerial processes. For an organization to stand the test of time, it must be able to capture/generate, receive, use and store records in different forms and types. This research however, hopes to provide solutions to inadequacies that exist in the generation, organization and use of medical

records in Ahmadu Bello University Primary Health Care Services. It will also encourage the use of professionals in the records office and to as many as are responsible for generating, organizing receiving, using or storing patient's medical records in Ahmadu Bello University Primary Health Care Centres. Furthermore, it would suggest ways ICT can be applied to improve the generating, organizing and the use of medical records in Ahmadu Bello University Primary Health Care Centres.

1.6 Basic Assumptions

This research work is based on the assumptions that:

1. Effective generation, organization and use of medical records can lead to effective utilization of the medical records which will in turn lead to effective service delivery in medical institutions.
2. Effective and efficient use of professional staff can reduce problems faced in generating, organizing and use of medical records.
3. Application of ICT can help improve in the medical records generation, organization and use.

1.7 Scope and Delimitations

This research covers 'The Generation, Organization, and Use of Medical Records in Primary Health Care Centres of Ahamdu Bello University, Zaria. It is limited to that of the Main Campus, Kongo Campus, Division of Agriculture Colleges (DAC), National Animal Production Research Institute (NAPRI) and Institute for Agriculture Research (IAR) in Quarter III, Samaru Zaria.

1.8 Limitation of the Study

This study is limited to generation, organisation and use of Medical Records in Primary Health Care Centres of Ahmadu Bello University, Zaria due to some challenges

and inconveniences such as respondents' attitude towards data collection, time within which to complete the project and other logistics.

1.9 Operational Definition of Terms

In this research work, the following terms are defined as follows:

Record: Information concerning a patient in any format generated, received and maintained.

Management: The process of getting things done through the use of both human and material resources.

Record Management: Organization of all medical information on patient which involves a systematic control of generation, receipt, maintenance, use and disposition of patient's medical records.

Medical Records: Case notes written by a medical personnel on a patient's visit to th health care centre.

Organization: The way in which different records are arranged or related to each other or the making of necessary arrangements for the different records accordingly.

Use: This is the act of doing something with the medical records in order to achieve a particular result or effect.

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CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter reviewed literature under the following sub-headings:-

2.1 The Concept of Medical Records

2.2 Generation of Medical Records

2.3 Organization of Medical Records in Primary Health Care Centres

2.4 Use of Medical Records in Primary Health Care Centres

2.5 Medical Records Management in Nigeria

2.6 Factors affecting the use of ICT in the generation, organization and use of Medical Records in Primary Health Care Centres.

2.7 Summary of review.

2.2 The Concept of Medical Records

Medical record is an important compilation of facts about a patient's life and health. It includes documented data on past and present illnesses and treatment written by health care professionals caring for the patient. The medical record "must contain sufficient data to identify the patient, support the diagnosis or reason for attendance at the health care facility, justify the treatment and accurately document the results of that treatment" (Huffman, 1990). The main purpose of the medical record is: to record the facts about a patient's health with emphasis on events affecting the patient during the current admission or attendance at the health care facility, and for the continuing care of the patient when they require health care in the future.

A patient's medical record should provide accurate information on: who the patient is and who provided health care; what, when, why and how services were provided; and the outcome of care and treatment. The medical record has four major sections:

1. Administrative: This includes demographic and socioeconomic data such as the name of the patient (identification), sex, date of birth, place of birth, patient's ermanent address, and medical record number;

2. Legal Data: This is a signed consent for treatment by appointed doctors and authorization for the release of information;

3. Financial Data: This relates to the payment of fees for medical services and hospital accommodation

4. Clinical Data: This reveals whether the patient was admitted to the hospital or treated as an outpatient or an emergency patient.

It is important to note that accurate, timely and accessible health care data plays a vital role in the planning, development and maintenance of health care services. The quality of data in the medical record and its availability is essential if health care authorities wish to maintain health care at optimal level, (Loudon, 2006)

The main uses of the Medical Record are:

1. To document the cause of the patient's illness and treatment;

2. To communicate between attending doctors and other health care professionals providing care to the patient;

3. For the continuing care of the patient;

4. For research of specific diseases and treatment; and

5. For the collection of health statistics.

2.3 Generation of Medical Records in Primary Health Care Centres

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 care. They enable physicians to offer quality health care to their patients.

They are living documents that tell the history of the patients and each encounter they have had with any health professionals involved in delivering any of the health care services to the individuals / patients. Furthermore, a complete and accurate medical record 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. This is to mention but a few, 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 care centre or received either by way of referral or transfer cases all for the purpose of rendering a particular health care 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.

Medical record begins with the patient's first admission as an inpatient or attendance as an outpatient (if a combined medical record) to the health care facility. This begins with the collection of identification information, which is recorded on the front sheet

or identification and summary sheet. The name of the first form in the medical record varies from hospital to hospital and country to country. Accurate identification of a patient is the backbone of an effective and efficient medical record system. Correct identification is needed to positively identify the patient and ensure that each patient has one medical record number and one medical record. Patient identification is a key issue for medical record services. Ideally, the staff in the Admission Office should be responsible to the Medical Records Office (MRO) to enable them to be trained in identification procedures. It would also enable the MRO to monitor their performance and re-train if required. World Health Organization (2006).

Once a patient has been identified the next step is to be able to identify their medical record. The collection of patient identification data and the assignment of a medical record number or verification of an existing medical record number should be the first step in every admission procedure. In this system the patient is given a medical record number at the time of the first attendance at the hospital. This number is then used during the current admission and in the future to identify a patient and his or her medical record. Carpenter etal (2007)

Huffman, (1990), opines that the term used for this number varies from hospital to hospital and country to country. It can be referred to as the hospital number, patient identification number, unit record number or medical record number. In some hospitals, every time a patient comes to the hospital, a new medical record number is given and a new medical record is started. With this system, a patient could have many medical records scattered throughout the file room. This is not recommended. For good patient care, the patient should have one medical record with all admissions filed in the one record and kept in the one place.

2.4.1 Medical Record Forms/Types

According to Williams (2003), 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 generated so that the health need of the patients with different health challenges is met. The medical record therefore, is a powerful tool 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 care. It enables physicians to offer quality health care to their patients. It is a living document that tells the history of the patient and each encounter with any health professionals in the delivery of any health care service. Kukah (2005), listed medical records as identification records, clinical records, treatment notes, laboratory records, obstetrics records, new born records, radiology, physiotherapy records, doctors orders, family planning records. This also include any other document (record) created for the patient in the process of any health service delivery. These records are either generated as the patient visits the health care centre or received either by way of referral or transfer cases all for the purpose of rendering health care service delivery, and if this be the primary purpose, then all medical records must be well captured with content well and clearly stated.

The medical record is made up of a number of forms, which are used for specific purposes. The basic set of forms in the inpatient medical record includes:

1. Front sheet or identification and summary sheet, which covers identification, final diagnoses, disease and operation codes, and the 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.

3. Correspondence and legal documents received about the patient, e.g., referral letter, requests for information, etc.;
4. Discharge summary, if required by the hospital/health authority;
5. admission notes, including the patient's family medical history, the patient's past medical history, presenting symptoms, results of a physical examination, provisional diagnosis (the 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 care professionals;
7. nurses' progress notes recording daily nursing care including temperature, pulse and respiration charts, blood pressure charts etc.;
8. Operation report if an operation or operations are performed;
9. Other health care professional notes, e.g., physiotherapy, X-ray, Social Workers, etc.;
10. Pathology reports including haematology, histology, microbiology, etc.;
11. 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; and
12. Special nursing forms for observation of head injuries etc., (Amatayakul, 2004).

2.5 Organization of Medical Records in Primary Health Care Centres

Every organization must develop an organized way of storing its information so that it can be easily accessible at the time of use to its users. To organize simply means the way in which its different parts are arranged or related to each other. It is the act of maintaining

records separately from those of others and used to transact business or render service delivery (Schellenberg, 1965). It is also the description and arrangement for easy retrieval of records and archives through the use of finding aids. It is expected that the organization describes as precise as possible, the structure, contents, nature and purpose of such records or archives. To do this fully, it has to involve the class list which is the tabular summary of the records contents from the simple list in serial order of record groups describing the entire lists, (Abraham, 2014). It is the responsibility of each organization, institution or any business area to develop and implement a scheme for organizing the records within their possession. This can be best done by those responsible for carrying out the functions and activities that are covered by the information map (Informap.htm)-or by administrators charged with the responsibility of records management in such organizations. It is the responsibility of such to customize such schemes for their own use.

According to Lenexa (2005), there are three main approaches/schemes for organizing/filing records:

Subject Base Approach: A subject base approach to organizing/filing involves the development of a classification scheme for the records base on subject matter. Subject base schemes work well for case files where the files can be easily arranged by an individual for example appeal or disciplinary files or an individual organization. The scheme also works well for subject based on research records. The approach is not recommended for other types of records, however, it needs to be recognized that the development of a comprehensive subject based organizing/filing scheme is a lengthy and time consuming process both to create and to maintain.

Organization Based Approach: An organization based approach will require a structure of the scheme to reflect the organizational structure of the organization. The main

advantage of this scheme is that it keeps together related business issues in specific record series (Glossary.htm) and which, when seen together, can provide a rapid understanding of the work and structure of the organization. The major disadvantage of the system is that the institution's organizational structure is certainly not static and is always subject to change due to both internal and external reasons. Another disadvantage is that it becomes more difficult to find information over time, as those who remember the earlier organizational structure from which the scheme evolved slowly/gradually leaves the organisation.

Function-Based Approach: A function based approach generates a clear business context for the records. It does this by employing a hierarchical division based on the business functions, activities and transactions carried out by the organization. If an information map (informap.htm) has already been produced, the information you need to generate a function based scheme will already be there. The functional approach is far less subjective than a subject-based approach and more enduring than one based on organization. It is true that business function changes frequently than organizational structures. Although the general recommendation is for the preparation of organizing/filing schemes based on the functional model, guidance will still be provided for the preparation of both the subject base and organization based models. Furthermore, Lenexa, (2005), opines that there are a number of different methods for organizing, storing or filing records, these include; alphabetic, subject, numeric and geographic, however, the most common method is the alphabetic filing system. Nevertheless, procedures for alphabetical records storing may vary from one organization to the other and even among departments within the organization. This may depend on the types of records they generate, business transactions, types of users and organizational goals and objectives. These fall in line with

Abiola (2014), who asserts that records are organized and arranged by adopting a suitable classification system. The following are some of the common classification systems:

Alphabetic – records are arranged by the name of a person, place or institution. Arrangement can also be by topic.

Chronological – This is arrangement by sequential date order. The disadvantage of the system is that retrieval can be slow and difficult due to memory failure as to the accurate dates.

Running number - each is assigned the next number in a running sequence irrespective of the subject of the file. The systems ensure efficient storage space utilization since gaps need not be left within a sequence to accommodate new file. The systems are most suitable for case files where the subject matters are essentially the same but where each file relates to an individual case.

Alpha-numeric – combines the alphabet and number. The primaries take the alphabet while the secondary and tertiary are assigned numbers.

Hierarchical - under this system, the business of an organisation is broken into a hierarchy of levels. The broad functions (series) are at the top of the hierarchy. This can be sub-divided into narrower functions and activities (sub-series) e.g.

Building (broad function/series)

Maintenance (narrower function/sub-series)

Painting (activity/sub-sub-sub-series).

While (Franklin, 1752 AD), in a hospital which he sets in Philadelphia (USA), organized medical records by preparing the file of his patients by their cases and arranging them according to their names, admission dates, discharge dates and appointment dates. This principle keeps records on the basis of their organizational origins, and so, must be

organized separately in order to maintain and respect the nature of the record as it was generated. This may require grouping the records according to their transactional origin or source. It must not be mingled with others any how; records from the same source, origin, kind and type must be in one place for easy access. The management of records must however be consistent with the universal principles and ensure that records are managed appropriately and retrieved at the time of need.

Versace (2010) viewed that the primary organizational message was to get back to the basics of the principles of records management and use these principles for sound information governance. These principles, according to him, were assigned a senior executive to oversee and be accountable for record programme, adopt policies and procedures to guide personnel and make all business managers accountable for information governance and records management principles. Records generated or managed by or for an organization should have suitable guarantee of authenticity and reliability, the organizations must adopt technologies and processes that can provide suitable and reasonable guarantee. Ensure a reasonable level of protection to records and information that are private, confidential, privileged, secret or essential to business continuity. Comply with applicable jurisdictional laws, regulations, and the organizations policies. Maintain records in a manner that ensures timely, efficient and accurate retrieval of needed information. Maintain records and other information for an appropriate time taking into account business, legal regulatory, fiscal, operational, and other requirements. Dispose records that have no incremental business value or that create liability for the organization. Furthermore, there factors that have shaped the concepts, principles and techniques which records/archives managers use to carry out their responsibilities. John (2011) indicated these as the inter-relatedness of records, the central importance of records and the function

of records as evidence. He further stressed the essential characteristics of records which require that records are complete, fixed, organic, contextual, authoritative and unique. The foundation principles of organizing and keeping archives were also explored and they are the principles of providence, the principle of original order or sanctity of the original and the chain of responsible custody.

Richard,(1972), further states that for records to serve as evidence, they must be traceable to their source and reflect their contexts of origin or generation. This principle was adopted to preserve the chain of accountability within the ever-growing number of records documenting similar functions and activities like in the health sector. Two different patients can have medical records that read similar or the same. For example, typhoid or malaria tests slip given to two different patients. Whatever happens, a medical record manager should aspire for the best standard in organizing records. This will help maintain order, ease collection accessibility, use and retrieval which will reduce inconsistencies in the system. Where there is no policy guiding the organization of records, it can lead to misplacement and missing of vital records which can lead to serious problems especially in the health sector to both the user and generator of such records.

The principal purpose of medical records and medical notes is to record and communicate information about patients and their care. If notes are not organized and completed properly, it can lead to frustration, debate, clinical misadventure and litigation. Medical records are now used not only as a comprehensive record of care but also as a source of data for hospital service activity reporting, monitoring the performance of hospitals and for audit and research. According to the Audit Commission (2008) many of the causes of inaccurate clinical coding of this secondary data are rooted in the quality of medical notes. The quality of medical record keeping in the UK is highly variable across

the National Health Services (NHS). The layout of admission, handover and discharge preformed is very different between hospitals and clinical departments and many do not use preformed. This variability is largely because doctors learn how to take a medical history by apprenticeship rather than the application of a standard record structure. However, research evidence shows that structured records have beneficial effects on doctor performance and patient outcomes, (Williams, 2003).

The constant drive to improve the quality and safety of medical practice and hospital services and the increasing expectations and costs of medical care means the structure and content of the clinical record is becoming ever more important, (Loudon, 2006). Implementation of electronic patient records in the NHS critically increases the importance of structured records.

Record keeping standards can be sub-divided into two categories: generic standards for good practice and specific standards to define the structure and content in specific clinical contexts**.** Generic medical record keeping standards apply to all medical notes and address the broad requirements for clinical note keeping.

2.6 Use and purpose of Medical Records in Primary Health Care Centre.

The extent of use of medical records has been recognized to greatly improve quality and safety in the delivery of health care. A report by Kohn et al. (2010) revealed an estimated 44,000 and 98,000 Americans dying from medical error as a result of poor use and availability of medical records. Records serve as “memory “of a business. They document the information needed in operating an organization, like policies that are developed and recorded to furnish broad guidelines for operating a business. According to Read-Smith, (2002), records are used and retained because they have one or more of the following values: Administrative value. Records help the employee perform office

operations within the organization better. Through policy and procedures manuals, handbook and organizational charts, the administration is able to manage her office well. Records also have fiscal values because they are used to conduct current or future financial or fiscal business. The Historical values of records are eminent because they furnish the organization's operations and major activities as directed over the years.

For every medical record created or received is for specific purpose which may not be far from the ultimate goal of rendering effective and efficient health services. CPOSO Policy statement –medical records (2012) opines that the primary purpose of medical records is to enable physicians to provide quality health care services because medical records serve as a living document that tells the physicians about the patients' health. It carries a complete and accurate medical history of the patient which can meet every legal regulatory and auditing requirement that anybody may need. Medical records are a powerful tool which allows a physician to track patients' medical history and identify any pattern that may help in determining an effective service delivery. Medical records contribute immensely by providing consistency and quality in patient's health care delivery.

Ramunni (2008) opined that medical records provide detailed description of patient's health status and a reason (rationale) for any treatment decided. Medical records give room for continuity of care because though created or received by one physician but can be used by several health practitioners to access and understand the patient's past and current health status. This enables present health provider to know where the last stops so as to continue without any hitch or starting again. Medical records are evidential documents which can provide significant evidence in billing reviews, physicians self – assessments, etc. where the physician reflects on and assesses the care that have been provided to the patient. They are also legal documents which can provide significant

evidence in regulatory, civil, criminal, or administrative matters when a patient care provider is questioned.

Carpenter etal, (2007), opines that in a medical records system, records document the history and progress of a patient's illness or injury. They preserve information of medical, clinical, scientific, legal, financial, and planning value. The medical record is a compilation of observations and findings recorded by the patient's physician and other clinical staff. Entries and reports become part of the patient's medical record. While Stanfsfield, (2005) view that Surgery, pathology, and nursing service reports, diagnostic test results, progress reports, and nutrition orders are examples of data included in the record. He further states that information contained within a system of medical records is essential for:

1. Patient Management and Services - to diagnose and treat illnesses and document medical care services provided to the patient.

2. Financial Reimbursement - to substantiate insurance claims of health facilities and patients and to ensure reimbursement under Federal and State medical programs.
3. Management Planning - to help administrative and medical staff in planning services and determining resources.
4. Utilization Review and Quality Assurance - to evaluate the quality, adequacy, and appropriateness of medical care services.
5. Research - to provide data to expand the body of medical knowledge. The record allows medical researchers to formulate new methods of treatment and to compare the effectiveness and efficiency of different treatments and medications.

6. Legal Affairs - to provide data to help in protecting the legal interest of the patient, the physician, and the facility.
7. Education - to provide actual case studies for the education of health professionals.
8. Accreditation - to provide the factual data necessary for accreditation and licensure.

While Heiman,(2010), shares that all medical records of patients irrespective of whether they are created or received must be easily and readily accessible for use when the need arises by appropriate and authorized persons including the patients or their authorized representative. To utilize, simply means to use or to put to use. Utilization is the focal point in the management of medical records or any other records created or received. Good usage of such record may be based on its availability to the users, easy location and retrieval. In most health care centres' filing is the most common way through which records are easily located, however, there are other ways through which patients' records can be located or retrieved. These include abstracting, classification; indexing or numbering. All of these must comply with the aims and objective of the health care centre. Osundia (2005) describes filing system as set of records that is arranged in a describe order for convenience of reference, usage and preservation.

The rationale behind filing of records is not far from enhancing easy and quick retrieval for use at the time needed. And for these to be realized, Penn et al, (1989) is of the opinion that, for proper utilization of medical records, all questions regarding information storage and retrieval systems must be answered. These questions are to be answered at the point of record generation, they must be well captured or answered because these answers will determine the way in which information is or will be captured. Akanji, (2005) in his own view shared that accessibility is the ability to locate or gain entry into by use of directory, file or any device, be it electronic or manual. To be accessible, simply means

they can easily be used or obtained. For medical records to be accessible, means they can easily be used or obtained when needed. Records that cannot be accessed cannot be used, and if they cannot be used, the purpose of creating or receiving them is defeated. For easy retrieval of records, Ordi, (2010) opines that the record must be well organized. This shows that for records to be easily retrieved, good organization is needed. To organize therefore, means you arrange the activity to make sure easy and quick retrieval is enhanced. (Collins, 1994).

While Read-Smith etal. (2002), says that a successful utilization of medical records rests at the point of generation or receipt, yet many records are generated unnecessarily in many organizations including the health care centers on a daily basis. Because these records at the point of generation don't capture the right information nor answer the right questions at the time of use it becomes either difficult to retrieve or may not be retrieved or located at all. Any mistake made at the point of generation or receipt, can render a record inaccessible and un-utilized. Getting and capturing the right information for a patient in an organized manner will go a long way in enhancing good accessibility and utilization of all medical records at the time of need.

2.7 Medical Records Management in Nigeria

The management of medical records requires knowledge of medical record administration as well as management skills and abilities by trained personnels. Records Management is the practice of maintaining the records of an organization while a record manager is one who is responsible for the effective and appropriate management of an organization's records (Franklin, 1752). Management simply means the act of getting things done through human and material resources. So for medical records to be well managed, Primary Health Care centre should employ the services of well trained and

qualified personnel to get the work done and done effectively and efficiently they must be trained in the principles and ethics guiding the management of medical records. Opportunities to attain workshops, conferences, seminars and training programmes should be given or created because these are avenues where they can learn new trends in record management for better service delivery.

Medical Record is a permanent documentation about a patient's transaction in the form of records. It is a history and progress of a patient's medical care. Records are used for continuity of a patient's care, verification of insurance claims, legal business document outlining the course of a patient's medical care, to provide statistical and factual information for hospital administration, licensing and other regulatory bodies and medical research, perspective Health Management (2011).

The history of medical records in Nigeria can be traced back to the Second World War in 1945. Following the devastating effects on the victims of the world war; this became a motivating factor for the government of Nigeria to introduce National Health Care Services for the war victims. (Akinyi, 2006). This included the systematic documentation of a patient's medical records and the care given to them. This became needful for the smooth running of any health care institution. Records which constitute an essential instrument for the effective operational processes and functions carry the information that is needed for effective and efficient service delivery (Standfield, 2005). In Nigeria, just like in other countries, the nature and extent of records vary depending on purpose, setting and context of the services. .Whatever type the record may be, it is important that the staff get familiar with the legal and ethical requirements for record management. (Egwunyenga, 2009). Koocher and Keith-Spiegel, [1998] supported this view when they said that medical records are legal documents and are subject to the law of the country in which they are produced. As such

there is great variability in rules governing production, ownership, accessibility and destruction. Consequently, there are standards and policies set for management, storage, access and destruction of records which when not in use can lead to ineffective utilization of medical records.

For effective record management in Nigeria, health care system or Hospitals authorities must have an agreed strategy for managing all medical records. These must include a record management policy, a clear statement of the responsibilities of staff at all levels. This will help in achieving the Objectives of the record management programmes and the organizational structure and personnel requirement to meet the health care's needs.

2.8 The use of ICT in the Generation, Organization and Used of Medical Records in Primary Health Care Centres.

The advent of Information and Communication Technology (ICT) the world over has brought dramatic changes in almost every form of activities in our society today. This change has swept into many institutions and organizations of different types including the primary Health Care Centre. ICT tools today serve as the life wire through which man solves his problems, through teaching and research, business transactions, agriculture and farming, engineering, sports, medicine etc. such tools include computers, printers, flash drive, CDs, Internet Services etc.

The medical sector is not an exception as ICT tools are used to retrieve patient folder, in diagnosis and treatments, carrying or conducting different types of tests as well as writing and interpreting such test results. These tools are used in creating and receiving patient's medical records, printing, reproducing, storing and preserving such records. This has reduced the burden of carrying bulky files around as noted by Akanji (2005) that manual system of our past operation can no longer manage bulky records created daily

from new and old patients. When computer application systems/programme are adopted, it helps in minimizing the problem of missing patient's files/records, delays in health service delivery. It will also enhance good communication flow between the patient and any health practitioner within and outside the organization. It reduces the risk of carrying patient's records physically thereby securing and protecting it from unauthorized persons that may like to gain access. This is supported by Amaxx (2008) who viewed I.C.T as a starting point in which our health care programmes can be improved to give patients good and quality health care delivery/services. He added that it will enhance information flow in rural communities' health care services. This idea was backed up by Douglas (2003), who said that the application of computer services in our society has made people and health organizations to face and rise to the challenges of using I.C.T tools in managing medical records in primary health care centre. These are fundamental in managing patient's medical records; it makes it easier to access, store, carry, deliver and to be consistent in managing patients' data electronically.

The campaign on the use of I.C.T by the federal, state, local governments and other private organizations has been on the increase. This will enhance national development in a country like ours. In the campaign on fostering Entrepreneurial Development through ICT Training, Angaye (2012), viewed that ICT is a strategic pre-requisite in the new globalization as well as achieving sustainable growth and socio-economic development of any nation. He added that it is increasingly becoming a necessary tool for the creation of the majority of jobs throughout the world. For any organization to record tangible growth in our present day world, the use of ICT cannot be ruled out. Rabiu (2012), supported this view by saying that the Nigerian industry, professionals use ICT tools / gadgets at different levels of services. For instance architects and engineers replaced the use of traditional

drawing boards with computer – aided design (CAD) software to strengthen the effect and efficiency of their designs. Computer – aided cost estimating software is another category of computer programmes used by quantity surveyors or project estimators set to replace the conventional method of measurement and estimation. As for project planning, scheduling and site management, the use of MS project software has brought about a higher level of accuracy, speed programming and the operations of projects managers on site to mention but a few. So also in the management of medical records we have employed the use of ICT gadgets and move gradually from the conventional method of managing records to the world of ICT which will make us move with the changing world.

2.9 Summary of the Review

Many organizations want to progress in their day to day business but are yet to come to terms with the reality of record management processes, procedures, standards and policies. These include a systematic control of the records life cycle from creation to disposal. These inadequacies have affected and hindered many from realizing their set up goals and objectives .Many have lost effectiveness due to poor or lack of record keeping and management policies which can affect future business transactions. Records are used for continuity in business transaction, for verification, as a legal business document, to provide statistical and factual information. Hence, the managers must be well skilled and experienced in order to ensure effective management and control over recorded information. This control is exercised in the creation, distribution, utilization, storage, retention, preservation, protection and disposition of all types of medical records in the health care centre. For easy retrieval and access to the patient medical records, information about the patient must be well captured at the point of generation or receipt. This will help in maintaining continuity and effective service delivery. The use of

Information and Communication Technology facilities will also facilitate easy retrieval and storage. The use of appropriate equipment, building, structures and personnel can enhance good management of records. These are the areas under review in the literatures consulted.

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CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discussed the research methodology and the techniques adopted in carrying out this research work. These are:

3.1 Research Method adopted

3.2 Population of the study

3.3 Sample and sampling procedures

3.4 Instrument for data collection

3.5 Validity and Reliability of the instrument

3.6 Procedure for Data Collection

3.7 Procedure for Data Analysis

3.2 Research Method Adopted for the Study

The research adopted for this study was the survey method. This was used 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 people of the entire group. Furthermore, Osuala (2005) observed that survey research, studies both large and small population in order to discover the relative incidence and interrelations of variables.

3.3 Population of the Study

The population of the study consists of all the five (5) primary Health Care Centres in Ahmadu Bello University Zaria, which are located in the Samaru Main Campus, Congo

Campus, IAR Samaru, NAPRI, and DAC which are the major Primary Health Care Centres for the University Community.

The subject of the study includes all those responsible for the generation, organization and use of medical records in the Primary Health Care Centres of Ahmadu Bello University, Zaria. They are record staff, nurses, laboratory technicians and doctors. Below is table 3.1 showing the population distribution of the respondents:-

Table 3.1 Population distribution of the respondents according to their respective PHCCs

ABUPHCC s staff	Main campus	Congo UHS	IAR clinic	NAPRI Clinic	DAC clinic	Total
Record staff	9	8	1	2	-	**20**
Lab technologist	16	4	-	-	-	**20**
Nurses	25	10	5	3	4	**47**
Doctors	10	3	-	-	-	**13**
Total	**60**	**25**	**6**	**5**	**4**	**100**

Source: *Ahmadu Bello University Health Services Strategic Planning Handbook 2006 – 2011*

3.4 Sample and Sampling Procedure

All the 100 staff (respondents) that manage medical record in the 5 primary health care centres of ABU, Zaria were used as sample for this study. This is due to the fact that the population of the study was not too large; thereby allowing the researcher to provide treatment to each of the staff. According to Esan and Okafor (1995), as cited by Olayiwola (2007), a sample as a sub-set of the population selected to meet specific objective and have the essential characteristics of the target population where is not feasible to use the entire population due to logistic and economic factors.

3.5 Instruments for Data Collection

The research instrument used for this study was questionnaire. This instrument was carefully designed in such a way that they will enhance data collection on generation, organization and use of medical records in Primary Health Care Centres in Ahmadu Bello University, Zaria. The questionnaire for this research was the closed ended type and it contained six (6) sections. Section A consists of Bio-data of the respondent, section B sought to know the different types of medical records, section C found information on the organization and storage of medical records, section D sought to know about the utilization, section E finds information about the application of ICT and section F consists of the preservation of medical records.

3.6 Validity and Reliability of the Instruments

The questionnaire, determined the validity and reliability of the research results. Validity is therefore defined to be "the extent to which a research instrument measures what it claims to measure." An instrument is said to be valid if it measures what it is supposed to measure and does so clearly without accidentally including other factors. (Gregory, 1992). To ascertain the validity of the instrument, the researcher used the face validity by subjecting this instrument to scrutiny by experts, supervisors and senior colleagues. Their corrections and comments improved the format and structure of the research instrument.

Reliability on the other hand is defined as the degree to which a procedure for measuring produces similar outcomes when it is repeated (Baker, 1998: 114). Reliability can also be described as the degree to which measures are free from error and thereby yield consistent results, that is, the consistency of a measurement procedure (Thanasegara, 2009). The reliability of the instruments was established by conducting a pilot study within seven days in the main Campus Primary Health Care Centres of Nuhu Bamali Polytechnic Zaria.

Twenty five staff of the Primary Health Care Centre comprising of the doctors, nurses, Laboratory technologist and record staff were issued the questionnaires.

3.7 Procedure for Data Collections

The researcher, through the help of research assistants visited each of the Primary Health Care Centres selected for this research to administer the questionnaire. Solicitation letters for co-operation from the authorities and respondents of all the Primary Health Care Centres in Ahmadu Bello University, Zaria were sent to the University Health Services Directorate. This is to facilitate data collection in such centres. The researcher used the first day to distribute the questionnaire to Primary Health Care Centres of Main Campus, IAR, DAC and NAPRI respectively while the second day was used for Congo Campus. In the same way the researcher used the last two days (Day six and seven) to collect the questionnaires.

3.8 Procedure for Data Analysis

The data collected was presented and analyzed using descriptive statistical methods such as frequency distribution tables, percentages and histograms.

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CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 Introduction

This chapter presents the data collected for the study. Analysis, discussion of the data and the findings are also presented. The chapter is presented in the following sub-headings:

4.2 Response Rate of the Respondents

Out of the 100 copies of the questionnaire distributed to the respondents, a total of 81 (81.0%) copies were returned duly completed and found usable for this study. The high response rate was due to the fact that the respondents were not many and the researcher was able to visit virtually all of them and giving them up to three weeks within which to complete and return their copies of questionnaire. The response rate of the respondents according to their Primary Health Care Centres is presented in table 4.1:

Table 4.1: Response rate (of the respondents) according to Primary Health Care Centres in ABU Zaria

ABU Primary Health Care Centres	No. of Questionnaire Distributed	No. of Questionnaire Returned	% of Questionnaire Returned
Main Campus	60	51	51.0
Kongo Campus	25	16	16.0
IAR Clinic	6	5	5.0
NAPRI Clinic	5	5	5.0
DAC Clinic	4	4	4.0
Total	**100**	**81**	**81.0**

4.3 Data Analysis and Discussion

This section analyzes and discusses the data collected for the study through descriptive analysis as shown:

4.3.1 Types of Medical Records Generated in Primary Health Care Centres of Ahmadu Bello University, Zaria

The objective of this research question one (1) was to identify the types of medical records generated in Primary Health Care Centres (PHCCs) of Ahmadu Bello University Zaria. In order to achieve this, a list of medical records were given to the respondents to tick as many as are generated in their respective PHCCs. Table 4.2 and fig. 1 showing the responses on the types of medical records generated in the PHCCs of the University.

Table 4.2: Types of Medical Records generated in PHCCs of Ahmadu Bello University, Zaria

Types of Medical Records	ABU PHC Centres										Total	
	UHS, Samaru		UHS, Kongo		IAR Clinic		NAPRI Clinic		DAC Clinic			
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Patient folders	39	48.1	14	17.3	5	6.2	3	3.7	4	4.9	65	80.2
Test and test results slips	33	40.7	7	8.6	4	4.9	2	2.5	1	1.2	47	58.0
Diagnostic notes	41	50.6	7	8.6	2	2.5	1	1.2	0	0.0	51	63.0
Discharge notes/slip	19	23.5	2	2.5	1	1.2	2	2.5	4	4.9	28	34.6
Referral letters/Notes	38	46.9	12	14.8	2	2.5	2	2.5	2	2.5	56	69.1
Prescription slips	44	54.3	10	12.3	2	2.5	2	2.5	3	3.7	61	75.3
Admission notes/slip	21	25.9	3	3.7	1	1.2	4	4.9	0	0.0	29	35.8
Immunization records	30	37.0	10	12.3	3	3.7	3	3.7	2	2.5	48	59.3
Antenatal records	48	59.3	12	14.8	3	3.7	2	2.5	0	0.0	65	80.2
Death records	19	23.5	3	3.7	2	2.5	3	3.7	0	0.0	27	33.3
Eye records	43	53.1	3	3.7	1	1.2	3	3.7	0	0.0	50	61.7
Ear records	33	40.7	3	3.7	1	1.2	2	2.5	0	0.0	39	48.1
Family planning records	46	56.8	10	12.3	2	2.5	3	3.7	2	2.5	63	77.8
General Out Patient's records	34	42.0	9	11.1	1	1.2	4	4.9	4	4.9	52	64.2
Scanning/Ultrasound results	21	25.9	2	2.5	2	2.5	2	2.5	0	0.0	27	33.3
X-rays film records	10	12.3	2	2.5	1	1.2	2	2.5	2	2.5	17	21.0
Delivery records	18	22.2	0	0.0	0	0.0	0	0.0	0	0.0	18	22.2

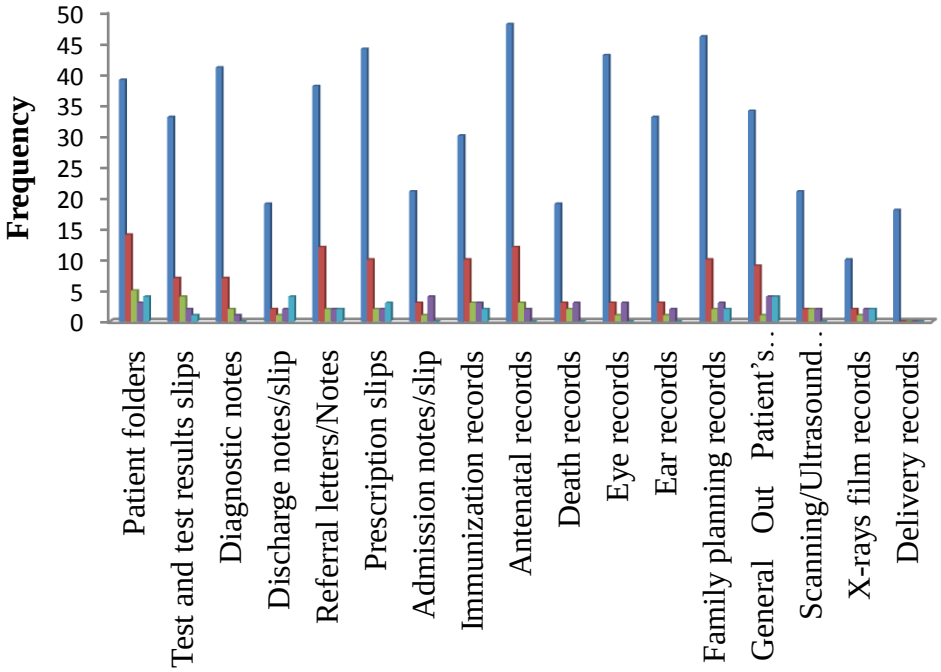


Fig. 1: Type of Medical Records generated in PHCCs of Ahmadu Bello University, Zaria

Table 4.2 and fig. 1 show the responses on the types of Medical Records generated in the Primary Health Care Centres (PHCCs) of Ahmadu Bello University, Zaria. It was revealed that among other medical records generated, patient folders with a frequency of 65(80.2%) form the highest score. This is so, because every patient that goes to the Primary Health Care Centre for medical services has a folder. Having the same score as patient folders is Antenatal records. The reason being that all expectant mothers both students and staff of the ABU community go for antenatal clinic in the Primary Health Care Centres and almost on a daily basis according to their appointment schedule. On the other hand, X-rays with a frequency of 17 (21.0%) has the least score. This is so because the five Primary Health Care Centres don't have X-ray machines; they only refer their patients elsewhere for this test. This is followed by Delivery records which have 18 (22.2%), this becomes

realistic because the Primary Health Care Centres do not handle delivery cases; they refer their expectant mothers to ABU Teaching Hospital, Shika for such services after their antenatal clinics at the Primary Health Care Centres. This is supported by Kukah (2005), who listed types of medical records to include identification records, clinical records, treatment notes, laboratory records, obstetrics records, new born records, radiology, physiotherapy records, doctor's orders, and family planning records. This also includes any other document (record) created for the patient in the process of any health service delivery. These records are either generated as the patient visits the Health Care Centre or received either by way of referral or transfer cases all for the purpose of rendering health care service delivery, and if this be the primary purpose, then all medical records must be well captured with content well and clearly stated.

As a follow-up to the question on types of medical records generated, a question was raised in order to identify the challenges faced when generating medical records in PHCCs of Ahmadu Bello University Zaria. Table 4.3 and fig. 2 showing the challenges faced when generating medical records in the university's PHCCs.

Table 4.3: The Challenges of generating medical records in PHCCs of Ahmadu Bello University, Zaria.

Challenges generating medical records	ABU PHC Centres										Total	
	UHS, Samaru		UHS, Kongo		IAR Clinic		NAPRI Clinic		DAC Clinic			
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Religious barrier	3	3.7	0	0.0	0	0	3	3.7	0	0.0	6	7.4
Writing materials	4	4.9	3	3.7	0	0	1	1.2	0	0.0	8	9.9
Communication barrier	15	18.5	0	0.0	2	2.5	4	4.9	3	3.7	24	29.6
Staff incompetency	18	22.2	9	11.1	3	3.7	0	0.0	2	2.5	32	39.5
Lack of space	2	2.5	0	0.0	0	0	0	0.0	0	0.0	2	2.5
Cultural issues	45	55.6	10	12.3	2	2.5	3	3.7	2	2.5	62	76.5
Ignorance	23	28.4	8	9.9	3	3.7	0	0.0	1	1.2	35	43.2
Illiteracy	15	18.5	7	8.6	1	1.2	0	0.0	0	0.0	23	28.4

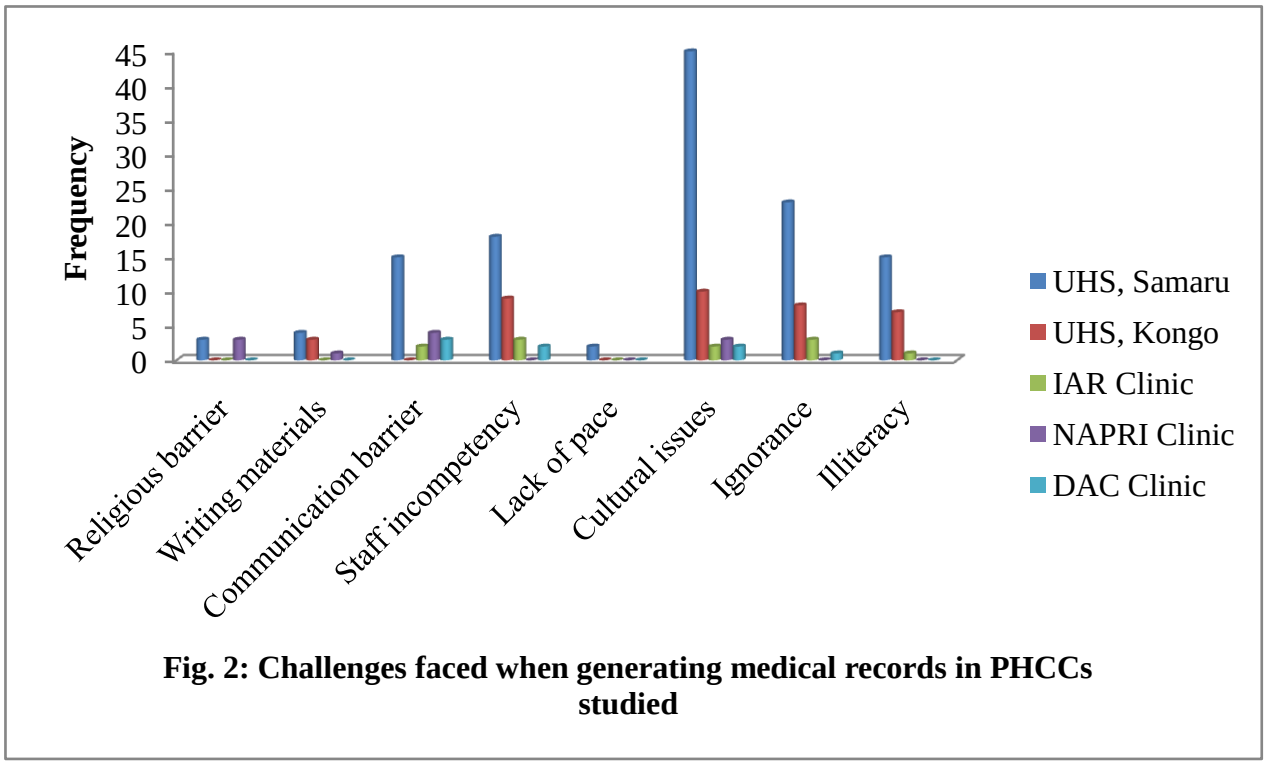


Fig. 2: Challenges faced when generating medical records in PHCCs studied

Table 4.3 and fig. 2 revealed that cultural issues with a frequency of 62(76.5%) were the major and commonest challenge faced by the PHCCs when generating medical records in Ahmadu Bello University, Zaria. This is so because the Hausa culture does not

permit individuals to give certain information about some people such as their first born and the Samaru community in which ABU is situated is predominantly Hausa. This is followed by patients' ignorance with a frequency of 35 (43.2%). Those who are illiterate may not be able to give any substantial information about them. However, it was discovered that religious barrier and writing materials were among the least challenges with frequencies of 6 (7.4%) and 8 (9.9%) response scores respectively. These findings fall in line with Sittigs' (2008) who proposes the implementation of human and computer interfaces to overcome the factors militating against effective generation of medical records. According to them, when this is addressed, it will ensure the best dissemination practices in the design, development and implementation of all prioritized patient-level information. While Beasley et al. (2011) posited that ethical and legal challenges militate against effective generation of medical records especially when it is presumed on the protection of patient privacy and confidentiality. Beredjiklian et al. (2011) on the other hand, argued that as long as communication between physician and patient lacks human touch and becomes legally ambiguous, it definitely can affect generation of medical records because it precludes sensory modalities such as smell and touch, which can be vital in the assessment of a patient.

4.3.2 Ways Medical Records are generated in Primary Health Care Centres of Ahmadu Bello University Zaria

Question Two, in order to identify the various ways medical records are generated in PHCCs of Ahmadu Bello University, Zaria, options were given for the respondents to tick as many as are applicable as shown in table 4.4 and fig.3:

Table 4.4: Ways medical records are generated in PHCCs of Ahmadu Bello University Zaria

Ways medical records are generated	ABU PHC Centres										Total	
	UHS, Samaru		UHS, Kongo		IAR Clinic		NAPRI Clinic		DAC Clinic			
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Whenever a patient has need for health care service delivery	43	53.1	11	13.6	4	4.9	1	1.2	2	2.5	61	75.3
By making reference to the patient's file	46	56.8	14	17.3	3	3.7	3	3.7	3	3.7	69	85.2
Whenever there is a diagnosis by medical personnel	36	44.4	12	14.8	3	3.7	5	6.2	2	2.5	58	71.6
Whenever the patient has drugs or injection to collect	12	14.8	5	6.2	2	2.5	3	3.7	4	4.9	26	32.1
Whenever there is a referral case	11	13.6	0	0.0	4	4.9	3	3.7	2	2.5	20	24.7
Whenever there is an ultra-sound or x-ray	45	55.6	15	18.5	5	6.2	3	3.7	1	1.2	69	85.2
Whenever there is a test or test result	47	58.0	12	14.8	3	3.7	4	4.9	2	2.5	68	84.0
Whenever there is appointment	8	9.9	6	7.4	3	3.7	4	4.9	0	0.0	21	25.9
Whenever there is death of a patient	7	8.6	3	3.7	2	2.5	2	2.5	0	0.0	14	17.3

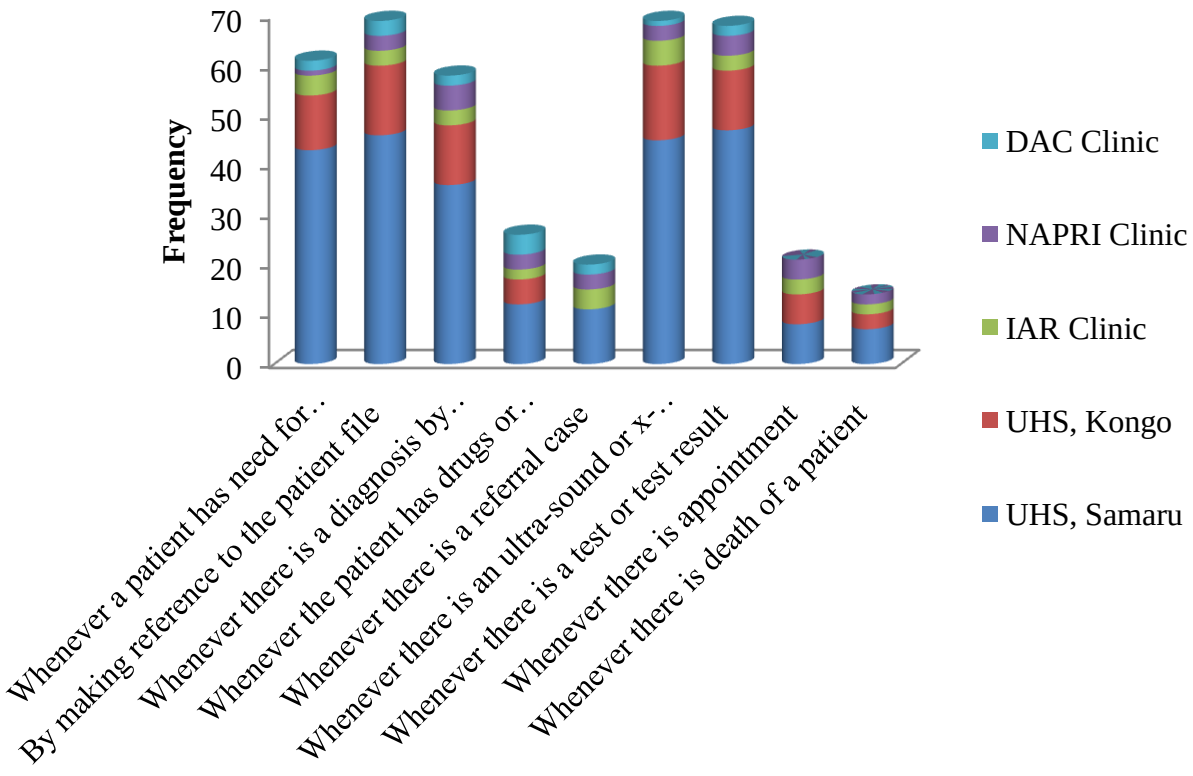


Fig. 3: Various ways medical records are generated in PHCCs of Ahmadu Bello University Zaria

Table 4.4 and fig. 3 show the responses of the respondents on when medical records are generated in Primary Health Care Centres of Ahmadu Bello University, Zaria. The finding shows that medical records in PHCCs of Ahmadu Bello University Zaria are generated at different times as the case may be. This includes *when making reference to the patient's file* which has the highest score of 69(85.2%); this is so because every patient has a file that carries all other medical records and for any medical service to be offered, the patient's file must be used. This is followed by *whenever there is a test or test result* with 68 (84.0%) score; this is because the validity of every diagnosis and treatment is backed up by a test result. On the other hand, the respondents indicated that medical records are also generated *whenever there is death*. This has the least score of 14 (17.3%) followed by

whenever there is a referral case with 20 (24.7%). The implication of this finding is that PHCCs by their nature and mandate are not reference centres neither are they meant to admit patients except on serious emergencies in order to stabilize them. This explains why only few cases of deaths are recorded at the PHCCs of Ahmadu Bello University, Zaria.

4.3.3 Methods adopted for organizing Medical Records in Primary Health Care Centres (PHCCs) of Ahmadu Bello University, Zaria

Research question three (3) tried to identify the methods adopted for organizing medical records in PHCCs of Ahmadu Bello University, Zaria. A list of various methods for medical records organization was provided for the respondents to tick as many methods as are employed in their PHCS or as the case may be. Table 4.5 & fig. 4 showing the distribution of their responses:-

Table 4.5 Methods adopted for organizing medical records in PHCCs of Ahmadu Bello University, Zaria.

Organisation of medical records	ABU PHC Centres										Total	
	UHS, Samaru		UHS, Kongo		IAR Clinic		NAPRI Clinic		DAC Clinic			
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Alphabetical	37	45.7	13	16.0	3	3.7	4	4.9	3	3.7	60	74.1
Chronological	7	8.6	0	0.0	0	0.0	0	0.0	1	1.2	8	9.9
Numerical	14	17.3	3	3.7	1	1.2	2	2.5	2	2.5	22	27.2
By departmentally	18	22.2	7	8.6	1	1.2	1	1.2	1	1.2	28	34.6
According to faculty	4	4.9	0	0.0	0	0.0	0	0.0	0	0.0	4	4.9
By personnel number or admission number	0	0.0	0	0.0	1	1.2	0	0.0	1	1.2	2	2.5

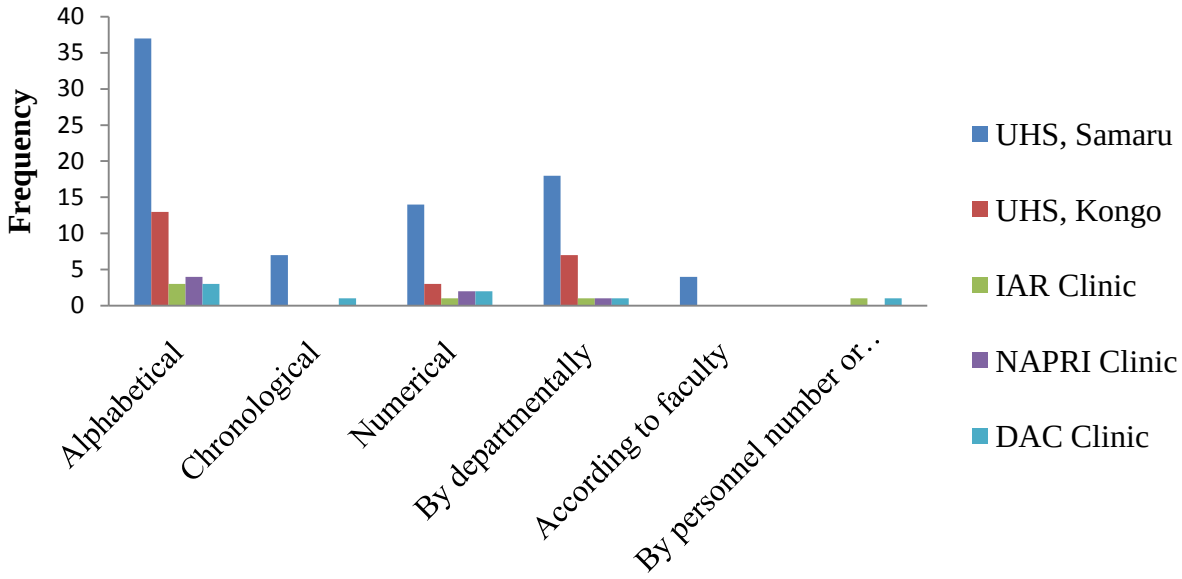


Fig.4: Methods adopted for organizing medical records in PHCCs studied

From table 4.5 and fig. 4, it can be clearly seen that alphabetical method of organizing records with the highest frequency of 60(74.1%) is the most adopted in the primary Health Care Centres of Ahmadu Bello University Zaria. This finding is obvious because alphabetical method has been the most popular method of arrangement and organizing information and records in organizations. This is supported by Lenexa (2005), who viewed that there are a number of different methods for organizing, storing or filing records, these include; alphabetic, subject, numeric and geographic, however, the most common method is the alphabetic filing system. Nevertheless, procedures for alphabetical records storing may vary from one organization to the other and even among departments within the organization. This may be based on the types of records they generate, business transactions, types of users and organizational goals and objectives. This is followed by departmental method with 28 (34.6%) response scores; this is used to enhance easy retrieval of particularly staff and students records. These findings are in line with those of Osundia (2005) and Sayudi (2013). They discovered that numerical, alphabetical and chronological methods of organizing medical records are the most prevalent in Primary Health Care Centres in Zamfara state. These also fall in line with what Franklin (1952

AD) found out through a hospital which he set up in Philadelphia (USA). He introduced medical records by preparing a file of special cases on which patient's name, admission date, discharge date, etc were written. In the same way another hospital was opened in Boston in 1921 AD, where a typical method of keeping relevant data for patients was initiated. Separate files for different patients were opened in order to keep their records. These processes proved to be more helpful in finding the necessary data regarding the patients and in acquiring important facts that could make it easier to take care of them. Abiola (2014), in the same vein, asserted that records are organized and arranged adopting a suitable classification system. The following are some of the common classification systems:

Alphabetic – records are arranged by the name of a person, place or institution. Arrangement can also be by topic

Chronological – arrangement by sequential date order. The disadvantage of the system is that retrieval can be slow and difficult due to memory failure as to the accurate dates.

Running number - each is assigned the next number in a running sequence irrespective of the subject of the file. The systems ensure efficient storage space utilization since gaps need not be left within a sequence to accommodate new file. The systems are most suitable for case files where the subject matters is essentially the same but where each file relates to an individual case.

Alpha-numeric – combines the alphabet and number. The primaries take the alphabet while the secondary and tertiary are assigned numbers.

Hierarchical - under this system, the business of an organisation is broken into a hierarchy of levels. The broad functions (series) are at the top of the hierarchy. This can be sub-divided into narrower functions and activities (sub-series) e.g.

Building (broad function/series)

Maintenance (narrower function/sub-series)

Painting (activity/sub-sub-sub-series). These also, has bearing with the findings that the use of personnel number in organizing medical records has the least score of 2 (2.5%); followed by faculty with 4 (4.9%) response score respectively. This is so because they are not a common methods of organizing records.

4.3.4 Types of Medical Records Used in Primary Health Care Centers (PHCCs) of Ahmadu Bello University, Zaria

In order to find out the types of medical records used in PHCCs of Ahmadu Bello University Zaria, research question four (4) was asked with respect to this and subsequently the respondents were asked to indicate as many types of medical records used in their respective PHCCs .Table 4.6 & fig. 5 show the types of medical records used in the PHCCs of Ahmadu Bello University, Zaria.

Table 4.6 Types of Medical Records Used in the PHCCs of Ahmadu Bello University, Zaria.

Types of medical records used	ABU PHC Centres										Total	
	UHS, Samaru		UHS, Kongo		IAR Clinic		NAPRI Clinic		DAC Clinic			
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Patient folders	48	59.3	13	16.0	4	4.9	3	3.7	2	2.5	70	86.4
Test and test results slips	36	44.4	11	13.6	3	3.7	4	4.9	2	2.5	56	69.1
Diagnostic notes	12	14.8	4	4.9	4	4.9	4	4.9	3	3.7	27	33.3
Discharge notes/slip	7	8.6	3	3.7	1	1.2	0	0.0	1	1.2	12	14.8
Referral letters/Notes	3	3.7	0	0.0	1	1.2	0	0.0	0	0.0	4	4.9
Prescription slips	32	39.5	5	6.2	1	1.2	3	3.7	3	3.7	44	54.3
Admission notes/slip	7	8.6	3	3.7	0	0.0	2	2.5	0	0.0	12	14.8
Immunization records	35	43.2	14	17.3	5	6.2	5	6.2	4	4.9	63	77.8
Antenatal records	37	45.7	13	16.0	4	4.9	4	4.9	4	4.9	62	76.5
Death records	3	3.7	2	2.5	0	0.0	0	0.0	0	0.0	5	6.2
Eye records	28	34.6	0	0.0	1	1.2	3	3.7	3	3.7	35	43.2
Ear records	32	39.5	1	1.2	1	1.2	3	3.7	2	2.5	39	48.1
Family planning records	49	60.5	9	11.1	3	3.7	4	4.9	4	4.9	69	85.2
General Out Patient's records	45	55.6	12	14.8	4	4.9	3	3.7	3	3.7	67	82.7
Scanning/Ultrasound results	23	28.4	11	13.6	3	3.7	3	3.7	3	3.7	43	53.1
X-rays film records	34	42.0	9	11.1	3	3.7	2	2.5	4	4.9	52	64.2
Delivery records	27	33.3	4	4.9	2	2.5	0	0.0	1	1.2	34	42.0

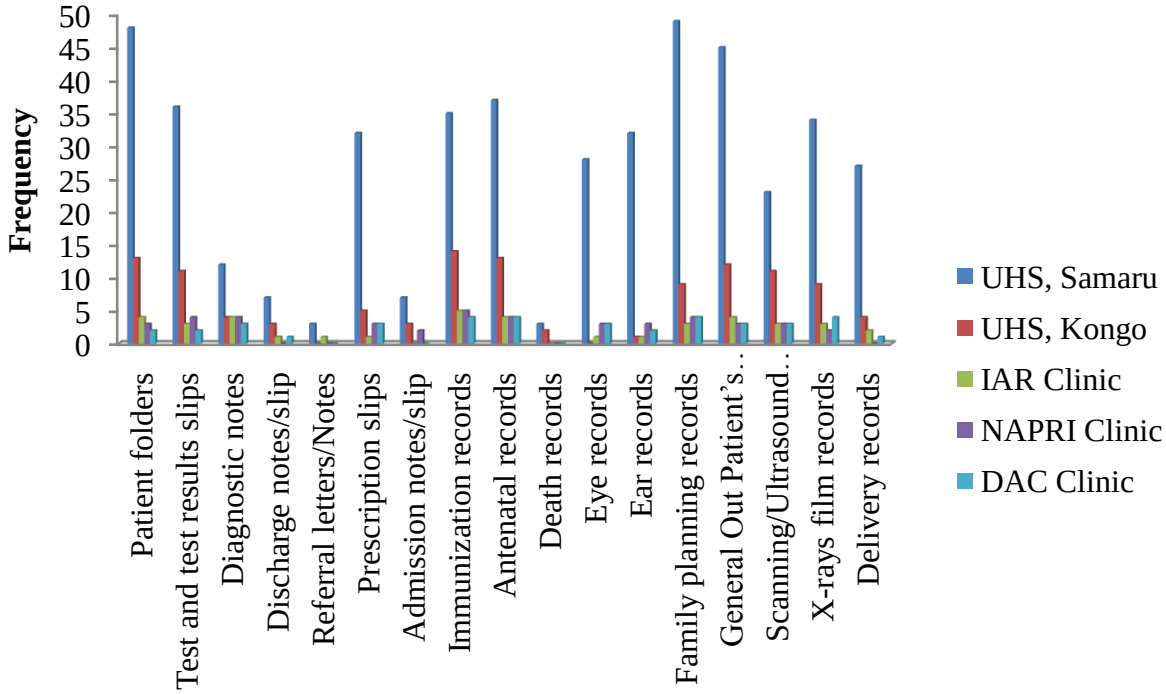


Fig. 5: Types of Medical Records Used in the PHCCs studied

Table 4.6 shows the responses of the respondents on the types of medical records used in Primary Health Care Centres (PHCCs) of Ahmadu Bello University, Zaria. The finding revealed that among other medical records used, patient folders has the highest frequency of 70 (86.4%) followed by family planning records with 69 (85.2%) response. This is obvious considering the fact that patient folder is owned by every patient and must be used whenever there is need for medical service of any kind while the family planning clinic is one of the most common clinics attended in the PHCCs of ABU Zaria. Accordingly, Adindu (1996) argued that mass immunization of children against major childhood diseases, family planning, and provision of portable water, environmental sanitation, proper waste disposal, nutrition education, prevention, and control of endemic diseases, provision of essential drugs and motivation of communities to participate in health programmes were the major activities of Primary Health Care Centres in Nigeria.

On the other hand, referral letters/notes with frequency score of 4(4.9%), followed by death records with 5(6.2%) are the types of medical records least used. This finding is not surprising because these types of medical records are not frequently generated as PHCCs generally neither admit patients in large number nor receive any case of referral as it is usually the primary level of Medicare.

Table 4.7 Extent of use of Medical Records in the PHCCs of Ahmadu Bello University, Zaria

	Level of medical record use						
	Not often		Rarely		Very often		
Type of medical records	Freq	%	Freq	%	Freq	%	Mean
Patient folders	4	4.9	24	29.6	53	65.4	1.7879
Test and test results slips	23	28.4	35	43.2	23	28.4	1.7717
Diagnostic notes	11	13.6	24	29.6	46	56.8	1.7858
Discharge notes/slip	43	53.1	17	20.9	21	25.9	1.7831
Referral letters/Notes	58	71.6	23	28.4	0	0.0	1.7729
Prescription slips	20	24.7	35	43.2	26	32.1	1.7726
Admission notes/slip	77	95.1	4	4.9	0	0.0	1.7854
Immunization records	65	80.2	10	12.3	6	7.4	1.7832
Antenatal records	12	14.8	23	28.4	46	56.8	1.7865
Death records	56	69.1	17	20.9	8	9.9	1.7792
Eye records	9	11.1	66	81.5	6	7.4	1.7462
Ear records	14	17.3	56	69.1	11	13.6	1.7543
Family planning records	0	0.0	3	3.7	78	96.3	1.8092
General Out Patient's records	6	7.4	6	7.4	69	85.2	1.8046
Scanning/Ultrasound results	3	3.7	57	70.4	21	25.9	1.7566
X-rays film records	3	3.7	45	55.6	23	28.4	1.5444
Delivery records	49	60.5	22	27.2	10	12.3	1.7765

Table 4.7 shows the extent of use of medical records in the Primary Health Care Centres of Ahmadu Bello University, Zaria. It is evident from the table that family planning records has the highest mean score of 1.8092 in terms of frequent usage by the medical

personnel in PHCCs of Ahmadu Bello University Zaria, followed by general out patient's records which has the mean score of (1.8046) response score respectively.

However, x-ray films records and eye records with mean scores of (1.5444) and (1.7462) respectively, are the medical records with the least frequencies among other medical records that are not often used. This finding is so because Primary Health Care Centres of ABU Zaria have NO ultra sound/ scanning and X-ray machines. Patients with need for such tests are usually referred to other medical centres where they offered such services.

4.3.5 Purpose of Use of Medical Records in Primary Health Care Centres (PHCCs) of Ahmadu Bello University, Zaria

This research question five (5) was raised to identify the various purposes of using medical records generated in Primary Health Care Centres of Ahmadu Bello University, Zaria. In order to do this, a list of possible purposes of use of medical records was drawn for the respondents to tick as many purposes as are applicable to them as shown in table 4.8 and fig.7.

Table 4.8 Purposes of using Medical Records in PHCCs of Ahmadu Bello University, Zaria.

Purpose of using medical records	ABU PHC Centres										Total	
	UHS, Samaru		UHS, Kongo		IAR Clinic		NAPRI Clinic		DAC Clinic			
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Planning	36	44.4	13	16.0	3	3.7	4	4.9	3	3.7	59	72.8
Statistical purposes	23	28.4	9	11.1	2	2.5	5	6.2	2	2.5	41	50.6
Proper diagnosis	37	45.7	11	13.6	4	4.9	2	2.5	4	4.9	58	71.6
Administration of drugs	29	35.8	10	12.3	2	2.5	4	4.9	4	4.9	49	60.5
General patients management	14	17.3	11	13.6	5	6.2	4	4.9	4	4.9	38	46.9
Budgeting purposes	9	11.1	1	1.2	2	2.5	0	0.0	2	2.5	14	17.3
Research purposes	20	24.7	12	14.8	3	3.7	1	1.2	2	2.5	38	46.9
Referral cases	34	42.0	14	17.3	3	3.7	2	2.5	4	4.9	57	70.4
Legal issues	18	22.2	0	0.0	2	2.5	0	0.0	1	1.2	21	25.9

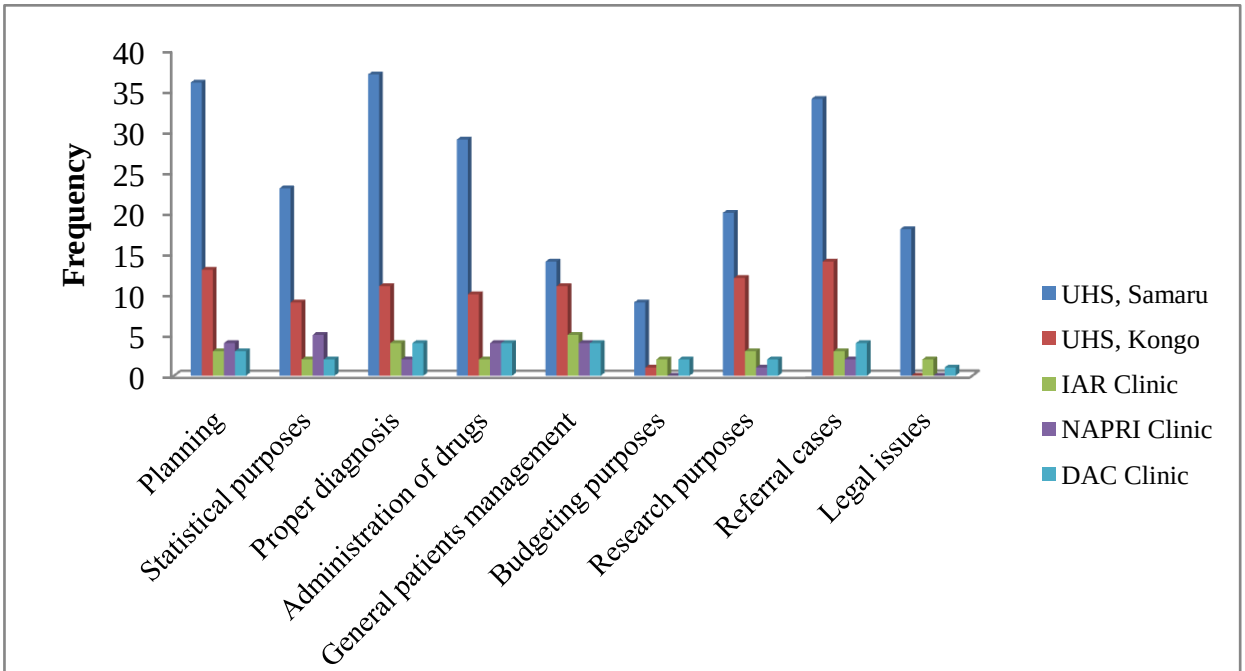


Fig. 7: purpose of using medical records in PHCCs of A.B.U. Zaria

Table 4.8 and fig. 7 reveal the purposes of using medical records in Primary Health Care Centres (PHCCs) of Ahmadu Bello University, Zaria. Among other purposes outlined, planning recorded the highest frequency score of 59(72.8%), followed by proper diagnosis with 58(71.6%). This implies that medical personnels in PHCCs of ABU, Zaria use medical records generated majorly for planning and conducting proper diagnosis of patients which in turns enhances good and quality health care service delivery which is the primary goal and objective of the Primary Health Care Centres. This finding is not unusual because the essence of records irrespective of types or form is to serve as instruments for planning and realization of the goals and objectives of its organization. This is supported by Carpenter etal. (2007), who said that in a medical records system, records document the history and progress of a patient's illness or injury. They preserve information of medical, clinical, scientific, legal, financial, and planning values. The medical record is a compilation of observations and findings recorded by the patient's physician and other clinical staff.

Entries and reports become part of the patient's medical record. Surgery, pathology, and nursing service reports, diagnostic test results, progress reports, and nutrition orders are examples of data included in the record.

It is clear and glaring from the table that medical personnel in PHCCs of Ahmadu Bello University, Zaria seldom use their medical records for budgeting and legal issues. This is seen in their least frequencies of 14 (17.3%) and 21(25.9%) respectively. Based on these findings, it can therefore be deduced that planning and proper diagnosis, are the major purposes of using medical records while budgeting and legal issues are the minor purposes of using medical records in Primary Health Care Centres of Ahmadu Bello University, Zaria. A follow-up question was also asked to identify the challenges faced by the respondents when using the medical records generated in Primary Health Care Centres of Ahmadu Bello University, Zaria. To do this, the researcher outlined a list of possible challenges for the respondents to tick as many challenges faced as shown in table 4.9 and fig. 8:-

Table 4.9: Challenges faced when using medical records in PHCCs of Ahmadu Bello University, Zaria.

Challenges in using medical records	ABU PHC Centres										Total	
	UHS, Samaru		UHS, Kongo		IAR Clinic		NAPRI Clinic		DAC Clinic			
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Lack of qualified record staff	16	19.8	4	4.9	3	3.7	0	0.0	1	1.2	24	29.6
Lack of good file arrangement policy	7	8.6	0	0.0	1	1.2	3	3.7	1	1.2	12	14.8
Lack of good storage and retrieval policy	13	16.0	3	3.7	1	1.2	2	2.5	4	4.9	23	28.4
Lack of good storage facility	29	35.8	10	12.3	3	3.7	5	6.2	2	2.5	49	60.5
Absence of a hospital library	28	34.6	12	14.8	3	3.7	2	2.5	1	1.2	46	56.8
Lack of automation	33	40.7	9	11.1	4	4.9	4	4.9	3	3.7	53	65.4
Loss of patients records	36	44.4	10	12.3	1	1.2	3	3.7	3	3.7	53	65.4
Poor ventilation	44	54.3	12	14.8	2	2.5	4	4.9	4	4.9	66	81.5

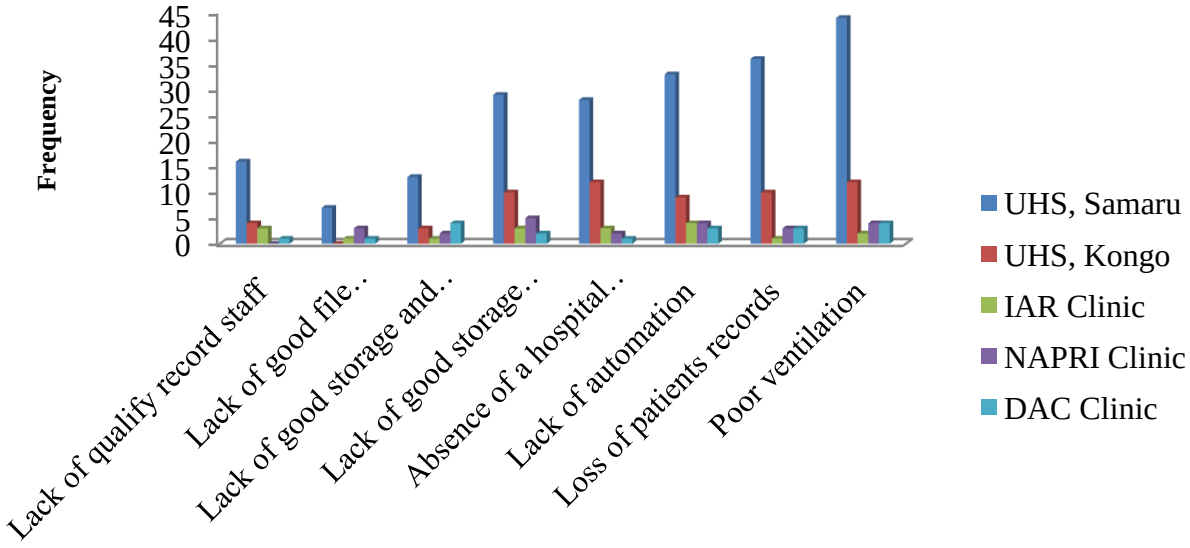


Fig. 8: Challenges faced when using medical records in PHCCs Studied

Table 4.9 and fig. 8 portrayed the challenges faced by respondents when using medical records in Primary Health Care Centres of Ahmadu Bello University, Zaria. It can be seen from the table that poor ventilation has 66(81.5%) response, followed by lack of

automation and loss of patient's file/records with 53 (65.4%) being the commonest challenges with the highest frequencies faced by the medical personnel's in the PHCCs of Ahmadu Bello University Zaria. Lack of good files arrangement policy with 12(14.8%) and lack of good storage and retrieval policy 23 (28.4%) are the least challenges faced by the respondents in the PHCCs of ABU Zaria. The implication of these findings is that record management staff in the PHCCs of Ahmadu Bello University, Zaria are not considered as a major problem when using medical records. This is expected because record managers are saddled with the responsibility of facilitating access and use of records in their custody. As admitted by W.H.O, (2011), management of medical records requires knowledge of medical record administration as well as management skills and abilities by trained personnels. Records Management is the practice of maintaining the records of an organization while a record manager is one who is responsible for the effective and appropriate management of an organization's records.

On the contrary, at the IAR clinic respondents indicated lack of automation (with frequency scores of 4.9%) as a major challenge toward the use of medical records in the record office. This finding agrees with that of Adeyomo (2005) and Adindu & Babatunde (2006). They found out that a majority of information systems managers in Bama PHCs do not have adequate training specific to information and records management systems. Similarly, lack of a good storage and retrieval policy constituted a major challenge to medical records used at the DAC clinic. This finding revealed that PHCCs studied though under the same supervisory body do not receive uniformed treatment in terms of resources allocation and facilities and equipment procurement and deployment.

To this end, it can be deduced that lack of automation, loss of patients' records and poor ventilation are the commonest challenges with the highest frequency scores while lack

of good file arrangement policy, good storage and retrieval policy and qualified record staff are the least challenges faced by the medical personnels when using medical records in the PHCCs of ABU, Zaria.

4.3.6 Types of ICTs used for medical Records Generation and Use in Primary Health Care Centres of Ahmadu Bello University, Zaria

Question six (6) identifies the ICTs used for medical records generation and use in Primary Health Care Centers (PHCCs) of Ahmadu Bello University, Zaria. A list of ICTs was provided by the researcher for the respondents to tick as many ICTs as are applicable. Table 4.10 & fig. 9 show the responses of the respondents:-

Table 4.10 ICTs used for medical records generation and use in PHCCs of Ahmadu Bello University, Zaria.

ICTs used	ABU PHC Centres										Total	
	UHS, Samaru		UHS, Kongo		IAR Clinic		NAPRI Clinic		DAC Clinic			
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Computers	35	43.2	14	17.3	1	1.2	3	3.7	4	4.9	57	70.4
Mobile phones	20	24.7	0	0.0	0	0.0	1	1.2	4	4.9	25	30.9
Intranet	6	7.4	0	0.0	0	0.0	0	0.0	0	0.0	6	7.4
X-ray machines	19	23.5	2	2.5	0	0.0	0	0.0	0	0.0	21	25.9
Ultrasound machine	7	8.6	3	3.7	0	0.0	0	0.0	0	0.0	10	12.3
Scanners	17	21.0	0	0.0	0	0.0	0	0.0	0	0.0	17	21.0
Printers	10	12.3	2	2.5	2	2.5	2	2.5	2	2.5	18	22.2
Internet	8	9.9	5	6.2	0	0.0	0	0.0	2	2.5	15	18.5
CD-ROMs	2	2.5	0	0.0	0	0.0	2	2.5	3	3.7	7	8.6
Television	27	33.3	4	4.9	2	2.5	3	3.7	2	2.5	38	46.9
Photocopiers	28	34.6	10	12.3	1	1.2	2	2.5	2	2.5	43	53.1
e-mail	31	38.3	12	14.8	2	2.5	3	3.7	3	3.7	51	63.0

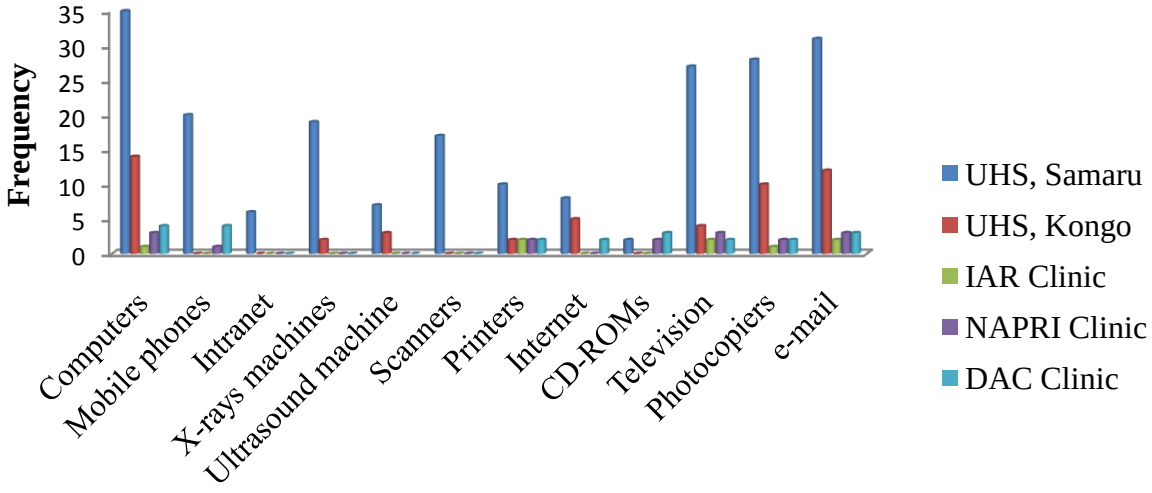


Fig. 9: ICTs used for medical records generation and use in PHCCs studied

Table 4.10 and fig. 9 show the types of ICTs used for medical records generation and use in the Primary Health Care Centres of Ahmadu Bello University, Zaria. It is shown that computers, 57 (70.4%) and photocopiers, 43 (53.1%) are the commonly used ICTs for medical records generation.

On the other hand, it was discovered that the least of the ICTs used are Intranet, which has a frequency of 6(7.4%), followed by CD-ROMs with a frequency of 7(8.6%). These services are only limited to very few offices thereby limiting their services to only few people in PHCCs of Ahmadu Bello University, Zaria. This, perhaps, might be attributed to either complete or non availability of ICTs facilities, incessant breakdown of the facilities and power failure. It is therefore suggested that the Directorate of University Health Services should as a matter of urgency equip the PHCCs with relevant ICT gadgets and facilities to enhance modern health care service delivery in the University.

Chan (2010), supported this view by saying that the Nigerian industry, professionals use ICT tools / gadgets at different levels of services. For instance, Architects

and Engineers replaced the use of traditional drawing boards with computer – aided design (CAD) software to strengthen the effect and efficiency of their designs. Computer – aided cost estimating software is another category of computer programme used by Quantity Surveyors or project estimators set to replace the conventional method of measurement and estimation. As for project planning, scheduling and site management, the use of MS project software has brought about a higher level of accuracy, speed programming and the operation of project managers on site to mention but a few. So also, in the management of medical records, we have employed the use of ICT gadgets and moved gradually from the conventional method of managing records to the world of ICT which will make us move with the changing world.

From the foregoing, it can be concluded that only computers and photocopiers are the commonest ICTs used while intranet and CD-ROM are the least ICTs used for medical records generation and use in Primary Health Care Centres of Ahmadu Bello University, Zaria.

However, in order to determine the extent of use of the ICTs used for medical records generation and use in Primary Health Care Centres of Ahmadu Bello University Zaria, a question was raised for the respondents to indicate their frequency of use of the medical records in the PHCCs of Ahmadu Bello University Zaria. Liker scales of measurement were used. These are Very Often (VO), Rarely ® and Not Often (NO) as depicted in table 4.11 & fig. 10:-

Table 4.11 Extent of Use of ICTs for Medical Records generation and use in PHCCs of Ahmadu Bello University Zaria

ICT devices/facilities	Extent of ICT use for Medical Records						
	Not often		Rarely		Very often		
	Freq	%	Freq	%	Freq	%	Mean
Computers	4	4.9	23	28.4	54	66.7	2.5257
Mobile phones	73	90.1	5	6.2	3	3.7	3.0132
Intranet	77	95.1	4	4.9	0	0.0	3.0418
X-rays machines	0	0.0	25	30.9	56	69.1	2.5055
Ultrasound machine	12	14.8	44	54.3	25	30.9	2.7770
Scanners	11	13.6	57	70.4	13	16.0	2.8774
Printers	6	7.4	12	14.8	63	77.8	2.4514
Internet	69	85.2	10	12.3	2	2.5	3.0183
CD-ROMs	0	0.0	0	0.0	0	0.0	0.000
Television	10	12.3	26	32.1	45	55.6	2.6066
Photocopiers	0	0.0	7	8.6	74	91.4	2.3537
e-mail	4	4.9	59	72.8	18	22.2	2.8294

Table 4.11 reveals that mobile phones with the mean scores of 3.0418 and internet with 3.0183 are the type of ICTs very often used in the Primary Health Care Centres of Ahmadu Bello University, Zaria. This is obvious because the normal operations and functions of the PHCCs of Ahmadu Bello University Zaria largely depend on these mentioned ICTs. On the other hand, photocopiers with the mean score of 2.3537 (0.0%) and X-ray machine with 2.5055 (0.0%) mean score are indicated by the respondents to be among other ICTs facilities that are rarely used for medical records generation and have the highest frequencies in the PHCCs of Ahmadu Bello University, Zaria. This finding may be due to the fact that computers and scanners are either not available, ineffective, lack competent hands to operate them or are either broken down or are malfunctioning.

Furthermore, it was discovered that mobile phones, 73(90.1%) and intranet77(95.1%) respectively are among the ICTs not often used, having the highest

response scores by the respondents in the Primary Health Care Centres of Ahmadu Bello University, Zaria. This is clear because Internet and intranet services are not provided to all staff responsible for medical records generation and use but only to a selected few in PHCCs of Ahmadu Bello University, Zaria

A follow-up question was also asked to find out the problems encountered by the respondents when using the ICTs for medical records generation and use in Primary Health Care Centres of Ahmadu Bello University, Zaria. To do this, the researcher outlined a list of possible problems for the respondents to tick as many as are encountered as shown in table 4.12 and figure 11:-

Table 4.12 Problems encountered in the use of ICTs in PHCCs of Ahmadu Bello University, Zaria.

Problems encountered in the use of ICTs	ABU PHC Centres										Total	
	UHS, Samaru		UHS, Kongo		IAR Clinic		NAPRI Clinic		DAC Clinic			
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Non-availability of ICT tools	17	21.0	2	2.5	0	0.0	3	3.7	0	0.0	22	27.2
Epileptic power supply	12	14.8	12	14.8	4	4.9	3	3.7	4	4.9	35	43.2
High cost of ICT related tools	13	16.0	0	0.0	0	0.0	2	2.5	4	4.9	19	23.5
Lack of technical know how	20	24.7	0	0.0	2	2.5	2	2.5	0	0.0	24	29.6
Inadequacy of ICT facilities	46	56.8	9	11.1	4	4.9	5	6.2	2	2.5	66	81.5
Poor ventilation	47	58.0	8	9.9	4	4.9	4	4.9	3	3.7	66	81.5

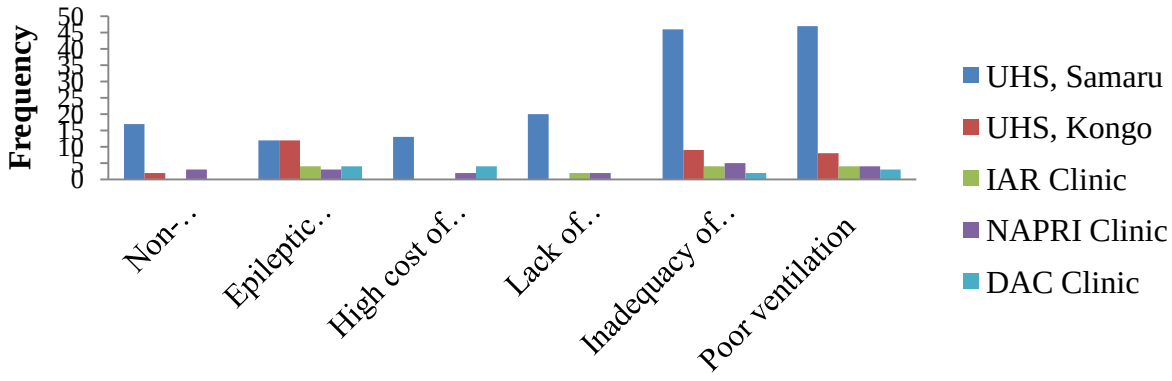


Fig. 11: Problems encountered in the use of ICTs in PHCCs studied

Table 4.12 and fig 11 identified the problems encountered by the respondents in the use of ICTs for medical records generation and use in Primary Health Care Centres (PHCCs) of Ahmadu Bello University Zaria. A cursory look at the table reveals that inadequacies of ICT facilities and poor ventilation, both having the same average scores of 66 (81.5%) are the major problems encountered when using ICTs in the respective PHCCs. Whereas, high cost of ICT tools with 19 (23.5%) and non availability of ICT tools with 22 (27.2) are among the least problems encountered in their respective PHCCs.

It can therefore be concluded that inadequacy of ICTs and poor ventilation are the commonest problems associated with the use of ICTs for medical records' generation and use encountered by the respondents in the Primary Health Care Centres of Ahmadu Bello University, Zaria. However, Amatayakul, (2008) viewed I.C.T as a starting point in which our health care programmes can be improved to give patients good and quality health care delivery/services. He added that it will enhance information flow in rural communities' health care services. This idea was backed up by Smaltz (2009), who said that the application of computer services in our society has made people and health organizations to face and rise to the challenges of using I.C.T tools in managing medical records in Primary Health Care Centres. These are fundamental in managing patient's medical records; it

makes it easier to access, store, carry, deliver and to be consistent in managing patients' data electronically. The campaign on I.C.T by the federal, state, local governments and other private organizations on the use of ICT are ever on the increase. This will enhance national development in a country like ours. In the campaign on fostering Entrepreneurial Development through ICT Training, Olorode (2012), viewed that ICT is a strategic pre-requisite in the new globalization that could enhance sustainable growth and socio-economic development of any nation.

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CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary of the Study

This study was carried out to investigate generation, organisation and use of medical records in Primary Health Care Centres (PHCCs) of Ahmadu Bello University, Zaria. In order to achieve this objective, six research questions were formulated thus: What types of medical records are generated in Primary Health Care Centres of ABU Zaria?; How are medical records generated in Primary Health Care Centres of ABU Zaria?; How are medical records Organized in Primary Health Care Centres of ABU Zaria; What types of medical records are used in Primary Health Care Centres of ABU Zaria?; For what purpose (s) are medical records used in Primary Health Care Centres of ABU Zaria?; and what type of ICTs facilities are used for medical records generation, Organization and Use in Primary Health Care Centres of ABU Zaria? Review of relevant literatures was also carried out on the types of medical records generated, various ways they are generated, and use of medical records in Primary Health Care Centres respectively.

Survey research method was adopted for this study. The population of this study consists of the records staff, nurses, laboratory technicians and doctors of the Primary Health Care Centres (PHCCs) of Ahmadu Bello University, Zaria, Also, a total of 100 respondents which comprised of records staff, nurses, laboratory technicians and doctors made up the sample size for this study. The five PHCCs selected are; University Health Services Sick-Bay, Samaru Main Campus, University Health Services, Kongo Campus, National Animal Production and Research Institute (NAPRI) Clinic Shika-Zaria, Institute for Agricultural Research (IAR) Clinic Samaru-Zaria and Divisional of Agricultural Colleges

(DAC) Clinic, Samaru-Zaria. The instrument used for data collection was the questionnaire.

The data collected for the study were presented and analyzed using frequency distribution tables, percentages and histograms.

5.3 Summary of Findings

Based on the data collected and analyses made in this study, the following are the major findings:

1. It was revealed that a majority of the respondents indicated that patient's folders, Test and test results slips, diagnostic notes, referral letters/notes, prescription slips, immunization, antenatal, eye, family planning and General Out Patient's records are the types of medical records generated in Primary Health Care Centres of Ahmadu Bello University, Zaria. A majority of the respondents also indicated that medical records are commonly generated whenever the patient has need for health care, making reference to the patient file, during diagnosis, through ultra sound and x-rays and from the test results respectively. This is done by the patient demanding his file from the record room; the record staff will now register the patient through the small card and using the patient number on the card to retrieve the file. This file is now taken to the doctor/consultant who will generate any medical record based on diagnosis reached or for further investigations.
2. Alphabetical, numerical and departmental methods are the methods adopted for organizing medical records in PHCCs of Ahmadu Bello University, Zaria.
3. Also it was revealed that patients folders, test results slips, prescription slips, immunization, antenatal, family planning, general out-patient, scanning results and x-ray films records respectively are the commonest medical records used in Primary Health Care Centres of Ahmadu Bello University, Zaria.

4. Patient folders, diagnostic notes, antenatal records, general out patient and family planning records are the medical records often used by the medical personnel in PHCCs of Ahmadu Bello University, Zaria.
5. Planning, statistical purposes, proper diagnosis, administration of drugs, and referral cases are the major purposes of using medical records in Primary Health Care Centres of Ahmadu Bello University, Zaria
6. Computers, photocopiers and e-mail are the commonest ICT facilities used for medical records' generation and use in Primary Health Care Centres of Ahmadu Bello University, Zaria.

5.4 Conclusion

Based on the findings of this study, it can be concluded that University Health Services of Ahmadu Bello University Zaria have to some extent, realized the relevance of records management in their Primary Health Care Centres but have to facilitate staff competency through compliance with the parent organization for qualified staff who can manage medical records effectively for better results. For effective use of medical records, there should be good storing facilities in terms of accommodation, airy and well ventilated room with functional air conditions, fans and good lightening systems. Furthermore opportunities for training and retraining of staff can produce the best of staff needed with current skills to face the current challenges of generation, organisation and use of medical records. It is expected that the management would fully adopt the use of ICT facilities with full automation system in ABU Primary Health Care system and centres. The use of other ICT services like intranet, CD-Rom search, Internet services among others, can help upgrade the quality of health care service delivery. The level at which organizations whether profit or non-profit making, develop and grow is dependent on their capabilities and abilities to

properly manage and utilize their information and records. In this regard, information and records management have now become the harbinger for any meaningful development in all spheres of human endeavour. The need for professional information and records managers to manage the bulk of medical records generated in Primary Health Care Centres of Ahmadu Bello University, Zaria is highly advocated vis-à-vis the establishment of libraries in all the PHCCs studied.

5.5 Recommendations:

Arising from the findings of this study, the following recommendations are made:

1. University Health Services through the management of the University should employ qualified and competent record managers/staff and medical personnel who can use their acquired skills and knowledge to generate and receive records that will be of use to both the patients and the health care sector at large.
2. Other sources can be implored as additional ways of generating medical records. This can be by telephone calls in case of emergencies or for easy access for any health care service. External sources such as CD-Rom search, X-rays and Ultra-sound and Scanning can also be used.
3. It is recommended that all the Primary Health Care Centres of ABU adopt a uniform method of organizing their medical records. Good.
4. Some of the records that are generated but with minimal usage, like eye records, delivery records, admission records to mention but a few, personnel, facilities and structures can be provided to take off full operation.
5. The use of medical records for research purposes is highly recommended by the researcher; since ABU is an academic institution.

6. The University Health Services should intensify efforts towards full automation system of the medical records generated in Primary Health Care Centres of Ahmadu Bello University, Zaria.

5.6 Suggestions for Further Research

This research was centred on Generation, Organization and Use of medical records in Primary Health Care Centres of Ahmadu Bello University; to widen the scope of this research work there is need for further research on this subject area. The researcher will like to suggest the following research titles:

1. Application of Information and Communication Technologies in Medical Records Generation and Use in Ahmadu Bello UniversityTeaching Hospital Shika- Zaria.
2. Retrieval and Storage of Medical Records by Medical Personnel in Government Hospitals of Zaria Metropolis.
3. Generation, Organization and Use of medical records in private hospitals in Zaria metropolis.

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A QUESTIONNAIRE ON GENERATION, ORGANISATION AND USE OF MEDICAL RECORDS IN PRIMARY HEALTH CARE CENTRES OF AHMADU BELLO UNIVERSITY.

Department of Library and Information Scince,
Faculty of education,
Ahmadu Bello University Zaria,
March 7th, 2014

Dear Sir/Ma,

I am a Postgraduate student of the above named department in Ahamdu Bello University Zaria, presently conducting a research. This is in partial fulfillment of the requirements 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 purpose other than that of this research.

Yours faithfully,

Akuso, Afiniki (Mrs.)
(08036521508)

UNIVERSITY HEALTH SERVICES

MAIN CAMPUS CLINIC

AHMADU BELLO UNIVERSITY, ZARIA, NIGERIA.

Vice-Chancellor: Professor Abdullahi Mustapha; B.Sc (Hons) Pharm, A.B.U. Ph.D, (London FPSN)
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Our Ref

Your Ref

1st August, 2011.

Head,
Department of Library and Information Science,
Ahmadu Bello University,
Zaria.

Dear Sir,

RE: LETTER OF INTRODUCTION

We refer to your letter dated 27th July, 2011.

This is to convey the Director's approval for Akuso Afiniki to collect data for her research project titled "Management of Medical Records in Ahmadu Bello University Primary Healthcare Centres" in the University Health Services.

Thank you.

Yours faithfully,

Alhaji L. Gbadamosi
For Director

CC: Head, Medical Records Unit.
CC: Akuso Afiniki Reg. No. MARM/EDUC/5883/2009-2010

APPENDIX iii

QUESTIONAIRE ON GENERATION, ORGANIZATION AND USE OF MEDICAL RECORDS IN PRIMARY HEALTH CARE CENTRES IN AHMADU BELLO UNIVERSITY, ZARIA

SECTION A: BACKGROUND INFORMATION. (Bio Data)

Tick the most appropriate answer (s).

1. Name of Primary Health Care Centre ----------
2. Gender (a) Male ☐ (b) Female ☐
3. Which category of respondents do you belong to (tick as appropriate)

a) Medical Doctor ☐
b) Staff Nurse ☐
c) Laboratory Technician ☐
d) Medical Record Staff ☐
e) Others (Specify) ----------

SECTION B: Generating Medical Records (Tick as many as applicable).

4) What types of medical record (s) do you generate in your primary health care centre?

a) Patient Folders ☐
b) Test and test results slips ☐
c) Diagnosis notes ☐
d) Discharge notes/slip ☐
e) Referral letters/Notes ☐
f) Prescription slips ☐
g) Admission notes/slip ☐
h) Immunization records ☐
i) Antenatal records ☐
j) Deliveries records ☐
k) Deaths records ☐
l) Eye records ☐
m) Ear records ☐
n) Family planning records ☐
o) General Out Patient's records ☐
p) Scanning/Ultrasound results ☐
q) X-rays films records ☐
r) Others (Specify)……

5) What challenges do you faced when generating medical records in your Primary health Care Centre?

a) Religious barrier
b) Lack of Writing materials
c) Communication barrier
d) Staff incompetence
e) Lack of space
f) Cultural issues
g) Ignorance
h) Illiteracy

e) Others specify.

SECTION C: How Medical Records are Generated (Tick as many as applicable)

6) How are medical record(s) generated in your primary health care centre? (Tick as many as applicable)

a) Whenever a patient has need for health care service delivery. ☐
b) By making reference to the patient file. ☐
c) Whenever there is a diagnosis by medical personnel. ☐
d) Whenever the patient has drugs or injection to collect. ☐
e) Whenever there is a referral case. ☐
f) Whenever there is an ultra-sound or x-ray.
g. Whenever there is a test or test result.
h. Whenever there is appointment.
i) Whenever there is death of a patient.
j) At the first visit to the Health Care Centre.

Others specify……

SECTION D: Organization of Medical Records

7) What system of file arrangement are you practicing in your primary health care centre?

a) Alphabetical ☐
b) Indexes ☐
c) Chronological ☐
d) Numerical
e) By department ☐
f) According to faculty ☐
g) By employment/admission number

Others (Specify) …….

SECTION E : Use of Medical Records

8) Indicate the type of medical records do you use in your Primary Health Care Center?

e) Patient Folders
f) Test and test results slips
g) Diagnosis notes ☐
h) Discharge notes/slip ☐
e) Referral letters/Notes ☐
f) Prescription slips ☐
g) Admission notes/slip ☐
h) Immunization records ☐
i) Antenatal records
j) Deliveries records ☐
k) Deaths records ☐
l) Eye records ☐
m) Ear records ☐
n) Family planning records ☐
o) General Out Patient's records ☐

p) Scanning/Ultrasound results ☐
q) X-rays films records ☐
s) Others (Specify)……

(9) How often are these medical records used in your Primary health care?

Types of medical records	**Not often**	**Rarely**	**Very often**	**Often**	**Not at all**
Patient folders					
Test and test result slips					
Diagnostic notes					
Discharge notes/slips					
Referral letters/notes					
Prescription slips/notes					
Admission notes/slip					
Immunization records					
Antenatal records					
Death records					
Eye records					
Ear records					
Family planning records					
General out patient records					
Scanning/ultrasound results					
x-ray films records					
Delivery records					

10) What are the challenges of using medical records in your Primary Health Care Centre?
a) Lack of qualify record staff
b) Lack of good file arrangement policy.
c) Lack of good storage and retrieval policy.
d) Lack of good storage facility.
e) Lack of Hospital Library
f) Lack of automation

g) Loss of patients records
h) Poor ventilation
i) Others specify……

SECTION F: Purpose of Medical records

11) For what purpose are medical records created in your primary health care centre?
   a) For planning
   b) For statistical purposes
   c) For proper diagnosis
   d) Administration and supply of drugs
   e) For general patients management
   f) For budgeting purposes
   g) For research purposes
   h) For referral cases
   i) For legal issues
   j) Others Specify…….

SECTION G: The use of ICT facility

12) Is your Primary Health Care Centre using any ICT facility in the management of patients' medical records?

a) Yes ☐
b) No ☐

13) What type of ICT facilities do you use in the management of patients medical records in your Primary Health Care Centre? (Tick as many as applicable)

a) Computer
b) Lap-top
c) Palm-top ☐
d) Telephone Hand-Set ☐
e) Electronic type writer. ☐
f) X-rays/ Ultrasound machine ☐
g) Scanners ☐
h) Printers ☐
i) Others specify…….

14) To what extent do you used ICT facilities in your Primary Health Care Centres?

Types of medical records	**Not often**	**Rarely**	**Very often**	**Often**	**Not at all**
Computers					
Mobile phones					
Intranet					
X-rays machines					
Ultrasound machines					
Scanners					
Printers					
Internet					
CD-ROMs					
Television					
Photocopiers					
e-mail					

15) What problems do you encounter in applying ICT gadgets as you managed patients' medical records?

a) Non – availability of ICT tools
b) Epileptic power supply
c) High cost of ICT related tools
d) Lack of technical know-how
e) Inadequacy of ICT facilities
f) Poor ventilation
g) All of the above