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11-12-2019

Health Information Management- A Tool for Effective Health Care Delivery in Nigeria; Mother and Child Hospital, Akure, Ondo State Experience

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Adebayo, Tajudeen Temitayo Dr. and Orimoloye, Ebenezer Seun Mr, "Health Information Management- A Tool for Effective Health Care Delivery in Nigeria; Mother and Child Hospital, Akure, Ondo State Experience" (2019). *Library Philosophy and Practice (e-journal)*. 3639.

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Chapter one

1.0

INTRODUCTION

1.1. Background of the study

Information is the life blood of the health care delivery system. The health records in manual or automated form, houses the medical information that describes all aspects of patient care. It is an essential tool in running the day today activities of the organization. It is needed in carrying out business operations in offices, hospitals of private and public sector organizations. (Huffman 1994). The introduction of information technologies into business, health institutions and government has resulted in an information explosion, and caused an increase in records volume of incredible proportions. Hospitals and offices are most affected by this growth since much of the information is channeled into business, health care and government offices in the form of records for administrative and legal use.

Health information is the clear, concise and accurate history of patient life and illness written from the medical point of view. It is the primary source of medical statistics and clinic materials, for the present and future researchers. It is as well a device used for recording the significant characteristics of a patient and his illness and the events occurring in the course of professional care for the purpose of providing the best medical care to the patient, it undertakes teaching, research and study, appraisal of medical practice and legal requirements. Before a health records can be used for teaching, research, study, evaluation and treatment, it has to be complete, accurate and adequate, therefore the health information must contain sufficient information written in sequence of events to justify the diagnosis, warrant treatments and end result the quality of patient health care depends on proper managements of patients health records, efficient health care delivery system rest solemnly on a good system of health records storage and preservation.

Health information management practice is imperative in any health service providing institution in ensuring quality service delivery. Health information among the vital tools that hospitals require in order to attain the missions and visions of the respective hospitals. The purpose of health information management is to ensure quality, accuracy, accessibility, authenticity and security of information in both paper and electronic systems (The United States Department of Labour, 2013). Medical service delivery does not only depend on the

knowledge of doctors and nurses but also records-keeping processes in the hospital. Health information is of different types depending on the size and activities of the given hospital. Records managed in hospitals include patient case notes, x-rays, pathological specimens and preparations, patient indexes and registers, pharmacy and drug records, nursing and ward records. (International Records Management Trust, 2010). The health information management program is run in diverse ways in different parts of the world, although differences depend on the needs and scope of service of the specific hospital or health institution. Iron Mountain (2014), notes that health care provider ensures competent service provision and proper health information management to keep costs down, secure patient data, and maintain compliance in rapidly expanding regulatory environment. This means that hospitals determine the priorities rolled by the record management policy. The role of the health information manager is to develop policies for health information management and procedures in order to promote better health information management practice in the hospitals as working together with heads of departments. (National Hospital Services, Portsmouth Hospitals 2011) Jens-Uwe (2013) asserts that cross-enterprise records are electronic case files aimed at the patient and /or the treatment.

1.2 Statement of Problems

Despite the training given to health information managers in the course of studying health information management in the schools of higher learning, to collect, collate, analysis, and disseminate useful health information, it was still noted in some cases that health workers in the public health institutions, such as medical doctors and nurses, are usually not able or are struggling to render timely and effective health services to citizens due to a lack of effective information management systems. Ineffective health management systems usually lead to long patient waiting times before patients receive health service.

In view of the above situation, the researcher tends to investigate how effective is health information gather in Mother and Child Hospital, Akure in ensuring effective health care delivery system.

1.3 Objective of the Study

The general objective of this study Health Information: A Tool for effective Health Care Delivery in Nigeria (Mother and Child Hospital, Akure experience) include the followings:

1. To find out the types of health records kept in Mother and Child hospital in Akure.
2. To determine the relationship between health information management and service delivery
3. To find out the challenges faced by Mother and Child hospital's health information personnel in managing health information and service delivery.
4. To find out the challenges faced by other medical and paramedical staffs in Mother and Child hospital in prompt retrieval and accessibility of patient information for continuation of care.
5. To identify patients' view on time spent before their information could be retrieved.

1.4 Research Questions

1. What are the types of health records kept in Mother and Child Hospital, Akure?
2. Is there relationship between health information management and service delivery?
3. What are the challenges faced by Mother and Child Hospital's health information personnel in managing health information and service delivery?
4. What are the challenges faced by other medical and paramedical staffs of Mother and Child Hospital in prompt retrieval and accessibility of patient information for continuation of care?
5. What are the challenges faced by patients and their view on time spent before their information could be retrieved?

1.5 Research Hypothesis

Ho: The health information managed in M&C hospital in Akure is not an effective tool for effective health care delivery.

Hi: The health information managed in M&C hospital in Akure is an effective tool for effective health care delivery.

1.6 Scope of the Study

The population of the study includes medical and paramedical staffs of Mother and Child Hospital, Akure, and the patients attending the hospital.

1.7 Significance of the Study

Results from this study will be useful to the sampled Hospital, the state Hospital Management Board, and the country at large because government operates essential businesses through its public organization, as a result of this, change will be evident, hence, the study is of great significance as they will support the appropriate policies to support the firms. The results will also directly point to the development and management of health information and their use in achieving maximum output and good service delivery at Mother and Child Hospital, Akure and beyond.

To the researchers and academicians, it's expected that the study will form a base for another study. The findings of this study will also add new knowledge on the topic and serve as a base for further research in areas where other scholars will identify a gap.

1.8 Operational Definition of Terms

Data: These are raw facts, events and transactions which have been recorded.

Information: The meaningful and usable product that emerges from process data produced in such a form as to be useful to the recipient.

Health: According to WHO, health is defined as the states of complete, physical, mental, and social wellbeing of an individual and not just the absence of diseases or infirmity.

Health Information Management: Collection of data compiled on a patient to assist in his/her present or future illness.

Health Care: Is the diagnosis, treatment, and prevention of disease, illness, injury, and other physical and mental impairments in humans

Health Care Delivery: Is the prevention, treatment, and management of illness and the preservation of mental and physical well-being through the services offered by the medical and allied health professions

Chapter Two

Literature Review

2.0 Introduction

Information from a patient's record is critical in making health-related decisions and timely access to this information in healthcare facilities is paramount to achieving efficient care delivery (Kumar 2011). The purpose of a patient record is to recall observations, to inform others, to instruct students, to gain knowledge, to monitor performance, and to justify interventions (Reiser 1991). However, observational studies of physicians' use of the paper based record find logistical, organizational, and other practical limitations reduce the effectiveness of the traditional records for storing and organizing an ever-increasing number of diverse data (Tang and McDonald 2006). An electronic health record (EHR) is designed to overcome many of these limitations, as well as to provide additional benefits that cannot be attained by a static view of events (*Ibid*).

2.1 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 present 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.

2.2 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).

2.3 Uses and purposes of Medical Records.

The Role of the Medical Records Department

Medical records form an important part of documents or records within any health institution or a medical facility. Due to the importance attached to medical records, there is usually a department responsible for ensuring proper administration and management of records to enhance medical delivery service. Such a department also ensures that issues of care and safe keeping are in place to avoid abuse by those not supposed to view the records. According to Green and Bowie (2005), the record department is responsible for allowing appropriate access of patient information while at the same time maintaining confidentiality for patient and provider data.

Medical Record Department (MRD) as defined by WHO (2001) is an extremely busy department and the work of medical record clerks are very demanding. Although, according to WHO (2001), staff is not directly involved in patient care at the information department. Medical record staff therefore must be resourceful and dedicated to work in a busy and extremely important section of the hospital. Even so, the U.S Office of Personnel Management (1991) cautions that in outlining the functions of the MRD, it must be noted that specific demands for services vary according to the type of the institution.

WHO (2001), further identifies the primary functions of MRD to include development and maintenance of the master patient index for patient identification; retrieval of medical records for patient care and other authorized use; discharge procedure and completion of medical records after an inpatient has been discharged or has died; coding diseases and operations of patient discharged or died; filing of medical records; evaluation of medical records service; completion of monthly and annual statistics and for medico-legal issues relating to the release of patient information and other legal issues.

With regard to the role of staff for the MRD the United States Office of Personnel Management (1991) states among others that, personnel must have the medical records management and administrative knowledge and skills necessary to the development and maintenance of medical records programme; develop and implement policies and procedures to process medico-legal documents and insurance and correspondence requests,

and to document, store and retrieve medical records information conforming with Federal State and local statutes; advice staff members or research investigators on methods of recording and retrieving health care data for special studies and perform retrieval of data for studies; coordinate with appropriate personnel to manage, supervise and perform administrative work to meet procedural, legal and administrative requirement concerned with the admission, treatment, transfer and discharge of patients; design, conduct and test an in service education program for medical records employees, medical staff members, students and other health care personnel; make projections on growth of medical records system and implement design changes to accommodate programme expansion etc.

Given the nature of roles found within the MRD different cadres of personnel are found Medical Records Officer/Technician/Clerk/Attendant etc. The sensitivity and confidentiality of medical records has been an issue of discussion some decades ago.

According to Snook (1992), the Medical Records Administrator must be alert to certain legal requirements with regard to the handling and release of medical information and medical records. The Medical Records Administrator is expected to handle privileged communication with individuals through the courts or various governmental agencies under established hospital policy and follow state federal rules and laws (Snook, 1992).

Furthermore, the Medical Records Administrator is the special guardian of medical records that are under litigation. In that capacity the administrator has to testify orally or in writing at legal hearings and sometimes actually has to go to court to indicate that then hospital record is the accurate medical document as it is purported to be.

Other than the roles of the MRD staff, there exists also the medical records committee which acts as liaison between the medical records department and physicians in the records. The committees are mandated to review and approve all new medical record forms. The committee further evaluates the accuracy of certain record details relating to the management and administrative matters of the records.

From the functions of the MRD it is evident that there are many roles performed hence several sections and departments within the MRD. The statistical section of the MRD provides the input to many computerized data services that hospitals use to generate computerized patient data profiles. Further to this, Snook (1992) notes the primary source of this data is the patients discharge abstracts that is submitted to certain third party agencies. This data is then summarized in computer language and sent to a computer with large

memory banks. Once data has been computerized the hospital will then be able to receive the information in a readable and quickly retrieval fashion. Hard copies of medical records on the other hand can be stored as microfiche which is regarded as an efficient cost effective means of storage and retrieval.

Another notable section according to Snook (1992) is the Transcription Section which is an area in which typists transcribe the summaries and report dictated by physicians on paper for filing in the medical record. Snook (1992), however also notes that unlike in the past where medical transcribers were employed, the situation has since changed as the that it relieves the hospital from maintaining a bank of technical transcription equipment and a cadre of qualified typists.

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 et al, (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 et al. (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.

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 personnel. 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.

2.5 The concept of information infrastructure

The term information Infrastructure (II) gained its rhetorical thrust from visions initiated by the Bill Clinton administration in the United States (1993-2001) which was followed up by the European Union's plan for Pan European II. These visions were seen as means to launching the information society (Hanseth and Monteiro 1998). Hanseth (2002) defined II as "an awesome shared, evolving, open, standardized, and heterogeneous installed base" while Pironti (2006) defined it as all of the people, processes, procedures, tools, facilities, and technology which supports the creation, use, transport, storage, and destruction of information. An information infrastructure that is non-local and distributed, like the EHR, will encompass multiple actors that may have different needs and interests that may not be aligned. For information infrastructure to work, some working resolution between the multiple local interests and the over-arching or "global" interests of the network as a whole needs to be found (Star and Ruhleder 1996). A key characteristic of II is that infrastructures

evolve and grow slowly over time where the existing infrastructure- the installed base- strongly influences how it can be improved. The installed base should therefore be seen both as a material to be shaped (improved and extended) at the same time as it is an actor that often appears to live a life of its own outside the control of designers and users (Hanseth 2002). In the process, the infrastructure shapes and is shaped by the work practice in an ongoing co-construction process between technical and social elements. Installation of new infrastructure like the EHR in a Nigerian secondary healthcare facility therefore requires that we put existing infrastructure into consideration in such a way that it develops through extending and improving the installed base. This will include also the social aspect (users) because the social and the technical aspects interoperate (Hanseth and Monteiro 1998). To build (or grow) infrastructures is a challenging endeavour for several reasons: Its expand through integrating previously separate systems, however, integration is not only a technical concern of achieving interoperability, rather a process embedding political and institutional interests. For instance, in the context of implementing an EHR in a Nigerian Secondary Healthcare setting, a number of heterogeneous actors, including developers, the government, and users', are involved with diverging interests, which requires ongoing political negotiations (Sahay, Monteiro et al. 2009). It is worthy of note that infrastructure development is characterized by uncertainty. It is basically an open process due to the many interdependencies that need to be dealt with. Furthermore, unintended side effects and the participating actors' reflexivity can add to the complexity (Hanseth and Ciborra 2007). It has also been noted that the success and failure of an EHR depends on the design reality gap that exists between 'current realities' and 'design conceptions of the EHR' (Heeks 2006). A successful implementation of the EHR in a Nigerian secondary Healthcare facility hinges on how effectively the above issues are dealt with.

2.6 Concept of Paper-based Patient Medical Record

Paper-based records require a significant amount of storage space compared to digital records. In the United States, most states require physical records be held for a minimum of seven years.

The costs of storage media, such as paper and film, per unit of information differ dramatically from that of electronic storage media. When paper records are stored in different locations, collating them to a single location for review by a health care provider is

time consuming and complicated, whereas the process can be simplified with electronic records. This is particularly true in the case of person-centered records, which are impractical to maintain if not electronic thus difficult to centralize or federate (Milewski *et al*, 2009).

When paper-based records are required in multiple locations, copying, faxing, and transporting costs are significant compared to duplication and transfer of digital records. Because of these many "after-entry" benefits, federal and state governments, insurance companies and other large medical institutions are heavily promoting the adoption of electronic medical records. The US Congress included a formula of both incentives (up to \$44,000 per physician under Medicare or up to \$65,000 over six years, under Medicaid) and penalties (i.e. decreased Medicare and Medicaid reimbursements for covered patients to doctors who fail to use EMRs by 2015) for EMR/EHR adoption versus continued use of paper records as part of the Health Information Technology for Economic and Clinical Health (HITECH) Act, enacted as part of the American Recovery and Reinvestment Act of 2009. Most of the patient and administrative information that flow throughout the health care system is still recorded on paper. According to an earlier report by cnnmoney.com, only about 8% of the nation 5,000 Hospital and 17% its 800,000 physician currently use the kind of common computerized record keeping system.

In general, medical records may be on physical media such as film (X-rays), paper (note) photographs, often of different sizes and shapes, physical storage of documents is problematic as not all document types fit in the same size folder or storage spaces. In the current global medical COMPUSOFT, An international journal of advanced computer technology, March-2013 (Volume-II, Issue-III) environments, patients are shopping for their procedures many international patients travel from one country to the other for special treatment or to participate in clinical trial co-ordination these appointment via paper-based record is a time consuming procedure. Physical records usually requires significant amount of space to store to them, when physical records are no longer maintained, the large amount of storage space are no longer required paper film and other expensive physical media usage can be reduce by electronic record storage. Paper records are stored in different location, furthermore, collecting and transporting them to a single location for review by a health care provider is time consuming. Also when paper records are required in multiple location, copying, faxing and transporting cost are significant (Okeke, 2008).

In 2004, an estimate was made that 1 in 7 hospitalizations occurred when medical records were not available. Additionally, 1 in 5 lab-tests were repeated because results were not available at the point of care. All these were as a result of paper-based medical records. Hand written paper medical records can be associated with poor legibility, which can contribute to medical errors (Pierce, 2008). Paper-based patient record hinder flow according to (Schneider & Wagner, 1993) once information has been recorded within a set of bulky paper records, it may not be readily accessible later, effort to compile more complete paper records are likely to make this problem worse. Paper records can only be used in one place at a time. The data are only as secure as the paper itself and the entire records are individual page within a record can easily be misplace, damage lost or stolen.

2.7 Concept of Computer-based Patient Record

Laing (2002), suggested that if all information in paper-based records were digitized and embedded within information system that will provide rapid context sensitive access to the data and link to other information in the institution. The health care delivery could fully documented information using a variety of convectional and handheld computers equipment with keyboard, pen-based. Structured data entry or handwriting recognition illegible or consistent entries could be caught and corrected as they are entered in medical order, their results and all others internal transactions could be tracked automatically. Though, (Lating, 2006), have made a significant contribution toward the development of a computerize medical records for medical institutions, however this project intends to look at how medical record of a hospital would be share only within the hospital by the staff and not across the institution. Health information could be stored as individual indexed items of information that could be abstracted into reports and compare among patients. Record could be accessed and easily duplicated when necessary. Information anywhere within the record could be access by minimal delay. Data could be located from any one delivery medium and digital device that access them could be designed with a wide variety of capability and capacity (Hunt *et al*, 2012). A page from a paper base patient record could be stored electronically in many different ways. The information could be scanned and store as an image (much like a fax) that is the picture of a paper form but is not searchable or editable document imaging system are widely available that use computer and optical disk to store such image and make them available to clinicians on workstation with graphic terminals.

These system reduces the amount of physical storage space require for patient record and they allow the record to be shared by clinicians and administrative officers without physically transporting the records.

Handwritten medical record can be associated with poor legibility which can contribute to medical error, pre-printed firms, the standardization of abbreviation and standard for penmanship were encouraged to improve reliability of paper medical records. Electronic record help with the standardization of forms terminology and abbreviation and data input. Digitization of form facilitates the collection of data for epidemiology and clinical studies. Duplication of lab tests, diagnostic imaging, and other services can be prevented by good record-keeping of any type.

However, because database records can be available at many locations at once, integration of services and awareness of duplication can be reduced. Database management system enable health organization to access old records instantly, thereby allowing the health work to send to another health organization in the event of an emergency. According to Pierce (2008), there are affordable digital technology solutions for reducing paper dependency well within the reach of practices that are uncertain whether they could benefit from a fully integrated electronic medical records system.

Automated storage and retrieval systems

This can provide many of the same benefits as EMR technology for less cost or may be used to complement an EMR system by providing large volume electronic storage of sensitive paper files that include protected health information.

Typically, the solution includes hardware and software that enable secure capture, printing, scanning, electronic storage, and retrieval of medical documents.

Hardware components may include:

- 1) A digital multifunction product (MFP) which includes print, scan, copy, and fax capability where hardcopy documents (such as paper copies of EKGs, consultation letters and release forms) are scanned.
- 2) A secure electronic filing and retrieval system; and
- 3) A dedicated backup server for added protection from data loss. Software components may include applications for indexing and retrieving documents, and for generating accountability reports.

Paper-to-digital uploading applications

This help solve the problem of redundant data entry between paper forms and digital data systems. Until recently, organizations have had no choice but to manually re-enter data from paper documents into digital practice management or medical records systems requiring staff time and introducing the potential for errors. Now there are reliable solutions that simplify the uploading of information from paper forms via a single scanning operation

2.8 Benefits of Hospital Information Systems

Hospital Information Systems improve workflow and increase patients' access to health care (Ouma & Herselman, 2008). Sisniega (2009) asserted that the applications of information and communication technologies facilitate ubiquitous and instantaneous communication between organizations and their stakeholders. ICT enable people and organizations to achieve seamless workflow and effective processes through improved interactions. Electronic health technologies enable effective networking by physicians, allow online review of patients' treatment, and provide for accurate prescription of drugs. Radiology information systems enable the transmission of radiological images for evaluation in remote sites (Weimar, 2009). Electronic data interchange is part of the applications of a robust and integrated electronic health record system. The type of integrated system envisioned by President Bush's administration is aimed at warehousing the health care information of all Americans in a national database by 2014 (Thielst, 2007). Electronic data interchange primarily is aimed at achieving seamless continuity of care, irrespective of patient migration from one clinician to another or from one city to another.

A study on electronic medical records by Keenan et al. (2006) found improvement in daily work and enhanced patient care: (a) medication turn-around times fell from 5:28 hours to 1:51 hours; (b) radiology procedure completion times fell from 7:37 hours to 4:21 hours; and (c) lab results reporting times fell from 31:3 minutes to 23:4 minutes. In the same study, transcribing errors for orders declined, and length of hospital stay decreased. Other benefits of electronic medical records systems are possibility for online monitoring of vital signs, capability for multi-site review of patients' records, and improved physicians' collaboration in patient care. EMR facilitates easy access to medication administration records, sharing of consultation reports, and decreased transmit time of test results by reducing the time taken to deliver paper versions (Keenan et al., 2006). In a heterogeneous society like Nigeria with

significant disparity in accessibility of health care facilities between urban and rural communities, hospital information systems may help to bridge the gap in availability of patient care (Ouma & Herselman, 2008). Sammon, et al. (2009) associated patient data analysis systems (PDAs) with enhanced storage and analysis of patient data enabling physicians to reach improved clinical decisions on patient care. Similarly, clinical information systems capture clinical data to enhance prompt and efficient decision making (William & Boren 2008). Health care policy makers seeking ways of improving quality of patient care at a reduced cost are leveraging hospital information systems to achieve these objectives (Sammon et al., 2009; Simon et al., 2008).

A major challenge that exists for health care systems is the integration of software systems that can service the various needs of the organization. Stone, Patrick, and Brown (2005) opined that effective organization creates specific and strategic objectives, including objectives related to the clinical and operational strategies (p. 33). Failing to address the interrelationships that exist between the strategies can result in unforeseen negative consequences (p. 34). In the implementation of an electronic medical record, an organization that fails to identify the need for the EMR system to communicate or integrate with the billing software may likely encounter increase process failures requiring additional resources for correction. Successful organizations develop strategies capable of identifying organizational needs. Such organizations anticipate challenges and launch remediation efforts by installation of computer networks and systems (Stone et al., 2005) Information technology in general enables intra organizational networking that facilitates effective information flow within the various units of a firm. In the world of an organization's complex network, workforce diversity, and departmentalization, information can become lost in a milieu of activities; hence, decision-making, schedule of responsibilities, and an information flow chart are necessary for effective organizational operations (Kaliyadan *et al*, 2009). In addition to prompt delivery of investigation reports to patients and clinicians, some aspects of information technology enable decisions made on organizational processes to be timely and effectively disseminated to the workforce.

Analytical software systems provide means for both dissemination of information and relevant quantitative data to support management decisions. Analytical information systems help organizations to maintain a competitive edge in the marketplace by increasing operational speed and maintaining fluidity of information flow (Keenan *et al*, 2014). Crane

and Crane (2006) reported that numerous solutions for the medication error problem in hospital settings might be averted with the use of an integrated systems approach. However, execution of an organization's integrated electronic medical record without use of communication billing software may escalate process breakdowns. Phillips (2009) stated that the use of an integrated system offers considerable conceptual flexibility and data integration capabilities instead of using one module for electronic records. An integrated records system promotes a user-interface with e-records repository to facilitate storage and eventual retrieval of records.

Other benefits of electronic health systems include optimization of clinical time because of effective communication and increased compliance with regulatory guidelines (Georgiu *et al*, 2005). Keenan *et al*. (2006) opined that electronic medical records system provide an effective educational tool for training of resident doctors and medical students. Health care information technology and e-health offer strong potential in research and development of clinical protocols.

Challenges in Health Records Management Practice

In the case of manual records, it is established that the greatest issue is lack space for the increasing number of health records. With concern to physical space for storage of paper health records, Dollar (2002) notes that it is a challenge many institutions will keep battling with. Hospitals producing hundreds to thousands of records each day means that after a given period of time the records accumulate huge volumes of paper records. This may bring about difficulty in locating some records and also lack of sufficient space to carry all the records before they are disposed. This becomes the major challenge for paper records. For electronic records many challenges have been identified. These challenges include high costs of installation, system failure, cyber-crime, lack computers operational skill of the record management staff. The study focused on the aspect of legal requirement and technological obsolescence, in electronic records management. Unlike paper, loss of electronic records is guaranteed unless actively managed.

Paper can be ignored for 100 years, and when it is opened the information is perfectly readable if the state ignores electronic records for 10 years, the fragility of the media and technological obsolescence will make access difficult. The longer one waits to manage these records, the less likely the data will be recoverable. Therefore, the condition poses a

challenge of obsolescence of electronic records management systems, hence the record therein. The Department of Technology Services, Philippines (2012), also points out that like the floppy disc, the CD, or its operating system, may become obsolete in the future, requiring State Archives to either maintain obsolete technology or to upgrade or convert information to newer technology formats. All the options mentioned above will be costly. This means that there is need to always keep up to date with the new technologies to make sure that the information available in the current formats can be accessed even in future when technology has changed. Another challenge of electronic health records management, according to the International

Record Management Trust (2006) is that of legal requirement. The Trust argues that, in hospitals where the introduction of a patient administration system is feasible, it may be possible to dispense with certain types of records needed in a paper based environment. In particular, the patient registers are likely to be deemed irrelevant or less necessary. Where the registers above constitute duplicate records of the same information in different formats, their use can be discontinued where appropriate computer systems are in place. Nevertheless, where the content of paper registers may be needed for legal or archival purposes, appropriate measures must be taken before any decision is made to rely solely on the electronic system and to abandon paper altogether. These legal requirements may include the need to sign, by hand, a document to authorize for instance a medical operation on a patient.

CHAPTER THREE

3.0

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter focuses on the procedure for conducting the research. The procedures adequately present description of terms under the following subheadings; research design, research setting, target population, sampling technique; instrument for data collection validity / reliability of instrument, method of data collection, method of data analysis and ethical consideration.

3.2 RESEARCH DESIGN

The research design used was across sectional descriptive survey in order to observe the *Health Information: As a Tool for effective Health Care Delivery in Nigeria (Mother and Child Hospital, Akure.)*

3.3 DESCRIPTION OF RESEARCH POPULATION INCLUDING THE AREAS OF STUDY

3.3.1 Brief historical background of Mother and Child Hospital, Akure

Mother and Child Hospital, Akure (MCHA) was established and commissioned on the 27th February, 2010, by Dr. Olusegun Abayomi Mimiko (a.k.a. Iroko) who was the honorable governor of the state. The goal of the hospital which was constructed and commissioned by the Governor, was to assist the state to achieve the Millennium Development Goals (MDGs), on the reduction of infants and maternal mortality.

It was recorded that 200,000 pregnant women across the country had given birth in the hospital which was the pride of the state free of charge.

MCHA offers qualitative and effective health care for women and children (0 – 5 years). Integrated maternal and child care facility fully poised to offer critical interventions when required.

MCHA is dedicated to the care of pregnant women and children less than five years of age, offering tertiary level health services free of charge.

This facility was not limited to only pregnant women in the state at inception, as more than 20% of the patients treated at the hospital were said to be non- residents of the state, who

were attracted by the free service offered at the hospital, including caesarean section (CS) operation. With MCHA and MCHO Ondo town, pregnant ceased to be a death sentence to expectant mothers in the State, especially for those who needed affordable, quality health care.

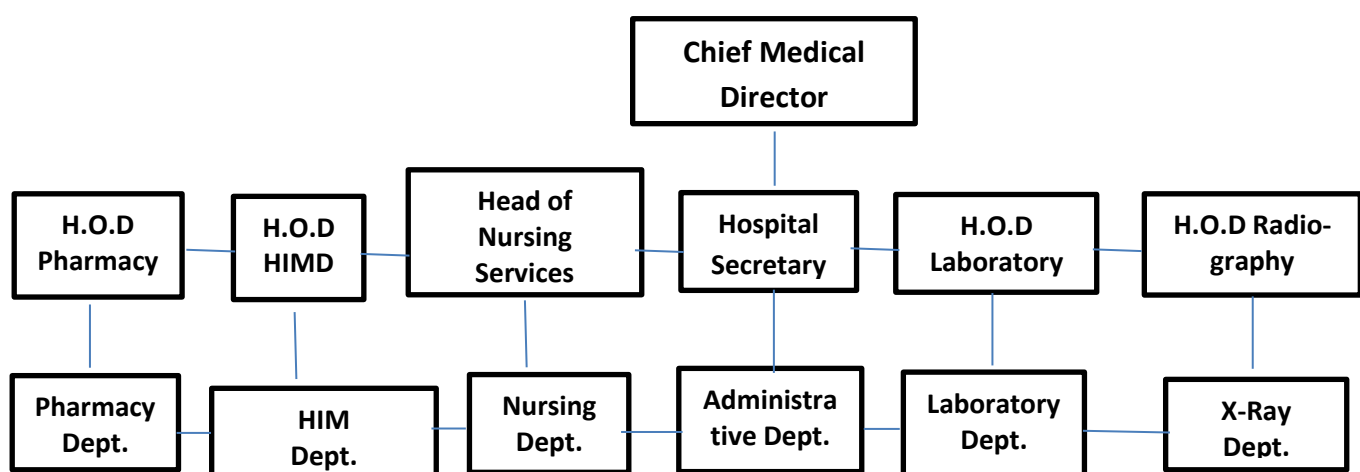
The name of the first Chief Medical Director (CMD) was Dr. Lawal Oyeneyin. The name of the first secretary was Mr. Fanibuyan Niyi. We have various departments, which are Health Information Management department (HIM), Administrative department, Nursing, Medical, Surgical, Dietician, Medical Laboratory, Immunization, Electrical and Electronic to mention but few.

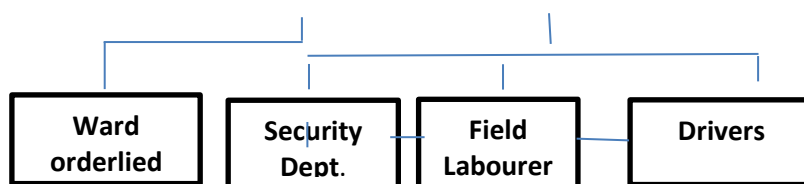
The state became a reference point in sub-Saharan Africa, after being recognized and rated by the World Health Organization (WHO) the United National Children's Fund (UNICEF) as successful in reduced child mortality and improved maternal health saw to reducing maternal mortality to barest minimum. The state also won many laurels and recognition for the initiative.

The major sources of health information in Mother and Child Hospital, Akure, Ondo State are from the hospital's admission offices and outpatient department. The source and the process of creation of the information are vital since the two determine the value of that information and its usability. Entries will be made in all inpatient, outpatient, and service treatment, health records by the healthcare provider who observes, treats, or cares for the patient at the time of observation, treatment, or care.

It is therefore needful the examine the effectiveness of the health information collected, gathered and kept on patients in Mother and Child Hospital, Akure, Ondo state. These necessitate this research work.

3.3.2 *Organizational Structure of the hospital*

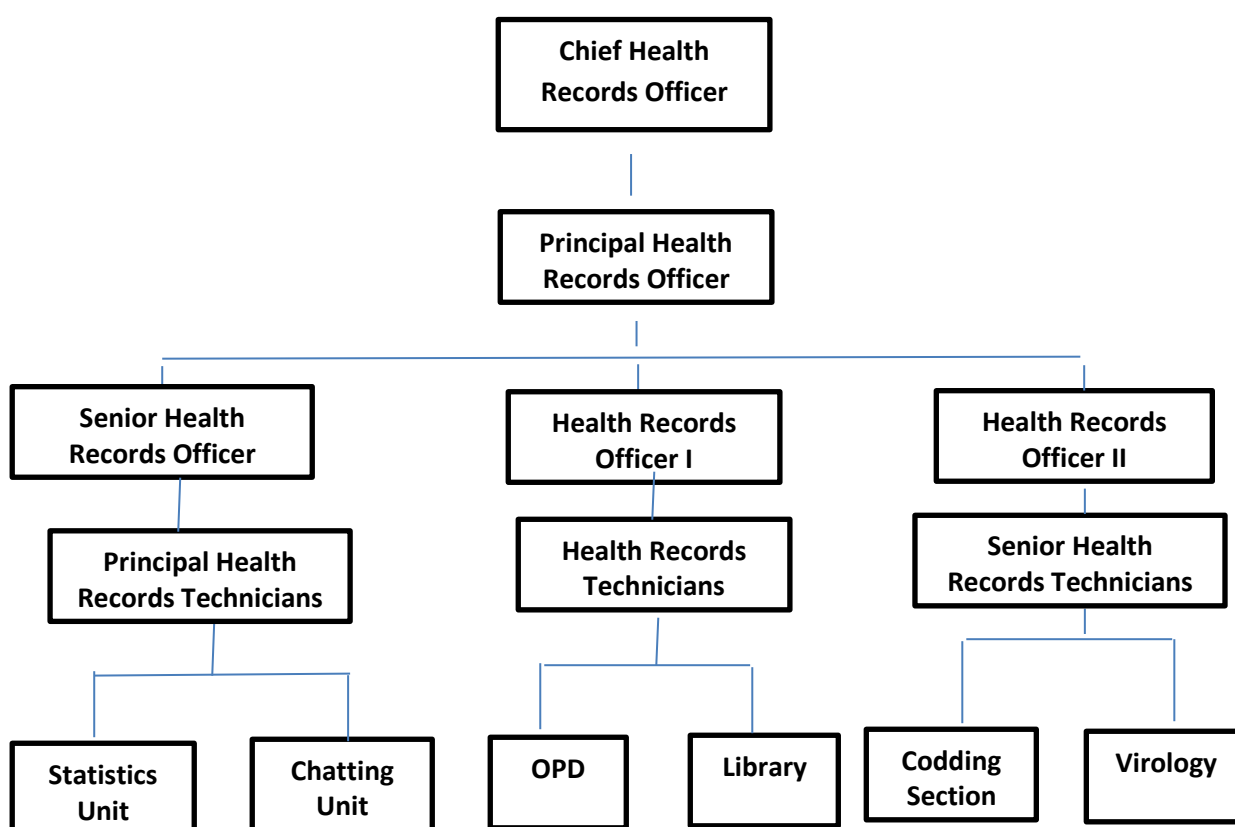




3.3.3 *Brief history of health information department in the hospital*

The history of the department is as old as the hospital itself, the first HOD of Health Information department was **Mrs. Akinoye Ifesade Aduke** with different sections under her supervision, which include OPD, Statistics section, coding and Indexing Section, Library etc. and the aim is to assist the state government to achieve the Millennium Development Goals and the reduction of infants and maternal mortality.

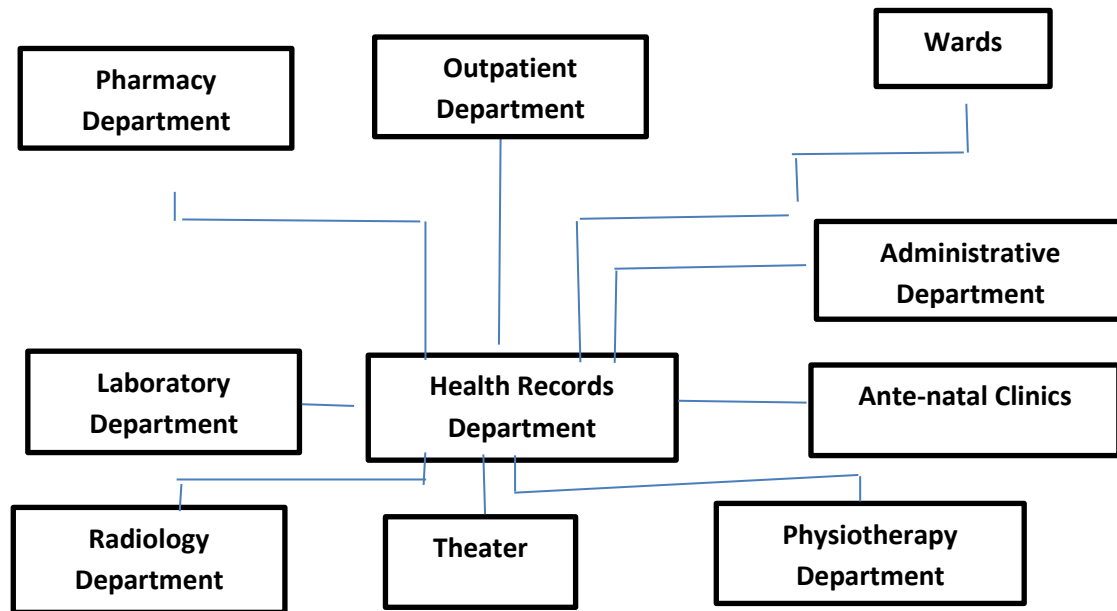
3.3.4 *Organizational structure of HIM Department in the hospital*



3.3.5 *Inter-departmental relationship in the hospital*

Health Information Department is the pivot on which other department revolve round. Information is power, health information generated from the department is very vital for the growth and development of the facility. Other health care provider depends solely on this generated information to progress; this is why the department is very crucial and cannot be ignored. Other departments do come to the department for one thing or the other. The

department is the first and the last port of call for the patient and other department as shown below.



3.4 SAMPLING AND SAMPLING TECHNIQUES

200 Health practitioners were sampled and used for this research work; they include doctors, HRO/HRT, Nurses, and others which include patient, and other paramedical professionals, they were sampled using convenience sampling technique in the both hospitals for easy accessibility.

3.5 INSTRUMENTATION

The instrument used for data collection in this study was a structured questionnaire in order to generate information about the *Health Information: A Tool for effective Health Care Delivery in Nigeria (Mother and Child Hospital, Akure.)*

3.6 DATA COLLECTION PROCEDURE

Two hundred (200) questionnaires were administered and all the copies were retrieved by the researcher which was used for the analysis of the study.

3.7 METHOD OF DATA ANALYSIS.

The data were analyzed using appropriate Frequency table, while chi-square was used to discuss the research questions, complex statistics were not used.

3.8 ETHICAL CONSIDERATION

The researcher sought the informed and expressed consent of the health practitioners involved.

Questionnaires were distributed and gladly received by all except few that rejected it on the grounds that they were busy. Participants were further assured of the confidentiality of the information supplied.

CHAPTER FOUR

4.0 DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

4.1 INTRODUCTION

This chapter covers data presentation, analysis and discussion of findings. The researcher used tables to present the data collected, while simple percentage were used to analyze the data collected from respondents.

4.2 PRESENTATION AND ANALYSIS OF DATA

AGE GROUP		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-25	31	15.5	15.5	15.5
	26-35	50	25.0	25.0	40.5
	36-45	70	35.0	35.0	75.5
	46 >	49	24.5	24.5	100.0
	Total	200	100.0	100.0	

Source: Research Fieldwork (2019) 7

Analysis: 15.5% of the respondents fall between the ages of 18 – 25 years, 25% of the respondents fall between the ages of 26 – 35 years, 35% of the respondents fall between the ages of 36 – 45 years, while 24.5% of the respondents fall between the ages of 46 years and above.

MARITAL STATUS	Frequency	Percent	Valid Percent	Cumulative Percent
Valid SINGLE	40	20.0	20.0	20.0
MARRIED	160	80.0	80.0	100.0
Total	200	100.0	100.0	

Source: Research Fieldwork (2019)

Analysis: 20% of the respondents are single, 80% of the respondents are married.

TRIBE	Frequency	Percent	Valid Percent	Cumulative Percent
Valid YORUBA	150	75.0	75.0	75.0
HAUSA	10	5.0	5.0	80.0
IGBO	30	15.0	15.0	95.0
OTHERS	10	5.0	5.0	100.0
Total	200	100.0	100.0	

Source: Research Fieldwork (2019)

Analysis: 75% of the respondents were Yoruba tribe, 5% of the respondents were Hausa, and 15% of the respondents were Igbo, while 5% of the respondents belong to other Tribes.

RELIGION	Frequency	Percent	Valid Percent	Cumulative Percent
Valid CHRISTIANITY	160	80.0	80.0	80.0
OTHER	30	15.0	15.0	95.0
OTHERS	10	5.0	5.0	100.0
Total	200	100.0	100.0	

Source: Research Fieldwork (2019)

Analysis: 80% of the respondents were Christians, 15% of the respondents were Muslims, while 5% of the respondents belong to other religions.

OCCUPATION	Frequency	Percent	Valid Percent	Cumulative Percent
Valid DOCTORS	20	10.0	10.0	10.0
HIM	40	20.0	20.0	30.0
NURSES	40	20.0	20.0	50.0
OTHERS	100	50.0	50.0	100.0
Total	200	100.0	100.0	

Source: Research Fieldwork (2019)

Analysis: 20% of the respondents were Nurse, 20% of the respondents are HRO/HRT, 10% of the respondents were Doctor, and 50% of the respondents were other para-medical professional and patients.

Health Information is the information gathered on patient during the cause of hospitalization?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid AGREED	80	40.0	40.0	40.0
STRONGLY AGREED	120	60.0	60.0	100.0
Total	200	100.0	100.0	

Source: Research Fieldwork (2019)

Analysis: 40% of the respondents agreed and 60% of the respondents strongly agreed that Health Information is the information gathered on patient during the cause of hospitalization.

You have had access to patient information before?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid AGREED	110	55.0	55.0	55.0

STRONGLY AGREED	90	45.0	45.0	100.0
Total	200	100.0	100.0	

Source: Research Fieldwork (2019)

Analysis: 55% of the respondents agreed and 45% of the respondents strongly agreed that they have access to patient information before.

Clinicians can attend to any patient without calling for patient health records if revisiting?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid DISAGREED	70	35.0	35.0	35.0
STRONGLY DISAGREED	100	50.0	50.0	85.0
AGREED	10	5.0	5.0	90.0
STRONGLY AGREED	20	10.0	10.0	100.0
Total	200	100.0	100.0	

Source: Research Fieldwork (2019)

Analysis: 35% of the respondents disagreed and 50% of the respondents strongly disagreed to the question if Clinicians can attend to any patient without calling for patient health records if revisiting, while 5% of the respondents and 10% of respondents agreed and strongly agreed.

The care given to patient can be evaluated by the records documented?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid DISAGREED	30	15.0	15.0	15.0
STRONGLY DISAGREED	20	10.0	10.0	25.0
AGREED	110	55.0	55.0	80.0
STRONGLY AGREED	40	20.0	20.0	100.0
Total	200	100.0	100.0	

Source: Research Fieldwork (2019)

Analysis: 15% of the respondents disagreed and 10% of the respondents strongly disagreed to the question if the care given to patient can be evaluated by the records documented, while 55% of the respondents and 20% of respondents agreed and strongly agreed.

Health Information department is a pivot for other departments to rotate on?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid DISAGREED	10	5.0	5.0	5.0
STRONGLY DISAGREED	30	15.0	15.0	20.0
AGREED	70	35.0	35.0	55.0
STRONGLY AGREED	90	45.0	45.0	100.0
Total	200	100.0	100.0	

Source: Research Fieldwork (2019)

Analysis: 5% of the respondents disagreed and 15% of the respondents strongly disagreed to the question if the Health Information department a pivot other department rotate on, while 35% of the respondents and 45% of respondents agreed and strongly agreed.

Without health information, there is no patient care?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid DISAGREED	20	10.0	10.0	10.0
STRONGLY DISAGREED	10	5.0	5.0	15.0
AGREED	70	35.0	35.0	50.0
STRONGLY AGREED	100	50.0	50.0	100.0
Total	200	100.0	100.0	

Source: Research Fieldwork (2019)

Analysis: 10% of the respondents disagreed and 5% of the respondents strongly disagreed to the question that without health information, there is no patient care, while 35% of the respondents and 50% of respondents agreed and strongly agreed.

Health information is an important tool in ensuring effective health care delivery service?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid AGREED	80	40.0	40.0	40.0
STRONGLY AGREED	120	60.0	60.0	100.0
Total	200	100.0	100.0	

Source: Research Fieldwork (2019)

Analysis: 40% of the respondents agreed and 60% of the respondents strongly agreed to the question that Health information is an important tool in ensuring effective health care delivery service.

Mother and child hospital Akure, keeps Inpatient Records

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid AGREED	120	60.0	60.0	60.0
STRONGLY AGREED	80	40.0	40.0	100.0
Total	200	100.0	100.0	

Source: Research Fieldwork (2019)

Analysis: 60% of the respondents agreed and 40% of the respondents strongly agreed to the question that Mother and child hospital Akure, keeps Inpatient Records.

Mother and Child Hospital Akure, keeps Outpatient Records

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid AGREED	140	70.0	70.0	70.0
STRONGLY AGREED	60	30.0	30.0	100.0
Total	200	100.0	100.0	

Source: Research Fieldwork (2019)

Analysis: 70% of the respondents agreed and 30% of the respondents strongly agreed to the question that Mother and child hospital Akure, keeps Outpatient Records.

Mother and child hospital Akure, keeps Ambulatory Records

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid				
DISAGREED	70	35.0	35.0	35.0
STRONGLY DISAGREED	80	40.0	40.0	75.0
AGREED	50	25.0	25.0	100.0
Total	200	100.0	100.0	

Source: Research Fieldwork (2019)

Analysis: 35% of the respondents disagreed and 40% of the respondents strongly disagreed to the question that Mother and child hospital Akure, keeps Ambulatory Records, while 25% of the respondents agreed.

How is the relationship between health information managers and the patients?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid GOOD	140	70.0	70.0	70.0
VERY GOOD	50	25.0	25.0	95.0
BAD	10	5.0	5.0	100.0
Total	200	100.0	100.0	

Source: Research Fieldwork (2019)

Analysis: 70% of the respondents are of the opinion that there was a good relationship between health information managers and the patient, 25% of the respondents are of the opinion that there was a very good relationship between health information managers and the patient, while 5% of the respondents are of the opinion that there was a bad relationship between health information managers and the patient

Assess the knowledge of health Information Managers of mother and child hospital, Akure in managing health information in the hospital

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	GOOD	70	35.0	35.0	35.0
	VERY GOOD	120	60.0	60.0	95.0
	BAD	10	5.0	5.0	100.0
	Total	200	100.0	100.0	

Source: Research Fieldwork (2019)

Analysis: 3.5% of the respondents are of the opinion that the knowledge of health information managers of mother and child hospital managing health information in the hospital was good, 60% of the respondents are of the opinion that the knowledge of health information managers of mother and child hospital managing health information in the hospital was very good, while 5% of the respondents are of the opinion that the knowledge of health information managers of mother and child hospital managing health information in the hospital was worst.

Assess the equipment use in the management of health information in the hospital

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	GOOD	20	10.0	10.0	10.0
	VERY GOOD	10	5.0	5.0	15.0
	BAD	70	35.0	35.0	50.0
	WORST	100	50.0	50.0	100.0
	Total	200	100.0	100.0	

Source: Research Fieldwork (2019)

Analysis: 10% of the respondents are of the opinion that the equipment use in the management of health information in the hospital was good, 5% of the respondents are of the opinion that the knowledge of health information managers of mother and child hospital managing health information in the hospital was very good, 35% of the respondents are of the opinion that the equipment use in the management of health information in the hospital was bad, while 50% of the respondents are of the opinion that the equipment use in the management of health information in the hospital was worst

Assess the electronic method used in the management of health information in the hospital

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	GOOD	30	15.0	15.0	15.0
	VERY GOOD	10	5.0	5.0	20.0
	BAD	60	30.0	30.0	50.0
	WORST	100	50.0	50.0	100.0
	Total	200	100.0	100.0	

Source: Research Fieldwork (2019)

Analysis: 15% of the respondents are of the opinion that the electronic method used in the management of health information in the hospital was good, 5% of the respondents are of the opinion that the electronic method used in the management of health information in the hospital was very good, 30% of the respondents are of the opinion that the electronic method used in the management of health information in the hospital was bad, while 50% of the respondents are of the opinion that the electronic method used in the management of health information in the hospital was worst.

What is the relationship between the medical and para-medical staff in the hospital

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	GOOD	140	70.0	70.0	70.0
	VERY GOOD	40	20.0	20.0	90.0
	BAD	10	5.0	5.0	95.0
	WORST	10	5.0	5.0	100.0
	Total	200	100.0	100.0	

Source: Research Fieldwork (2019)

Analysis: 70% of the respondents are of the opinion that the relationship between the medical and Para-medical staff in the hospital was good, 20% of the respondents are of the opinion that the relationship between the medical and para-medical staff in the hospital was very good, 5% of the respondents are of the opinion that the relationship between the medical and para-medical staff in the hospital was bad, while 5% of the respondents are of the opinion that the electronic method used in the management of health information in the hospital was worst.

How is the support from the management to the management of health information in the hospital?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	GOOD	120	60.0	60.0	60.0
	VERY GOOD	40	20.0	20.0	80.0
	BAD	40	20.0	20.0	100.0
	Total	200	100.0	100.0	

Source: Research Fieldwork (2019)

Analysis: 60% of the respondents are of the opinion that the support from the management to the management of health information in the hospital was good, 20% of the respondents are of the opinion that the support from the management to the management of health information in the hospital was very good, while 20% of the respondents are of the opinion that the support from the management to the management of health information in the hospital was bad.

How is the retrieval of patient's information for treatment?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	GOOD	70	35.0	35.0	35.0
	VERY GOOD	100	50.0	50.0	85.0
	BAD	30	15.0	15.0	100.0
	Total	200	100.0	100.0	

Source: Research Fieldwork (2019)

Analysis: 35%% of the respondents are of the opinion that the retrieval of patient's information for treatment was good, 50% of the respondents are of the opinion that the retrieval of patient's information for treatment was very good, while 15% of the respondents are of the opinion that the retrieval of patient's information for treatment was bad

How is the support from the government to the management of health information in the hospital?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	GOOD	40	20.0	20.0	20.0
	VERY GOOD	40	20.0	20.0	40.0
	BAD	100	50.0	50.0	90.0
	WORST	20	10.0	10.0	100.0
	Total	200	100.0	100.0	

Source: Research Fieldwork (2019)

Analysis: 20% of the respondents are of the opinion that the support from the government to the management of health information in the hospital was good, 20% of the respondents are of the opinion that the support from the government to the management of health information in the hospital was very good, 50% of the respondents are of the opinion that the support from the government to the management of health information in the hospital was bad, while 10% of the respondents are of the opinion that the support from the government to the management of health information in the hospital was worst.

How is the time spent by patients at the HIM department?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid FEW	150	75.0	75.0	75.0
VERY FEW	40	20.0	20.0	95.0
MUCH	10	5.0	5.0	100.0
Total	200	100.0	100.0	

Source: Research Fieldwork (2019)

Analysis: 75% of the respondents are of the opinion that the time spent by patients at the HIM department was few, 20% of the respondents are of the opinion that the time spent by patients at the HIM department was very few, while 5% of the respondents are of that the opinion that the time spent by patients at the HIM department was much.

How is the time spent by patients at the consulting room?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid GOOD	160	80.0	80.0	80.0
VERY GOOD	40	20.0	20.0	100.0
Total	200	100.0	100.0	

Source: Research Fieldwork (2019)

Analysis: 80% of the respondents are of the opinion that the time spent by patients at the consulting room was good, while 20% of the respondents are of that the time spent by patients at the consulting room was very good.

Have you ever experienced non availability of your information in the hospital?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid YES	110	55.0	55.0	55.0
NO	80	40.0	40.0	95.0
NOT SURE	10	5.0	5.0	100.0
Total	200	100.0	100.0	

Source: Research Fieldwork (2019)

Analysis: 55% of the respondents agreed that they have experienced non availability of your information in the hospital, 40% of the respondents disagreed, while 5% of the respondents were not sure.

Were you attended to when your information could not be located?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid YES	70	35.0	35.0	35.0
NO	100	50.0	50.0	85.0
NOT SURE	30	15.0	15.0	100.0
Total	200	100.0	100.0	

Source: Research Fieldwork (2019)

Analysis: 35% of the respondents agreed that they attended to when their information could not be located, 50% of the respondents disagreed, while 15% of the respondents were not sure.

Does patient's information have effects on patients care in the hospital?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	YES	130	65.0	65.0	65.0
	NO	20	10.0	10.0	75.0
	NOT SURE	50	25.0	25.0	100.0
	Total	200	100.0	100.0	

Source: Research Fieldwork (2019)

Analysis: 65% of the respondents agreed that patient's information have effects on patients care in the hospital, 10% of the respondents disagreed, while 25% of the respondents were not sure.

Do you feel bad when your information was not located?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	YES	170	85.0	85.0	85.0
	NOT SURE	30	15.0	15.0	100.0
	Total	200	100.0	100.0	

Source: Research Fieldwork (2019)

Analysis: 85% of the respondents agreed that felt bad when their information was not located, while 15% of the respondents were not sure.

4.3 DISCUSSION OF FINDINGS.

Research Question one

What are the types of health records kept in Mother and Child Hospital, Akure?

From the respondents view:

Analysis: 60% of the respondents agreed and 40% of the respondents strongly agreed to the question that Mother and child hospital Akure, keeps Inpatient Records.

Analysis: 70% of the respondents agreed and 30% of the respondents strongly agreed to the question that Mother and child hospital Akure, keeps Outpatient Records

Analysis: 35% of the respondents disagreed and 40% of the respondents strongly disagreed to the question that Mother and child hospital Akure, keeps Ambulatory Records, while 25% of the respondents agreed.

It was revealed that Mother and Child Akure, keeps inpatient and outpatient records alone.

Research Question two

Is there relationship between health information management and service delivery?

Analysis: 40% of the respondents agreed and 60% of the respondents strongly agreed that Health Information is the information gathered on patient during the cause of hospitalization.

Analysis: 35% of the respondents disagreed and 50% of the respondents strongly disagreed to the question if Clinicians can attend to any patient without calling for patient health records if revisiting, while 5% of the respondents and 10% of respondents agreed and strongly agreed.

Analysis: 15% of the respondents disagreed and 10% of the respondents strongly disagreed to the question if the care given to patient can be evaluated by the records documented, while 55% of the respondents and 20% of respondents agreed and strongly agreed.

Analysis: 5% of the respondents disagreed and 15% of the respondents strongly disagreed to the question if the Health Information department a pivot other department rotate on, while 35% of the respondents and 45% of respondents agreed and strongly agreed.

Analysis: 10% of the respondents disagreed and 5% of the respondents strongly disagreed to the question that without health information, there is no patient care, while 35% of the respondents and 50% of respondents agreed and strongly agreed.

Analysis: 40% of the respondents agreed and 60% of the respondents strongly agreed to the question that Health information is an important tool in ensuring effective health care delivery service.

From the respondents view, it was revealed that there is a strong relationship between health information management and service delivery since it was revealed that without health records, patient care is not possible.

Research Question three.

What are the challenges faced by Mother and Child Hospital's health information personnel in managing health information and service delivery?

Analysis: 10% of the respondents are of the opinion that the equipment use in the management of health information in the hospital was good, 5% of the respondents are of the opinion that the knowledge of health information managers of mother and child hospital managing health information in the hospital was very good, 35% of the respondents are of the opinion that the equipment use in the management of health information in the hospital was bad, while 50% of the respondents are of the opinion that the equipment use in the management of health information in the hospital was worst

Analysis: 15% of the respondents are of the opinion that the electronic method used in the management of health information in the hospital was good, 5% of the respondents are of the opinion that the electronic method used in the management of health information in the hospital was very good, 30% of the respondents are of the opinion that the electronic method used in the management of health information in the hospital was bad, while 50% of the respondents are of the opinion that the electronic method used in the management of health information in the hospital was worst.

Analysis: 20% of the respondents are of the opinion that the support from the government to the management of health information in the hospital was good, 20% of the respondents are of the opinion that the support from the government to the management of health information in the hospital was very good, 50% of the respondents are of the opinion that the support from the government to the management of health information in the hospital was bad, while 10% of the respondents are of the opinion that the support from the government to the management of health information in the hospital was worst.

From the respondents' views, it was revealed that lack of full implementation of electronic health records, poor equipment in management health information and lack of support from the government are the major challenges confronting health information personnel in managing health information.

Research Question Four.

What are the challenges faced by patients and their view on time spent before their information could be retrieved?

Analysis: 75% of the respondents are of the opinion that the time spent by patients at the HIM department was few, 20% of the respondents are of the opinion that the time spent by patients at the HIM department was very few, while 5% of the respondents are of that the opinion that the time spent by patients at the HIM department was much.

Analysis: 80% of the respondents are of the opinion that the time spent by patients at the consulting room was good, while 20% of the respondents are of that the time spent by patients at the consulting room was very good.

Analysis: 55% of the respondents agreed that they have experienced non availability of your information in the hospital, 40% of the respondents disagreed, while 5% of the respondents were not sure.

Analysis: 35% of the respondents agreed that they attended to when their information could not be located, 50% of the respondents disagreed, while 15% of the respondents were not sure.

Analysis: 65% of the respondents agreed that patient's information have effects on patients care in the hospital, 10% of the respondents disagreed, while 25% of the respondents were not sure.

Analysis: 85% of the respondents agreed that felt bad when their information was not located, while 15% of the respondents were not sure.

From the patient responses during the research process, it was revealed that they had no challenges with time spent as they are being attended to in time but it was revealed that sometimes they don't access they information and they are being denied of having access to treatment.

Research Hypothesis

Ho: The health information managed in M&C hospital in Akure is not an effective tool for effective health care delivery.

Hi: The health information managed in M&C hospital in Akure is an effective tool for effective health care delivery.

Health information is an important tool in ensuring effective health care delivery service?

	Observed N	Expected N	Residual
AGREED	80	100.0	-16.0
STRONGLY AGREED	120	100.0	16.0
Total	200		

Test Statistics using SPSS to run chi – square based on the data analysis

$$\text{i.e. } X^2 = \frac{(o - e)^2}{e}$$

where X^2 is chi – square, o is the observed value and e is the expected value.

	Health information is an important tool in ensuring effective health care delivery service?
Chi-Square(a)	5.120
df	1
Asymp. Sig.	0.05

a. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 100.0.

The chi square calculated is 5.120

The chi square tabulated at df 1 under 0.05 is 3.84

Decision Rule

If H_0 (chi-square calculated) > (chi –square tabulated) reject H_0 , otherwise fail to reject it.

SUMMARY:

In view of the above, Since (chi-square calculated) 5.120 > (chi –square tabulated) 3.84, the null hypothesis is rejected which means the health information managed in Mother and Child hospital in Akure is an effective tool for effective health care delivery.

CHAPTER FIVE

5.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS.

5.1 INTRODUCTION.

This chapter covers the summary, conclusion and recommendations.

5.2 SUMMARY

This research work is based on Health Information – A Tool for effective Health Care Delivery in Nigeria (Mother and Child Hospital, Akure experience), the objectives of the study are to find out the types of health records kept in Mother and Child hospital in Akure, to determine the relationship between health information management and service delivery, to find out the challenges faced by Mother and Child hospital's health information personnel in managing health information and service delivery, to find out the challenges faced by other medical and paramedical staffs in Mother and Child hospital in prompt retrieval and accessibility of patient information for continuation of care and to identify patients' view on time spent before their information could be retrieved.

The concept, models and empirical studies of health records/information management were reviewed under literature review, so as to have enough knowledge on the models of health records/information management

Two hundred questionnaires were administered and all were retrieved by the researcher which was used for the study.

The data was collected and analyzed based on the findings. The result revealed that Mother and Child hospital, Akure keeps inpatient and outpatient records alone, that there is a strong relationship between health information management and service delivery since, that without health records, patient care is not possible, that lack of full implementation of electronic health records, poor equipment in management health information and lack of support from the government are the major challenges confronting health information personnel in managing health information, it was also revealed that patients had no challenges with time spent as they are being attended to in time, it was also revealed that sometimes if patients don't have access to their information, they are being denied access to treatment and finally, it was revealed that health information managed in Mother and Child hospital in Akure is an effective tool for effective health care delivery.

5.3 CONCLUSION

Based on the findings on this research work on Health Information – A Tool for effective Health Care Delivery in Nigeria (Mother and Child Hospital, Akure experience), it can be deduced that due consideration must be given to patients health information and the records must be given special care in preservation retention.

Moreover, it should be noted that to become a Doctor today, Health Information serves as a guide.

Also, in the treatment of the patients, Health Information serves as memory.

Furthermore, in education and training, Health Information constitutes the library.

In addition to this, in Epidemiological evaluation, Health Information is the Laboratory.

More so, in Statistical Analysis and Report, Health Information is also the facts.

Finally, the retention and confidentiality of these Information must not be vested only on Health Information Managers, it must include, the Doctors, Nurses, Statistician and all the members of the health team that contributes to the upliftment of the health of the community because it was revealed that Health Information is an effective tool for effective health care delivery in Nigeria.

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5.4 RECOMMENDATIONS

In view of the above, I will like to sum this project by giving the followings:

Through the efforts and mutual relationship between Health Records Officers Registration Board of Nigeria and the Association of Health Records and Information Management Practitioners of Nigeria (AHRIMPN), I believe that Health Information Management Profession has got position in Nigeria. Therefore, these two parental bodies of the profession should work hand in hand in creating more awareness of the profession to the public.

Also, there should be ‘**STATUTE OF LIMITATION**’ i.e. A national law on how long records should be kept and what should be done to the records at the expiration of the stipulated period. At

the initial stage of planning various hospitals, all professionals should be called to give their professional advice and there is need to train more people to become professionals for effective management of health Information and effective dissemination of reliable information for quality health planning.

Despite the seminars / workshops being organized by the Association, it seems that Health Information Profession has not been properly known in most of our universities. Both bodies should therefore not relent on their efforts. It is suggested that steps should be taken to introduce policies and guidelines that are comparable in standard with other higher institution of similar nature in the country i.e. Universities and Polytechnics, so as to enhance chances for admission to further education and study of relevant courses like Business Administration, Management courses, Computer courses etc. this will not only promote the image of the profession but also of the professionals.

Furthermore, greater efforts should be made to woo Government at various levels, so as to support all plans of action being made towards creating more awareness both on the part of civil populace and Government itself. It is also important to emphasize the need on the part of the Government to support the justification for proper and adequate documentation and retention of health Information so as to give the profession more sense of belonging it deserves through electronic media. This country can achieve paperless health records keeping if adequately planned.

In addition, it is also suggested that admissions into schools of Health Records Administration and Biostatistics throughout the country should be advertised over the media e.g. both print and electronic media etc. examinations could be conducted through systems similar to that of university UTME and Polytechnic JAMB including internal examinations and interview. This would proclaim the image and create more awareness of the profession. Textbooks should be provided on Nigerian Basis for the students so as to increase the percentage of passes in the profession, because most of textbooks found around are produced by foreign authors and based on foreign health records keeping.

Moreover, various arms of government (Local, State and Federal), should endeavor to give encouragement and due supports that are necessary to make this noble profession attain a higher level, because I belief that the profession is still at infant stage in this country.

Finally, understanding this thesis, it can be concluded that the importance of community in promoting adequate and positive health care delivery cannot be over emphasized. There is therefore, the need for each and every one to act well his / her own part in supporting the proper and adequate health care services in the community.