

**THE ROLE OF MEDICAL RECORDS MANAGEMENT IN SUPPORT OF
PATIENT CARE AT OCEAN ROAD CANCER INSTITUTE, DAR ES
SALAAM, TANZANIA**

BY

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of the Requirements for the Award of the Degree of Master of Science in
Records and Archives Management, Department of Library, Records
Management and Information Studies**

**MOI UNIVERSITY
ELDORET**

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DECLARATION

DECLARATION BY THE CANDIDATE

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DEDICATION

This is dedicated to KINGWANDE'S Family for the moral and spiritual support. Late father, Captain Iddi Kingwande who passed away on 6th January, 2011, may God Almighty let him rest in peace, Amen. My mother Fatuma Madenge who is still strong taking care of the family.

ABSTRACT

Health is a fundamental human right in the development of a country, and the delivery of quality healthcare services is largely supported by sound medical records management. In Tanzania the Ministry of Health established Ocean Road Cancer Institute which serves as the hub for cancer services. The Institute generates a lot of vital records and other information related to cancer which calls for prudent management. From past observations made at the Institute, it was established that there were inadequacies in the existing records management practices due to poor organization of medical records particularly in locating and retrieving of patient files required in fulfilling clinical activities. The aim of the study was to investigate the role of medical records management in supporting patient care at Ocean Road Cancer Institute and to propose strategies for improvement in the management of medical records. The specific objectives of the study were to: determine how medical records were managed at Ocean Road Cancer Institute; examine the contributions that medical records provide to patient care at the Institute; determine the integration of ICTs in the management and use of medical records in patient care; explore the challenges faced in the management of medical records at Ocean Road Cancer Institute and finally suggest strategies for improving the management of medical records in support of patient care at the Institute. The study was informed by the records continuum model founded by Frank Upward, complemented by the Chronic Care Model founded by Wagner et al. The study employed a qualitative research design techniques. The target population was 190 from which a sample size of 100 respondents was picked representing about 50% of the population. A total of 10 Records Management staff selected purposively acted as key informants. Semi structured face-to-face interviews were the main data collection instrument. Qualitative data were analysed thematically by using frequency and percentages. The study found that the support of medical records for patient care had been undermined by poor records management due to lack of medical records management policy, medical records retention and disposal schedule and poor tracking system. The study concludes that poor medical records practices had reduced on the effectiveness of medical records in supporting of patient care at the Institute. The study recommends the formulation of medical records management policy and development of medical records procedure manual and guideline, improving tracking tools for controlling movement of medical records, formulation and implementation of disaster preparedness plan.

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LIST OF ACRONYMS

ACCC	Association of Community Cancer Centres
AIDS	Acquired Immuno Deficiency Syndrome
ARV	Antiretroviral
COM	Computer Output Microfiche
COSTECH	Tanzania Commission for Science and Technology
DIRKS	Design and Implementation of Recordkeeping Systems
EDRMS	Electronic Document and Records Management System
ESARBICA	Eastern and Southern Africa Regional Branch of International Council on Archives
HIV	Human Immune-deficiency Virus
ICA	International Council on Archives
ICT	Information and Communication Technology
IRMT	International Records Management Trust
ISO	International Standard Organization
KNCCS	Kenya National Cancer Control Strategy
MNH	Muhimbili National Hospital
NARA	National Archives Records Administration
NGOs	Non-Governmental Organization
NRAMP	National Records and Archives Management Policy
ORCI	Ocean Road Cancer Institute
PSRP	Public Service Reform Programme
RAMD	Records and Archives Management Department
TB	Tuberculosis
UBC	University of British Columbia
UK	United Kingdom
W H O	World Health Organization

CHAPTER ONE

INTRODUCTION AND BACKGROUND INFORMATION

1.0 INTRODUCTION

This chapter presents the background to the study where a global, regional, national and institutional overview of the area of the research is provided. It explains why health services are given high attention globally and focuses on how medical records in both electronic and paper formats play an important role in supporting patient care.

Records have been in existence since humankind acquired the ability to record information in writing (Kamatula, 2013). Furthermore Shepherd and Yeo (2003) states that earliest keeping of records can be traced to the Ancient Civilizations when records of birth, property, law, money' tax and official and private transactions began to be kept to facilitate the conduct of government business, and for education, religion and family purposes. Records management should ensure management of public records from creation to final disposition. Organizations create records as a result of day-to-day activities which need to be captured, managed and preserved in an organized system. In addition, proper records management is important for maintaining their integrity and authenticity which retains their value as retrievable public records. Recognizing the growing importance of public records many governments in the world have been developing capacity to address the management of public records. In the United Kingdom the management of public sector records is the responsibility of the United Kingdom National Archives, formerly known as

Public Records Office. It is responsible for setting standards and supporting innovation in information and records management across the United Kingdom. It also has a role of providing a practical framework of best practice for opening up and encouraging the use of public sector information (Shepherd and Yeo, 2003).

1.1.1 Records Management

Records management can be viewed in different perspectives as far as different scholars are concerned. For instance, Magaya (2010) explain records management as; “The area of general administrative management concerned with the design and operation of programmes to achieve economy and efficiency in the creation, distribution, organizing, maintenance, retrieval, use, protecting and disposal of all types of records. On the other hand Kennedy and Schauder (1998) view records management as a systematic control of recorded information from creation to final disposal. They focused on procedures and system for creation, storage, retrieval, and disposal of an organization records and the complex issues surrounding the selection, implementation and maintenance of such system.

Penn et al, (1994) view records management as logical and practical approach to the creation, maintenance, use and disposition of records and the information that those records contain. They note that records management organization can control both the quality and quantity of the information that it creates, and can maintain them in the manner that can efficiently serves its needs, and ultimately dispose them when they are no longer valuable. The three definitions from the above scholars vary in terms of approach, focus and scope to which the management of records could be

applied. Pederson et al, (1987) for example, approach to the records management is confined in setting general administrative and management principles, while Kennedy and Schauder(1998) sought to control recorded information systematically. Pen et al, (1987) insisted on logical and practical approach to the management of records. The three scholars also differ on focus, for example, while Pederson et al, (1987) focus on achieving economy and efficiency in managing records, Kennedy and Schauder (1998) focus on setting procedures and systems in which records could be managed. Pen et al, (1987) on the other hand focus on maintaining quality and quantity of records throughout its life cycle. However; all the above scholars have the same view on the extent/scope to which records could be managed i.e. from the creation to its disposal.

1.1.2 Records Management in Tanzania

In Tanzania poor state of records keeping continued until the mid-1990s when the United Kingdom Department for International Development requested the International Records Management Trust to advise the Government of Tanzania on efficient and effective records management systems as part of the wider administrative reform programmes popularly known as Public Service Reform Programme (PSRP). The PSRP had consistently emphasized the importance of improving the quality of records management as a basis for decision making, more timely service delivery and financial savings. Since 1997, Records and Archives Management Department had been engaged in a records management improvement programme which had achieved impressive results. Records and Archives Management Department was aware that new infrastructure, policies and standards

were needed to manage the electronic records that would increasingly form part of the government's information base. A new National Records Management Policy, covering paper and electronic records was being drafted serve and as a foundation. Another key development being planned was the construction of a national records centre (IRMT, Tanzania Case Study Report-Fostering Trust and Transparency in Governance 2007).

1.1.3 Medical Records Management

Medical records are created or written when a patient comes into contact with any member of the medical staff. Notes may also be created to record contact with nurses, physiotherapists and others involved in patient care. Medical records include patient histories, diagnostic test results and temperature, blood pressure and other charts, as well as records of operations and other forms of treatment. In most hospitals, the notes about each patient are kept together in one file bearing the patient's name and other personal details. The file may also contain referral letters from health centres or family doctors and other documents relating to the patient's condition. Over a period of time, the documentation will build up to form a complete medical history of the patient. The principle of maintaining a single file for each individual patient is crucial to the continuity of patient care.(IRMT, 1999).

Besides notes created when individuals are admitted to hospital wards as in-patients, notes should also be generated when they attend as out-patients. Specialist out-patient clinics may create extensive notes about each individual. All these records need to be kept on the same individual patient's file. Accident and emergency

departments and general clinics are likely to produce fewer notes, and in some hospitals they may create no notes at all. The records created in out-patient departments will vary according to local circumstances; in general, clinic attendances produce a smaller quantity of notes per patient than ward admissions.(Ibid).

1.1.4 Medical Records Management and Patient Care

Karki (2013) states that medical record is a systematized way of storing the required data, information and other relevant documents with the objective of making easy availability of necessary data at the time of its need. Medical record consists of name of patient, address, age, sex, occupation, disease, modes of diagnosis and recommendations made there after by the concerned doctor in course of undergoing treatment. It helps patients to acquire the right and appropriate treatment. Moreover, it acts as a tool for the doctor who is looking into the patient.

Medical record is noteworthy for any country in several aspects. Since medical record contains various facts like-personal details of patient, illness, diagnosis, modus operandi used to find out the disease, seriousness of diseases, medicines being used by patients in the recommendation of his/her attending doctors and even the clear names and signature of attending doctors, the nation can attain the health relating information through check up of such medical records. He further points out that the government can avail such records in the direction of making short as well as long term health strategies. An integrated study of medical records available in all the hospitals and health centres will contribute towards knowing the health condition of people, ailment stricken areas, cause and effects of disease, availability of health

workers as well as physical facilities and resources in order of delivering the appropriate health service to the people.(Ibid).

1.1.5 Health Systems in Tanzania

According to the HSSP III Report (2009-2015) indicators on financing health workforce and service delivery there is limited progress in the strengthening of health system components. There was more money for health as total health expenditure went up, particularly from external sources in 2011-12. The government contribution reached the Abuja target of 15% during 2008-09 but has dropped to 11% since. Coverage of financial risk protection is still low, and out-of-pocket expenses made up almost one-third of total health expenditure in 2011. The health workforce situation is slowly improving but shortages of health workers continue to exist throughout the country. According to the HRHIS III Report (2009-2015), there are 5.4 per 10,000 doctors and nurse/midwives in Tanzania mainland, and 7.2per 10,000 if AMOs and clinical officers are also included. There appears to be a modest upward trend, but no reliable trend data are available. Threefold difference in health workers densities exist between regions. The output of training institutions however has increased greatly and the challenge is shifting towards absorbing the large numbers of graduates from Tanzania's 134 training institutions. Outpatient utilization rates, often considered an indicator of general access to health services, did not increase during 2009-2012 and remained at a low 0.7 visits per person per year. Service readiness, in terms of general status, diagnostics and medicine availability, improved only slightly during 2009-2012 and there is still much scope for improvement. Indicators of universal precautions for infection control in health

facilities showed deterioration. Tanzania has many policies and strategic plans, with some but not sufficient coordination. Some specific policies measures during or just prior to HSSP III (2009-2015) are having positive effects on programme coverage indicators.

1.2 OCEAN ROAD CANCER INSTITUTE, TANZANIA

The Ocean Road Cancer Institute (ORCI) is located along the Indian Ocean about 200 metres from the beach. This health facility is one of the oldest health institutions in Tanzania having been founded in 1895 by the German colonial government. At its inception, the hospital catered for the German community. After 1st World War the British Colonial government adopted a policy that concentrated on provision of medical services for the European communities. After independence in 1961, all the barriers from the colonial past were removed and the hospital was named the Ocean Road Hospital, catering for all races and operated as a maternity wing of the Muhimbili Medical Centre. In 1980, a decision was made by the Ministry of Health to make Ocean Road Hospital the hub for cancer services, whereby the Radiotherapy Unit of the Faculty of Medicine, University of Dar es Salaam was shifted from Muhimbili Medical Centre to the Ocean Road Hospital to give room for expansion.

During the period between 1980 to mid 1996, deliberate efforts were made to upgrade the Radiotherapy Unit to comprehensive Cancer Institute. In June 1996, by an Act of Parliament, Ocean Road Hospital was made an independent autonomous institute directly under the Ministry of Health and its name changed to Ocean Road Cancer Institute. The chairman of the Board of Trustees and the Executive Director

are appointed by the President of the united Republic of Tanzania. The institute has three directorates namely Medical Services, Human Resource Management and Planning & Finance. The main source of funding is from the Government of Tanzania.

The institute also receives assistance from International organizations such as IAEA, WHO, IARC, UICC, INCTR, USNCI, Open Society, IAHP. ORCI is the only National referral institution for management of cancer patients and privileged cancer research centre in the country. ORCI also provides HIV care and treatment to cancer patients as well as patients residing in the area surrounding the hospital. Approximately 1507 HIV positive adult (persons aged 15 years and older) patients have been enrolled, 1009 are female and 498 male. The Institute also implements and monitors community tumor registry, both at site and off-site through satellite data collection points in Dar-es-Salaam and in few bordering regions. The main entry points for the cancer data are Tumbi Hospital in Coast region, Muhimbili National Hospital and Ocean Road Cancer Institute in Dar es Salaam. The main office of the project is at Ocean Road Cancer Institute.

1.2.1 Vision Statement

To become a centre with national, regional and international reputation for excellence in cancer control.

1.2.2 Mission Statement

To provide equitable, accessible, affordable and high quality services for early detection and cancer care to the public through prevention, research, education and treatment using modern technology and dedicated staff.

The main goals of ORCI are:

- To significantly reduce cancer incidence, morbidity and mortality in Tanzania.
- To achieve cost-effective resource utilization for cancer management in the country.

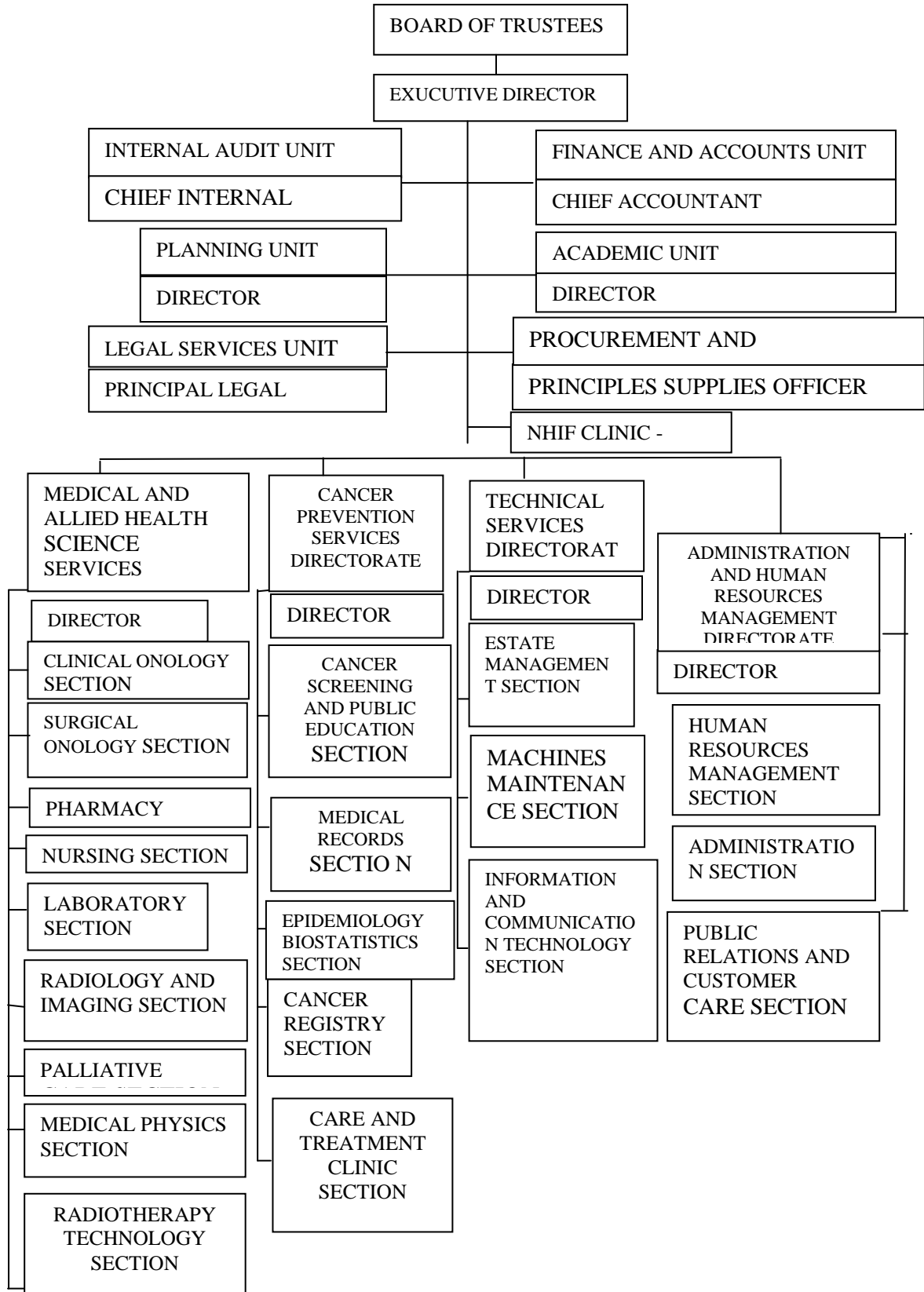
1.2.3 Functions of ORCI include:

- i. To control and manage the institute and also assume responsibility for control and management of hospitals and health facilities as may be vested in the Institute by order published in official gazette.
- ii. To improve medical care to inpatients and outpatients affected with cancer and other diseases in accordance to medical ethics.
- iii. To stimulate and promote programs on health and particularly on cancer
- iv. To conduct training programs.
- v. To provide consultancy services.
- vi. To perform research activities with or without association with person or institution inside or outside Tanzania.
- vii. To do any act for the purpose of achieving any of the above functions.

The institute provides inpatient and outpatient services in the following areas:

- Treatment with radiation (radiotherapy).
- Treatment with cytotoxic drugs (chemotherapy).
- Palliative care services (pain relief using oral morphine, counseling and spiritual services).
- Diagnostic imaging with X-rays, Ultrasound, Mammography and Nuclear medicine.
- General laboratory services.
- Histopathology services.
- Cancer registration.
- Cervical and breast cancer screening at ORCI.
- Cervical and breast cancer screening outreach program in the regions.
- Care and treatment clinic for HIV/AIDS patients.
- Teaching programs for Bsc Radiation Therapy Technology and Master of Medicine in Clinical Oncology.
- Teaching undergraduate and postgraduate medical students as well as other health care workers.
- Research projects in various aspect of cancer.

It should be noted that Tanzania has a cost- sharing policy for health services but cancer patients are exempted from paying user fees.



Source: Ocean Road Cancer Institute

Figure 1.0: The Proposed Functions and Organisation Structure of ORCI

1.3 STATEMENT OF THE PROBLEM

Records document the decisions and activities of governments and private institutions and serve as a benchmark by which future activities and decisions are measured. IRMT (1999) points out that inadequate control of records has consequences for all citizens especially for the poorest who are least able to defend themselves in absence of records. Indeed public health depends upon well kept and well-managed records. However, clinical practitioners and records management professionals are required to make and keep records of their professional practice in accordance with standards of practice of their profession and organizational policy and procedure. Legislation helps to identify and require specific information and content to be recorded and maintained. IRMT (1999) further points out that records management is becoming increasingly dependent on ICTs as governments migrate to digital environment. Records in electronic form are providing the basis for conducting business, and protecting peoples' rights.

Ocean Road Cancer Institute generates a lot of vital records and other information related to cancer which calls for prudent management. However, the institute lacks efficient systems for controlling and managing medical records for its patients and other research work on cancer management. This negatively affects patients who attend at the Institute and also undermines informed decision making on health related issues. Furthermore, IRMT (1999) points out that all aspects of health services rightly depend upon well-kept and well-managed records. From past observations conducted at the Institute, it was established that there were poor

medical records management in the Institution particularly in locating and retrieving of patient files which were important in fulfilling clinical activities. Moreover, the inadequacies have resulted into misplacement and loss of files and long waiting hours for patients to get services. This made the ordinary Tanzanian unable to get the desired health care services.

The problem of poor records management at the Institution therefore presented a potential research area that needed intensive and extensive investigations. It was against this background that this study attempted to investigate the role of medical records management in support of patient care at Ocean Road Cancer Institute Dar es Salaam, Tanzania.

1.4 THE AIM OF THE STUDY

The aim of the study was to investigate the role of medical records management in support of patient care at Ocean Road Cancer Institute and to propose strategies for improvement in the management of medical records.

1.5 OBJECTIVES OF THE STUDY

The objectives of the study were to:

- I. Determine how medical records are managed at Ocean Road Cancer Institute.
- II. Examine the contributions that medical records management provide to patient care at the Institute.
- III. Determine the integration of ICTs in the management and use of medical records in patient care.

- IV. Explore the challenges faced in the management of medical records at Ocean Road Cancer Institute.
- V. Suggest strategies for improvement of medical records management in supporting patient care at the Institute.

1.6 RESEARCH QUESTIONS

To address the above objectives the study sought to answer the following question

- I. How are medical records managed at Ocean Road Cancer Institute?
- II. What contributions does medical records management provide towards patient care at the Institute?
- III. To what extent is ICTs applied in the management and use of medical records in patient care?
- IV. What challenges are faced in the management of medical records in patient care?
- V. What strategies can be suggested for improvement of medical records management in supporting patient care at the Institute?

1.7 ASSUMPTIONS OF THE STUDY

- I. Poor medical records management practices at Ocean Road Cancer Institute are one of the factors that undermined the quality of patient care at the Institute.
- II. Improvement of medical records management will have a positive impact on patient care at Ocean Road Cancer Institute.

1.8 SCOPE AND LIMITATION OF THE STUDY

1.8.1 Scope of the Study

This study was conducted at Ocean Road Cancer Institute, Dar es Salaam, Tanzania and was largely focused on Medical records based at the institute and not the field records.

1.8.2 Limitation of the Study

Because of the sensitive nature of medical records in general and cancer patient in particular the researcher faced reluctance from Institution's custodians and staff in volunteering information. However the researcher explained to them that the information collected was to be purely used for academic purposes and would not be diverged to any unauthorized personnel and finally cooperated by the researcher.

1.9 SIGNIFICANCE OF THE STUDY

1.9.1 Practical Significance within the Institution

The findings of the study are likely to have positive impact to the Ocean Road Cancer Institute, record staff and clinical officers to know the importance of medical records management and improving the patient care. The study was involved the following objectives; Determine how medical records are managed at Ocean Road Cancer Institute; Examine the contributions that medical records management provide to patient care at the Institute; Determine the integration of ICTs in the management and use of medical records in patient care.; Explore the challenges faced in the management of medical records at Ocean Road Cancer Institute and finally Suggest strategies for improvement of medical records management in

supporting patient care at the Institute. Therefore the sums of the findings are enforcing the significance of medical records management and likely to serve as a basis for further research in area of medical records management.

1.9.2 Theoretical Significance

The findings of the study are expected to add more knowledge on the role of medical records in supporting patient care by providing empirical data that show the link between medical records and patient care. Therefore the study helps to provide as an empirical study since there was no study that done in Tanzania related to medical records management in support patient care.

1.9.3 Policy Related Significance

The study findings could be used to sensitize policy makers on the importance of medical records hence this may trigger the form of policy on medical records. The sum of these findings can enforce the formulation of policies related to medical records management.

1.10 CHAPTER SUMMARY

This chapter provided the introduction and background information to the study, statement of the problem, aim of the study, objectives of the study, research questions, assumption, scope and limitation, significance of the study and definition of operational terms. The chapter also provided information that set the pace for the study and served as the basis for subsequent chapters.

1.11 DEFINITION OF OPERATIONAL TERMS

Cancer, malignant growth or tumor which develops in tissue and destroys it, which can spread by metastasis to other parts of the body and which cannot be controlled by the body itself.

Case files, files that are similar in content but relate to different individuals, organizations, projects, places, events, items of equipment or other common characteristics.

Health Record, single record of all data on an individual's health status - including birth records, immunizations, reports of all physical examinations as well as all illnesses and treatments given in any health care setting.

Master Patient Index, list of all patients admitted to a health care facility and is the key to locating a patient's medical record. Master Patient Index Contains identification information.

Medical Records, a collection of facts about a patient's health history including past and present illness (es) and treatment(s) written by the health care professional treating the patient.

Medical Records Number, the number used to identify the patient's medical record and used to file the medical record, also referred to as Hospital number, Identification Number or Unit Record Number.

Number Register, a book of numbers in strict numerical order and is the origin of the patient identification numbering system.

Patient Care, patient Care is the coordination of healthcare services to meet the needs of an individual or a population of patients. It is a process, which assesses plans, implements, coordinates, monitors and evaluates options and services to meet an individual's health needs .

Patient Case notes, information created or written when a patient comes into contact with any member of the medical staff. Notes may also be created to record contact with nurses, physiotherapists and others involved in patient care.

Records Management, the area of general administrative management concerned with the design and operation of programmes to achieve economy and efficiency in the creation, distribution, organizing, maintenance, retrieval, use, protecting and disposal of all types of records.

X-rays, films are large-size photographic records produced for diagnostic purposes in response to a request from a clinician.

CHAPTER TWO

LITERATURE REVIEW

2.0 INTRODUCTION

This chapter discusses the literature review and the theoretical framework suitable for this study namely, Records life-cycle Model, Records Continuum Model and Chronic Care Model. The University of Washington Psychology Writing Centre (2010) states that Literature reviews survey research done in a particular area. Although they also evaluate methods and results their main emphasis is on knitting together theories and results from a number of studies to describe the "big picture" of a field of research. A literature review is a survey of everything that has been written about a particular topic, theory, or research question. It may provide the background for larger work or it may stand on its own. Much more than a simple list of sources, an effective literature review analyzes and synthesizes information about key themes or issues.

Mugenda (2008) states that the review should describe, summarize, evaluate and clarify literature. It should give a theoretical base for the research and help the author determine the nature of the research. Literature review enables the researcher to determine what has been done that is related to the present study and the kind of additional data needed so as to avoid unnecessary duplication. It helps the researcher to re-define the research topic; sharpens and deepens theoretical foundation of the research; and helps the researcher to identify any findings from other studies that can be validated by his/her study. Wide reading demanded by the process of reviewing the literature increases the researcher's confidence in conducting the study by giving

him/her a firm grip and clear understanding of the major issues and development in the area of study.

Randolph (2009) argue that literature review plays a role in; delimiting the research problem, seeking new lines of inquiry, avoiding fruitless approaches, gaining methodological insights, identifying recommendations for further research and seeking support for grounded theory. Hart (1998) gives additional reasons for reviewing the literature including: distinguishing what has been done from what needs to be done; discovering important variables relevant to the topic; synthesizing and gaining a new perspective; identifying relationships between ideas and practices; establishing the context of the topic or problem; rationalizing the significance of the problem; enhancing and acquiring the subject vocabulary; understanding the structure of the subject; relating ideas and theory to applications; identifying the main methodologies and research techniques that have been used and placing the research in a historical context to show familiarity with state-of-the-art developments.

2.1 THEORETICAL FRAMEWORK

A theoretical framework mainly guides a research by determining what things to measure and what statistical relationships to look for (Kombo & Tromp 2006). Furthermore, Mbugua (2012) points out that a theoretical framework plays a major role in research as it enables the researcher to understand the total realm of the research problem from a wider perspective rather than from a narrow personalized self approach. It seeks to make clear why things are the way they are using theories.

Theories can also be explained in the form of Models. A model is a simplified representation of a real situation in graphic form. It seeks to show the main features of a structure or process and the relationship between these features making it easier to understand a situation that would otherwise be complicated. There are various models that have been developed which are related to this study. They include; Records life-cycle Model, Records Continuum Model and Chronic Care Model.

2.1.1 Records Life-Cycle Model

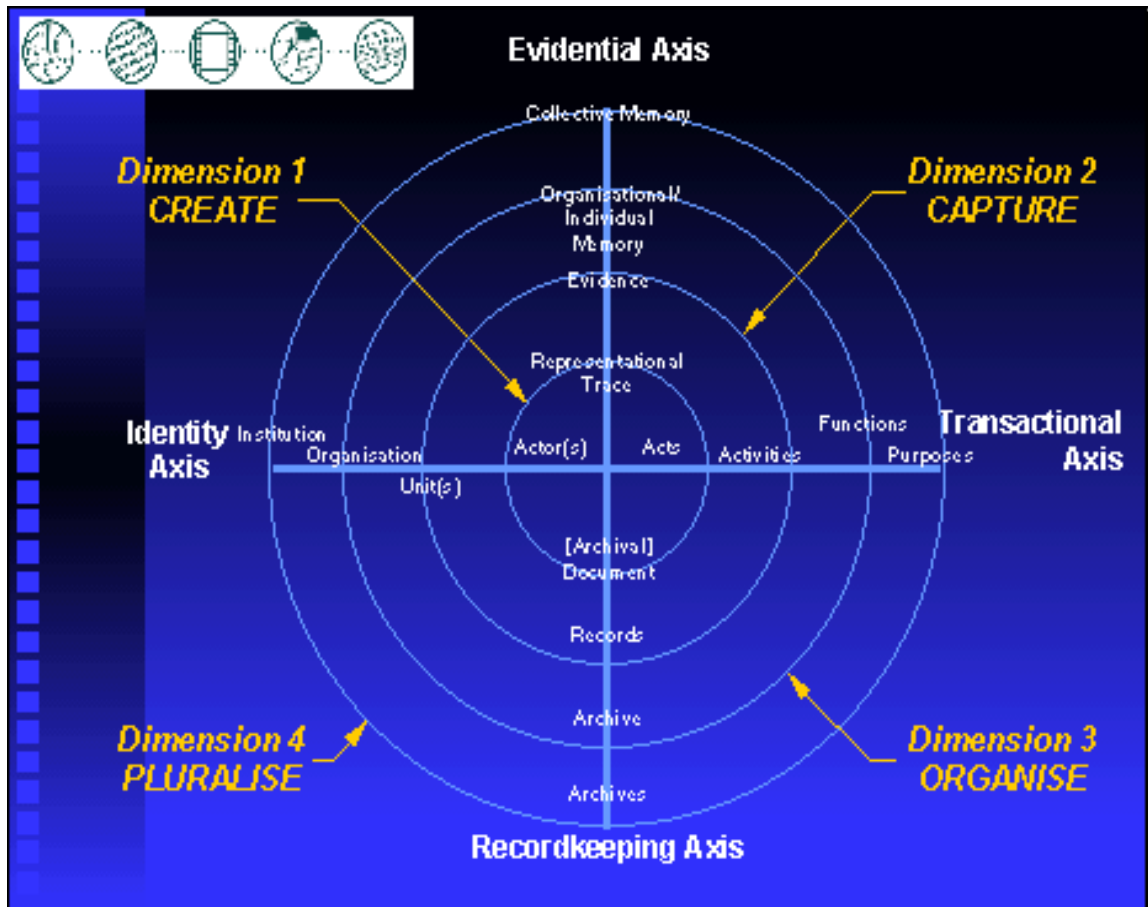
The records life cycle concept for managing records has been the prominent model for North American archivists and records managers since 1960s as articulated by Schellenberg who wrote about the life span of records (Kamatula, 2013). The theory portrays that recorded information has a life similar to that of a biological organism in that, it is born (creation phase), it lives (maintenance and use phase) and it dies (disposition phase) (Penn et al, 1994). Shepherd and Yeo (2006) have referred to the three phases as the current stage (when records are actively used for business transactions); semi-current stage (when their business value is reduced); and a non-current stage (when they have little or no business value). This theory assumes that records are initially kept for organizational value. But records may be transferred to archival custody when they are no longer active and have a reason to be preserved due to their endless value such that they may be useful for future research purposes. Moreover, it is important to note that the life cycle model clearly sets a demarcation of responsibilities between the archives and records management professions. During the records current and semi-current stage records managers at the creating agent are responsible for managing records whereas at the non-current stage. The

archivist takes over to preserve, describe and provide access to public records. Generally, the life cycle model of records is simple to understand and practice so long as the organization keeps abreast with regular updates on the standards for records management systems. This model seems to be not relevant to this study because it focuses much on paper records rather than integration of both paper as well as electronic records. However, the researcher describes this model because it is the founder of the records management model.

2.1.2 The Records Continuum Model

The records continuum model formulated by Frank Upward in the 1990s was considered relevant to the study. The Model borrowed from earlier views of the continuum concept for example, by Ian McLean 1950's and Jay Atherton in 1985. Ian McLean was of the view that records managers are the true archivists and that archival science should be directed towards studying the characteristics of recorded information, recordkeeping and classification systems (Xiaomi, 2003). The Model as formulated by Upward consists of four dimensions which include; create, capture, organize and pluralize. According to Shepherd and Yeo (2003) the first dimension encompasses the actors who create records resulting from the business activities; the second dimension encompasses the capture of records as evidence of business transactions or activities; the third dimension focuses on the recordkeeping systems to manage records in an organization and the fourth dimension views records as useful in meeting the needs of the society and other forms of collective memory. Upward (2000) argues that in the continuum concept recordkeeping is a continuing process that does not separate the life of records in time and space. Upward further

describes the Records Continuum Model as the new roadmap to managing electronic records. With the emergence of electronic records concern is raised that lack of a strategy for active and early intervention by the archivists and records managers in the records management process, electronic records documenting vital transactions may never be created or survive (Bantin, 2001). This contributed to widespread support of the Model. The records continuum regime model as internationally recommended best practice model is applied as the approach for managing documents, records and archives. Such a model should employ an interdisciplinary approach to develop integrated frameworks and integrated control through documents management, records management and archives management and through business management along the life of the records to ensure accuracy, authenticity, reliability and integrity of records.



Source; Frank Upward (2000)

Figure 2.1: .Records Continuum Model

2.1.3 The Chronic Care Model (CCM)

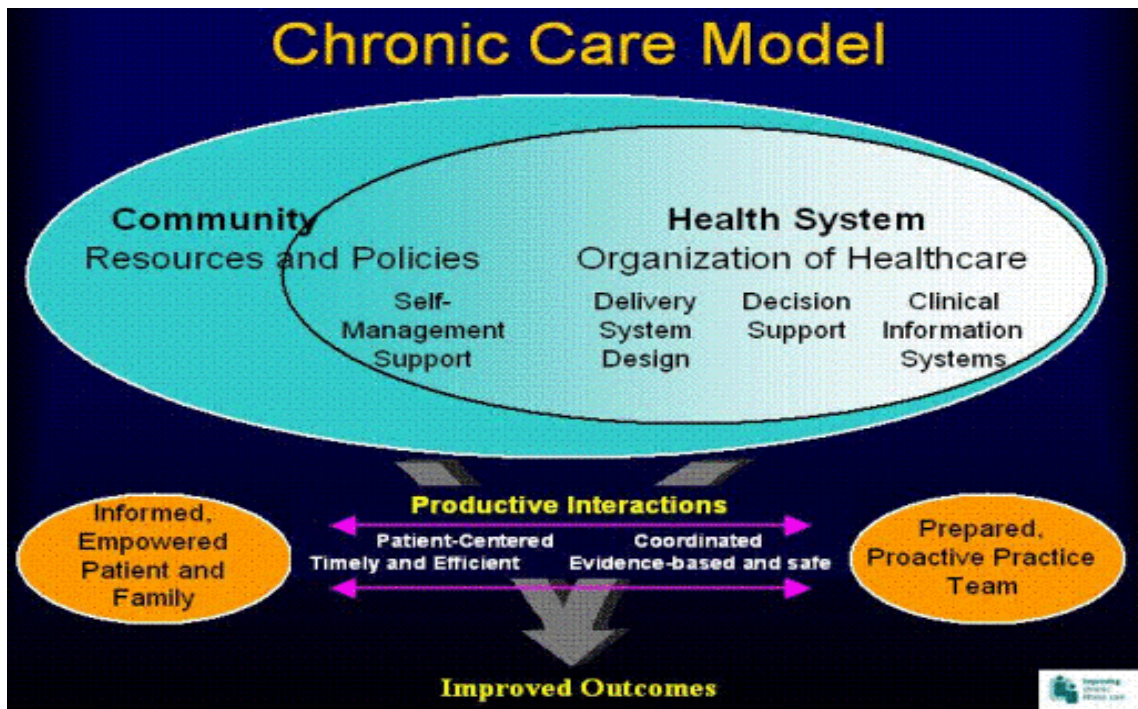
The Chronic Care Model (CCM) is an organizing framework for improving chronic illness care and an excellent tool for improving care at both the individual and population level. The model is based on the assumption that improvement in care requires an approach that takes into account patient, provider and system level interventions. The CCM consists of six distinct concepts identified as modifiable components of healthcare delivery: organizational support, clinical information systems, delivery system design, decision support, self-management support, and

community resources. While the first four concepts in the CCM address practice strategies, the final two are specifically patient centred. Either chronic disease management or practice improvement can be based on each of the concepts separately or on the model as a whole. These six fundamental areas of the Chronic Care Model can be applied to a variety of chronic illnesses, patient and health care settings and target populations (Wagner et al, 1999).

The ideal practice has a culture where the optimal management of chronic illness and practice improvement are key values. Ideal practice leadership is committed, visibly involved supports change, quality improvement, creates incentives for providers, patients to improve care and adhere to evidence-base practice. According to Wagner et al, (1999) practice improvement is not possible without data on trends in individual patients and the health of the practice population. Clinical Information systems (CIS) are structured to organize patient, population and provide data to describe the health of the population and to facilitate efficient and effective care. Clinical information systems provide information about individual patients (for example, trending data regarding physiologic parameters etc.), as well as data regarding populations of patient.

Wagner et al, (1999) state that the Clinical Information systems (CIS) include a disease registry that identifies the population and include information about provide performance of guidelines. In the CCM the information system may also include a registry regarding patient-specific needs and reminder systems that may be able to generate tailored treatment planning or encounter forms, or produce tailored patient

or provider messages to facilitate care or self-care. A critical component of the CCM model is self-management support that emphasizes the need for patient-centred interventions. These interventions can include tailored education resources, skills training, psychosocial support and collaboration between provider and patient to define problems, set priorities, establish goals, identify barriers, create treatment plans and solve problems. The goal of self-management support is to empower and prepare patients to manage their health and healthcare



Source: Wagner et al, (1999)

Figure 2.2: Chronic Care Model

2.2 RELEVANCE OF THE RECORDS CONTINUUM AND CHRONIC CARE MODEL (CCM) TO THE PRESENT STUDY

This study was based on a triangulation of the Records Continuum Model and Chronic Care Model. Triangulation is the combination of methodologies in the study of the same phenomenon. It is the use of multiple theories in tandem to study an organizational phenomenon. It mixes theories, methods and multiple data sources to strengthen the credibility and applicability of findings (Hoque, 2006). According to Marchall (2000) the records continuum's primary focus is the multiple purposes of records. It aims for the development of recordkeeping systems that capture, manage and maintain records with sound evidential characteristics for as long as the records are of value to the organization. It promotes the integration of recordkeeping into the organizations' business systems and processes.

Within the view of the continuum concept an archival document can be retrieved and returned to a current status just as newly created records. This scenario is more practical in the health sector whereby inactive record may be returned to current use. However, capturing and using individual patient information in an Electronic Medical Records is in some ways the last frontier of health information professionals. Records continuum model can be responsible for capturing aggregate medical data from clinics for use in disease surveillance and health status.

The Chronic Care Model provides clear and holistic services for patient care. This model provides blueprint within which the function of records management can be evaluated as a tool for patient care. The Chronic Care Model's presentation is such

that it advocates for establishment of patient care frameworks across the health sector by explaining Clinical Information Systems that underpin patient's care right from the first patient contact with clinical staff to post treatment surveillance. This information can be generated through different process which includes: Diagnostic Pathways, Treatments, Post Treatment Surveillance, Palliative Care, Education (Community & Health Professionals) etc. The Records Continuum Model and Chronic Care Model also address the needs that have to be met by the objectives of the study. For instance, the CCM's broad objective is developing an organizing framework for improving chronic illness care and an excellent tool for improving care at both the individual and population level. This is essential in understanding the nature of business activities of health institution and the services that are provided in course of delivering patient care. The broad objective of the Chronic Care Model ties well in line with the second objective of the study; contributions do medical records management provide towards patient care at the Institute. The approach given by the Chronic Care Model to Records management is a holistic one that integrates Information Systems within the business activities other than seeing patient care in isolation. This approach was very close to the aim of the study because the study was viewing medical records management as an integral part of patient care.

2.3 NATURE OF RECORDS

Though all records convey information still not all sources of information are necessarily records. For example, a published book or an externally provided database (on- or offline) will not be a record, although information selected from it and reused in a new context may itself become a record. Majinge (2011) points out

that record arise from actual happenings; they are a ‘snapshot’ of an action or event. They offer a picture of something that happened. Duranti (1998) observes that records as an asset play a crucial role in most human endeavours and they are essential to all of our business and social interactions. Government functions and accountability, medical treatment and scientific research all depend on records. According to IRMT (1999) records have four important qualities or characteristics that include static in form; they have authority; they are unique and they are authentic.

2.3.1 Records are Static

Mhina 2009 states that during the process of creating a record a document will go through a phase of development and change. For example, minutes of a meeting will be produced in draft form and reviewed by the members of the committee before being approved. Once this process of creation or drafting is finished and the document is considered complete it may be regarded as a record. In order to provide evidence the record must now be fixed and must not be susceptible to change. If a record is changed or manipulated in some way it no longer provides evidence of the transaction it originally documented. If someone alters the minutes of a meeting after they have been approved the minutes can no longer be considered an accurate record of the meeting (IRMT, 1999). International Council on Archives (2004) further points that records must possess adequate content, contextual and structural metadata to be self-evident and to facilitate understanding of a particular transaction.

2.3.2 Records Have Authority

Records provide the ‘official’ evidence of the activity or transaction they document.

Records must be reliable and trustworthy. The reliability of a record is linked to its creation. Signatures, letterheads, seals and office stamps are obvious indicators of the official nature of records. However, not all records have official stamps or seals. The continuous safekeeping of records can also protect their reliability. If the official version of the minutes is filed by the records manager and thus protected from change, the unauthorized version will not form part of the official record. The authority of the official version will remain intact (IRMT, 1999).

2.3.3 Records are Unique

Mount Holyoke College 2004 states that records are unique in the sense that they maintained in their appropriate context. They are a component in a unique compilation or sequence of transactions. Records are not isolated bits of information; they have meaning because they are generated during a particular transaction or business process. Records make sense within the context of the overall functions and activities of the individual or organization that created or used them. They have a relationship with other records that makes them unique. The minutes may not be 'unique' in that there may be ten copies made available to all members of the committee. But the minutes are unique within the context of that organization because the official copy represents one event – the meeting – that only took place with those committee members on that day at that place. Copies of a record may be unique within another context (IRMT, 1999).

2.3.4 Records are Authentic

It must be possible to prove that records are what they say they are. The authenticity of a record is derived from the record-keeping system in which it was created or

received, maintained and used. A record is authentic if it can be verified that it is now exactly as it was when first transmitted or set aside for retention. For example, a letter received in an office may be date-stamped, registered and placed on a file. The file containing the letter is tracked throughout its use and stored when not in use in a records office. Records today may be produced in a range of systems and stored in a range of media, including paper and electronic forms; different versions may be stored in different media in different locations. One of the dangers today with the advent of sophisticated information technologies such as computers is that information can be extracted from the record that originally conveyed it and taken out of its context (IRMT, 1999). A record must be captured during or immediately after a transaction occurs to avoid any details being lost which may affect subsequent retrieval. At this point, in the electronic environment metadata needs to be added to identify and define documents, providing its context, its purpose, where it is located and the (automatic) management of its retention and disposal (Currall et al., 2002).

2.4 USES OF RECORDS

Within both government and the private sector records are created and used on a daily basis to document actions, confirm decisions, identify rights and responsibilities and communicate information. Roper & Millar (1999) state that without records governments and businesses today would not operate. It is no longer possible to 'remember' vast quantities of information without creating an independent account in a record. Governments use records for such wide-ranging purposes as documenting the work of employees; confirming pensions; leave and health benefits; confirming or reviewing policies and procedures; confirming

citizens' rights such as benefits of land ownership and providing information about past actions or decisions. On behalf of the citizens of a country government employees rely on records to provide core information for conducting their public business. While many of those records do not need to be kept permanently a small but significant portion has enduring value. It is this portion of a government's records that are preserved within public archival institutions. Together with a country's National Library, National Museum and other national institutions. The National Archives is one of the country's essential research resources. Users visit it from all sectors. Other government archival facilities such as state or provincial archival institutions or private-sector archival facilities in businesses or associations are equally important research resources. Typical users in national and other archival institutions include government representatives requiring information about government activities, professional or academic researchers from a wide range of disciplines, journalists, amateur researchers, genealogists, members of the public, others wishing to have some contact with the primary sources of their national culture and tradition and anyone with an urgent problem that can only be solved by referring to records. Equally, corporate organizational or local archival institutions hold records of research use to a wide variety of people (IRMT, 1999).

Roper and Millar (1999) state that an archival institution - national, local or corporate is useful not just to the nation and its citizens but there is international interest in the health and efficiency of a country's archival repository and the records it protects. Many issues documented by public and private records are of international concern. Examples of such issues that are documented by records that

should be accessible most likely in a National Archives include citizenship rights and responsibilities; medical and health concerns; environmental issues; resource management; intergovernmental politics and economic planning. A significant number of users of any national or other major archival institutions are researchers from other countries. Mtowa (2012) emphasizes that this use of archival facilities will continue to grow in importance as international information networks develop and as the international community increasingly recognizes its need to share information about culture and heritage.

Africa health strategy (2007 – 2015) indicates that the alarming rate of growth of the burden of both death and disability from non communicable diseases in Africa is ever more recognized with chronic diseases becoming ever more prevalent, linked to demographic, behavioural and social changes and urbanization. Hypertension, stroke, diabetes, chronic respiratory disease and the consequences of tobacco use, alcohol abuse and illicit drugs, are growing as serious public health challenges. Injuries from violence, wars, traffic accidents and other mostly preventable causes result in widespread death and physical disability, while the impact of mental ill-health has previously been underestimated. Sickle Cell Disease is the most prominent genetic disorder while the prevalence of specific cancers is extremely high in some parts of the continent. The study further shows that the high disease burden continues because health systems are too weak and services too under-resourced to support targeted reduction in disease burden and achieve universal access; health interventions often do not match the scale of the problem; people are not sufficiently empowered to improve their health nor adequately involved. While cultural factors play a role in health

seeking behaviour the benefits of health services do not equitably reach those with the greatest disease burden. There is widespread poverty, marginalization and displacement on the continent. Insufficient action on the intersectoral factors impacting on health; environmental factors and degradation are not sufficiently addressed (Africa health strategy (2007 – 2015)).

2.5 RECORDS MANAGEMENT

Nengomash (2009) states that records management can be viewed in different perspectives as far as different scholars are concerned. For instance, Magaya (2010) explain records management as; “The area of general administrative management concerned with the design and operation of programmes to achieve economy and efficiency in the creation, distribution, organizing, maintenance, retrieval, use, protecting and disposal of all types of records. On the other hand Kennedy and Schauder (1998) view records management as a systematic control of recorded information from creation to final disposal. They focused on procedures and system for creation, storage, retrieval, and disposal of an organization records and the complex issues surrounding the selection, implementation and maintenance of such system.

Penn et al, (1994) view records management as logical and practical approach to the creation, maintenance, use and disposition of records and the information that those records contain. They note that records management organization can control both the quality and quantity of the information that it creates, and can maintain them in the manner that can efficiently serves its needs, and ultimately dispose them when

they are no longer valuable. The three definitions from the above scholars vary in terms of approach, focus and scope to which the management of records could be applied. Pederson et al, (1987) for example, approach to the records management is confined in setting general administrative and management principles, while Kennedy and Schauder(1998) sought to control recorded information systematically. Pen et al, (1987) insisted on logical and practical approach to the management of records. The three scholars also differ on focus, for example, while Perderson et al, (1987) focus on achieving economy and efficiency in managing records, Kennedy and Schauder (1998) focus on setting procedures and systems in which records could be managed. Penn et al, (1987) on the other hand focus on maintaining quality and quantity of records throughout its life cycle. However; all the above scholars have the same view on the extent/scope to which records could be managed i.e. from the creation to its disposal

2.5.1 Benefits of Records Management

Magaya (2010); NARA (2005) state that records management govern the practice both of records managers and of any person who creates or uses records in the course of their business activities. Records management in an organization includes;

- i. Setting policies and standards;
- ii. Assigning responsibilities and authorities;
- iii. Establishing and promulgating procedures and guidelines;
- iv. Providing a range of services relating to the management and use of records;
- v. Designing, implementing and administering specialized systems for managing records;

- vi. Integrating records management into business systems and processes.

Currall et al, (2002) point that records management systems are put in place to provide cost-effective creation, exploitation and access to the records of an organization. It enables cost reduction or containment, legal protection, disaster recovery, efficient storage, effective retrieval and maximizes information use and value.

Magaya (2010) states that records contain information that is a valuable resource and an important business asset. He further adds that systematic approach to the management of records is essential for organizations and society to protect and preserve records as evidence of actions. Ham, (1983) points out that a records management system results in a source of information about business activities that can support subsequent activities and business decisions as well as ensuring accountability to present and future Stakeholders.

2.6 MANAGEMENT OF MEDICAL RECORDS

Good medical care relies on well-trained doctors and nurses and on high-quality facilities and equipment. Good medical care also relies on good record keeping. Without accurate, comprehensive up-to-date and accessible patient case notes medical personnel may not offer the best treatment or may in fact misdiagnose a condition which can have serious consequences. Associated records such as X-rays, specimens, drug records and patient registers must also be well cared for if the patient is to be protected. Good records care also ensures the hospital's administration runs smoothly: unneeded records are transferred or destroyed

regularly; keeping storage areas clear and accessible; key records can be found quickly; saving time and resources. WHO (2006) states that the medical record has four major sections: administrative which includes demographic and socioeconomic data such as the name of the patient (identification), sex, date of birth, place of birth, patient's permanent address, and medical record number; Legal data including a signed consent for treatment by appointed doctors and authorization for the release of information; Financial data relating to the payment of fees for medical services and hospital accommodation; Clinical data on the patient whether admitted to the hospital or treated as an outpatient or an emergency patient.

According to IRMT (1999) hospital records provide evidence of the hospital's accountability for its actions and they form a key source of data for medical research, statistical reports and health information systems. It is still common in many hospitals to give department total autonomy in the management of its records. Unfortunately, this decentralization of records care often leads to poorly designed filing systems, loss of information, premature destruction or unnecessary retention of records and ultimately to inefficiency and wasted resources. Above all, patient care will be adversely affected if correct records are not maintained or if records are inadequately managed or if there is no means of co-coordinating the care the same patient receives in different departments.

A structured and effective records management programme, covering all departments and all records irrespective of media, should be the aim of every hospital. A comprehensive records programme will help to ensure that staffs have

access both to clinical information and to administrative records on a wide range of issues, including policy, precedents, legal rights and obligations, personnel, finance, buildings, equipment and resources. Besides controlling records needed for current business, the programme will ensure that the hospital can meet its legal and financial obligations and can defend its actions when necessary. Furthermore medical records are regarded as important source of information because they have a variety of uses, patient care management, quality review, claim filing, legal interests of the parties, education, research, public health, entrepreneurial by providers. According to Goodell (2009) care management is a set of activities intended to improve patient care and reduce the need for medical services by helping patients and caregivers more effectively manage health conditions. This synthesis reviews the evidence on care management and its ability to improve patient care and reduce costs. The 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.

Medical records 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. WHO (2006) states that it is important to note at this time 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.

2.6.1 Filing Systems and Methods

WHO (2006) states that there are two types of medical record filling systems: a decentralized medical record filling system and centralized medical record system, under a decentralized medical record system, inpatient and outpatient departments have their own individual medical records and should file them independently. Inpatient medical records are filed in the Medical Record Department and outpatient medical records are filed in the Outpatient Department. There is usually NO connection between the services. If a patient has two medical records, they are NOT combined, under a centralized medical record system, all medical records about a patient, whether inpatient or outpatient, are filed together in the one folder and kept in the Medical Record Department. That is a patient has one medical record regardless of the number of times he or she has been admitted or attended the Outpatient Department. Filing is one of the most important procedures in a Medical Record Department. If medical records are not correctly filed, the record may not be found when needed. Whether using a centralized or decentralized medical record system, there are three types of filing methods used in hospitals:

- Alphabetical filing,
- Straight numeric filing,
- Terminal Digit Filing.

2.6.2 Medical Record Numbering

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. Furthermore, WHO (2006) points out that the patient must be 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. The Medical record number is a permanent identification number assigned in straight numerical sequence by the admission staff and is recorded on all medical record forms relating to that particular patient. An important point is that this number is then used to file the medical record. Thus, it is important that the number is correctly assigned and recorded on all forms in the patient's medical record.

2.6.3 Terminal Digit Filing

Terminal digit filing is a simple and accurate filing method that makes it easier for clerks to file. This method of filing is designed for large acute care facilities and is not appropriate for medical record systems in small population where the volume of medical records to be filed is low. Terminal digit filing is used to spread medical records evenly throughout the filing room. It is used in facilities where the volume of medical records is large and enables the distribution of work between a number of

clerical staff. In this method, numbers are allocated in the same way as for straight numeric filing. The difference is how they are filed. A six-digit number is generally used and divided into three parts e.g., the number 345678 is divided as 34-56-78 with each part containing two numbers. The last two numbers on the right-hand side (78) are called the primary digits (that is, the first two digits considered when filing). The middle two digits (56) are called the secondary digits (the second set of digits to be considered when filing). The two digits on the left-hand (34) are the tertiary digits (the third and last set of digits to be considered when filing). Medical records should not be filed alphabetically (WHO, 2006).

2.6.4 Middle Digit Filing

Middle digit filing is a variation of terminal digit filing. It assigns digits on the right side of the series as tertiary. But the middle and left digits are referred to as primary and secondary respectively. The advantage of this system compared to others is that color coding can be easily applied. The disadvantage is that as a patient, your numbers are only limited to six digits for easy division into primary, secondary and tertiary digits.

09-82-28

S p T

07- 02- 29

S p T

26 -91- 29

S p T

2.6.5 Legal Aspect of Medical Records

Hospital record is the property of the hospital or the doctor. It is confidential information and cannot be released without doctor's permission. Any information from the patient's medical records should be released on written request from the patient, for instance, to employer or to insurance company. Police authorities and

court can summon medical records under the due process of law (IRMT, 1999). ISO 15489-1(2001) points out that organizations need to identify the regulatory environment that affects their activities and requirements to document their activities. The policies and procedures of organizations should reflect the application of the regulatory environment to their business processes. An organization should provide adequate evidence of its compliance with the regulatory environment in the records of its activities.

2.6.6 Policy on Retention of Medical Records

WHO (2006) notes that when developing a retention policy it is important to remember that medical records should be kept by the hospital as long as required under the Statute of Limitations (retention for legal requirements) or the country's record retention regulation. Before determining a retention policy, the hospital administrator should review the record usage after discharge. Some questions that need to be answered include: how long should medical records be kept after the last visit of the patient? are there separate rules for children's records? if medical records are not kept, how are records to be destroyed? are there specific diseases for which the medical record must be kept for the life of the patient? what penalties are provided for breaking the rules, who approves the destruction of medical records? In general, the retention of medical records in an active file depends on the amount of filing space available and the yearly expansion rate of current files.

WHO (2006); (2007) state that there is no general retention policy and individual hospitals/health care facilities or governments should determine how long medical

records will be kept. When considering such a policy, the hospital/government must consider: the readmission rate of inpatients; the volume of medical research undertaken by hospital staff; the Statute of Limitation (legal requirement); cost involved in finding inactive filing space; cost of alternative storage e.g. microfilming, optical disk or other computerized system; and cost of destruction of medical records. Once the retention policy has been determined and the decision to destroy inactive medical records is made, the next step would be to develop a policy on how they are to be destroyed and what needs to be retained. ISO 15489-1(2001) points out that records systems should be capable of facilitating and implementing decisions on the retention or disposition of records. It should be possible for these decisions to be made at any time in the existence of records, including during the design stage of records systems. It should also be possible, where appropriate, for disposition to be activated automatically. Systems should provide audit trails or other methods to track completed disposition actions.

2.6.7 Policy of the Destruction of Medical Records

In many countries, when medical records are destroyed after the required retention period basic information is retained permanently. This information includes the; patient's full name and date of birth, admission and discharge dates, name of the attending doctor, diseases treated and operations performed and a discharge summary for each admission if more than one have a permanent record of the patient on file, a note should be included with the retained documents stating that the records have been destroyed according to the retention policy. If it is the policy to destroy

inactive medical records they should be destroyed by burning to ensure that the medical records are completely destroyed (WHO, 2006).

2.6.8 Security of Medical Records

ISO 15489-1(2001) points out that appropriate storage environment and media, physical protective materials, handling procedures and storage systems should be considered when designing the records system. Knowing how long the records will need to be kept and maintained will affect decisions on storage media. The records system should address disaster preparedness to ensure that risks are identified and mitigated. Integrity should be demonstrably maintained during and after recovery from disaster. The following security precautions must be in place at all times in both manual system as well as electronic system.

2.6.8.1 Security of Medical Records in Manual System

IRMT (1999) defines a disaster as an unexpected event with seriously destructive consequences. The physical security of the records must be paramount. Records must be kept in a secure environment and if used during the day must be returned to safe storage as soon as possible.

- Ensure that the entrance to the records office (or any other place where files are stored) is strictly controlled. Cabinets containing confidential records must be kept locked. The outer door to the records office must always be locked when no member of the records office staff is present, and ground floor windows should have security grilles or bars. There should be a secure place where keys can be stored so that members of staff do not take them home.

- i. Measures should be taken to prevent and control outbreaks of fire. Do not allow smoking in any file storage areas. Adequate numbers of fire extinguishers must be provided and maintained. Electrical appliances should be switched off at the end of the day. Regular fire drills should be held.
- ii. An emergency plan should be in place and tested regularly.

2.6.8.2 Security of Computerized Medical Records

Roper & Millar (1999) state that special precautions must be taken to safeguard computerized data against loss or corruption and this may entail;

- i. Keeping back-up duplicate copies of disks in a secure place.
- ii. Arranging for personal passwords to be used by the staff authorized to have access to the computer, the passwords being changed at regular intervals.
- iii. Using code, known only to the users, for document files.

Using read only tags in the system disks to prevent data from being altered or added to them.

2.7 CONTRIBUTIONS AND SUPPORT OF MEDICAL RECORDS MANAGEMENT IN SUPPORTING PATIENT CARE

Karki (2013) states that records may be termed as any information and documents kept in a systematic, scientific and easy ways that help to receive the required data at the time of necessity. He further states that medical record is also a systematized way of storing the required data, information and other relevant documents with the objective of making easy availability of necessary data at the time of its need. Medical record consists of name of patient, address, age, sex, occupation, disease,

modes of diagnosis and recommendations made there after by the concerned doctor in course of undergoing treatment. It helps patients to acquire the right and appropriate treatment. Moreover, it acts as a tool for the doctor who is looking into the patient.

In 1752 A.D Benjamin Franklin set up an incorporated Hospital in Philadelphia in United State of America. This hospital is presently known as Pennsylvania Hospital. He introduced medical record by preparing file of special cases on which patients' name, admission date, discharge date etc. were written. In the same way, another hospital was opened in Boston in 1821 A.D where a typical method of keeping relevant data was initiated. Separate files were opened for different individual patients in order to keep records. This process proved to be more helpful in finding the necessary data regarding the patients. Besides this, it helped in acquiring important facts that could make easier to take care for patients and to conduct the proper research work.

Karki (2013) states that with the passage of time medical records have been a backbone for developing a new dimension in the health sector in each of the countries in the world. It has been indispensable for countries for continuing the research works to deliver the appropriate health services to the patients, create the skilled manpower and to enhance the goodwill of the nation as well. Considering the significance of medical record no hospitals and health centres are opened without establishing separate and well-equipped medical record sections.

Apart from this, provisions for imparting the required knowledge to the persons working in medical record section have also been made. For this purpose, some institutions that impart special training have also been set-up. Such training centres seem to have been established even in India. Karki (2013) states that taking into account the importance of medical record, World Health Organization has introduced International Classifications of Disease in 1946 AD with the view of integrating the proper diagnosis systems and formulating the true and factual data on the basis of medical records kept by all the health entities. World Health Organization has initiated ICD-10 which has laid emphasis on caring for patients and finding out the causes of disease. Moreover, it tries to explain the ways to be resorted against nurse, doctor and other health workers who work under estimation and with carelessness. This helps to check the errors committed either with intention or with ignorance. In addition to this it has made provision for mentioning morbidity, mortality, and cause of death. It gives more emphasis on the injuries owing to external accidents. It has made mandatory to explain about the cause of accident and the effects it has created upon the patient. This provision has somewhat helped the world to minimize the accidents of such kind (Karki, 2013).

In some hospitals, there are distinct medical record sections. But these sections have not been well equipped and operated well to meet the entire needs. Instead these are working as only name registration section. Though there are no any concrete efforts made by the government in this sector, some hospitals are already alert in this regard. They have developed their own ways for giving due importance to medical records but the efforts made have not been abundant. Tribhuvan University Teaching

Hospital and B. P. Koirala Lions for Ophthalmic Studies Centre can be taken as models. No one can undermine the relationship between the doctors of concerned authority and the people requiring medical treatment. Medical record, no doubt, may be regarded as a supportive hand in such matters. It helps doctors as well as patients to get informed of the ailments and plans and procedures adopted in course of conducting treatment. Medical record can also be regarded as such device that might help the governing body, health institution and person concerned in easily and timely availability of required information without any dilly-dally (Karki, 2013).

According to Metzger (2004), patient care is the coordination of healthcare services to meet the needs of an individual or a population of patients. It is a process, which assesses, plans, implements, coordinates, monitors and evaluates options and services to meet an individual's health needs. A patient as well as doctor may derive the respective file/information in case of necessity as legal evidence. Medical record therefore refers to as a complete file prepared for each patient with all clinical records. It acts as a means of providing necessary data in connection with the health of people and the brunt of specific diseases at the specific places to the health sectors including the nation.

In the basis of good management of medical record one can easily obtain the ways of rendering services, standard of service, diagnosis pattern, style of treatment and managerial functioning pursued by the concerned health institutions. Medical record plays a pivotal role in such organizations, which are especially involved in research-work as well as imparting health education to the people. With the help of these

records the standard and efficiency of the product resulting there from can be appraised. Besides this, one can easily ascertain the quality of service being delivered by the expertise manpower and one can easily receive data pertaining to health of people in order to conduct research work. Since there must be a name and signature of concerned doctor who is involved in the treatment of any patient in medical record, more caution is necessarily taken, in course of treatment. Consequently a patient may derive a right treatment after quick and meaningful diagnosis of disease. This helps not only the patients in receiving good health but also the doctors in keeping his/her good will. Proper arrangement of medical record is instrumental for the concerned bodies in understanding the pressure/concentration of patients, nature of disease and all the personal details of patient. Due to easy access to these invaluable facts and figures the organization can make some alternations in its existing plans and policies and formulate some additional policies in case of urgency and directives so as to deliver better and more standardized service in the upcoming years (Karki, 2013).

Medical record is noteworthy for any country in several aspects. Since medical record contains various facts like-personal details of patient, illness, diagnosis, modus operandi used to find out the disease, seriousness of diseases, medicines being used by patients in the recommendation of his/her attending doctors and even the clear names and signature of attending doctors, the nation can attain the health relating information through check up of such medical records. Karki (2013) points out that the government can avail such records in the direction of making short as well as long term health strategies. An integrated study of medical records available

in all the hospitals and health centres will contribute towards knowing the health condition of people, ailment stricken areas, cause and effects of disease, availability of health workers as well as physical facilities and resources in order of delivering the appropriate health service to the people.

Through the study of medical record, preventive measures can be timely adopted in order to save people from being ill. The reason behind it is that the epidemics and other disease tending to spread can conveniently be well informed in time. The proportion of doctors to patients, the nature of disease and its repercussions, the number of doctors associated with certain disease, urgency of specialized service and the number of beds available at certain places compared with its actual requirement and so on are some other prominent facts as can be easily obtained (WHO, 2006).

2.7 MEDICAL RECORDS AS LEGAL EVIDENCE

Good medical records are essential not only for the present and future care of the patient but also as a legal document to protect the patient and the hospital; they must be complete, accurate, and available when needed. WHO (2006) states that medical records are generally used in court for the following:

- i. Insurance Cases: Used by the patient for proof of injury and/or disability in personal accident cases or by the insurance company to disclaim responsibility.
- ii. Worker's Compensation: In most countries, a person injured in the course of his or her duties and while acting in the scope of his or her employment is entitled to compensation for bodily injury and

disability. The medical record is used as evidence to show the date of injury, the type and severity of injury, and the patient's expected recovery.

- iii. **Personal Injury Claims:** A person may claim to have been injured through the fault or neglect of another and sues to recover damages for injuries sustained. The medical record would be used to show how the injury happened as recorded in the patient's words on admission to the hospital. The medical record would also be used to show the extent of the injuries, treatment given, duration of care and expected recovery or disability. Medical records are used more frequently in this type of case than in all other cases combined.
- iv. **Malpractice Claims:** In this type of case the Plaintiff (person suing) claims damages from a doctor, a hospital, nurse or other health professional for negligence in rendering care or giving improper treatment. The medical record would be used to show that there was no negligence and that treatments rendered were adequate and proper.
- v. **Will Cases:** A patient may have made a will during his or her hospital stay. After the death of the patient, an attempt may be made to set aside the will by seeking to prove the patient mentally incompetent. The medical record would be used to show the mental state of the patient at the time of making the will.
- vi. **Criminal Cases:** Medical records have been used in many criminal cases; the most frequent use includes: Assault cases: to prove the

assault and extent of injuries; Violent or unexplained death: to prove death resulted from natural causes, accident, misadventure or murder; Sexual assault cases: to prove the condition of a patient on admission or attendance at a hospital and the history of the assault related by the patient and mental competency: hospital medical records may also be used as evidence in proving the mental condition of a patient (WHO, 2006).

2.8 INFORMATION COMMUNICATION TECHNOLOGIES (ICTs) AND THE MANAGEMENT OF MEDICAL RECORDS

Information Communication Technologies (ICTs) refer to technologies dedicated to information processing, information storage, retrieval and communication irrespective of whether the information is in the form of numerical data, text, sound, images or others. Advances in information and communication technologies provide the opportunity for governments throughout the world to improve the delivery of information and services to citizens and businesses, to streamline public sector functions, and to increase participation in government. In some instances, this is just a matter of providing electronic access to existing information. In others, electronic services, such as land searches or submission of tax returns, are being delivered on-line. Electronic government has the potential to transcend constraints imposed by distance and increase the speed of service delivery, but it also poses a number of challenges for accountability, the rule of law and the maintenance of organizational

memory (The International Bank for Reconstruction and Development/The World Bank, 2004).

Computerized Medical records can be referred to (CMR) using different terms, such as computer-based patient records (CPR), Electronic health records (HER), patient carried medical records (PMR) Electronic patient records (EPR), electronic medical records (EMR), personal health records (PHR) and digital medical record (DMR) (Omary et al, 2010). In a number of countries, many of the procedures such as patient identification and admission and discharge procedures have been computerized. The automation of these procedures can improve the efficiency and effectiveness of Medical Record Departments. Although computerization could assist in the efficient management of the medical record services, it is important to develop a simple, effective and efficient manual medical record service before considering computerization. Computerization will not solve all problems if manual systems are not properly developed and maintained.

2.8.1 Electronic Health Records Systems and Patient Care

Electronic health records systems facilitate evidence-based information and improve the clinicians' ability to make sound clinical decisions in a timely manner at the point of care by; increasing the availability, timeliness, and accuracy messages among healthcare providers; provision of care-planning tools; increases access to patient information and better documentation (Metzger, 2004).

Burney et al, (2010) state that patient care is the intersection of information science, computer science, information technology and healthcare. It deals with the resources,

devices, and methods required in optimizing the acquisition, storage, retrieval and use of information in health and biomedicine. This includes not only computers but also clinical guidelines, formal medical terminologies and information and communication systems. Research and development efforts within the healthcare industry and the rapid advancement in ICT over the last two decades have brought about significant advances in the quality of medical services to the patients. Developed countries are spending a lot of resources for the improvement of the healthcare systems and their integration with information technology. The definition of healthcare system has changed due to the advancement in ICT. Quick and fast access to the medical data is available to all the stakeholders through internet and the developing countries may take advantage of it. Technology transfer and capacity building in healthcare systems is required in the developing countries. Apart from financial constraints the other important thing is the reforms in healthcare policy and a social change which is more difficult to overcome as compared to financial crisis.

2.8.2 M-Health

Advancements in information and communication technologies have paved way for provision of cost effective electronic services to the people around the globe. The combination of such wireless technologies with e-health is known as m-health. In general terms, m-health can be defined as mobile computing, medical sensor, and communications technologies for healthcare. The applications include the use of cell phones and other communication devices to gather health data, delivery of healthcare information to doctors, researchers, and patients. It also includes real-time and direct provision of health services. It can help improve clinical outcomes, and contribute to

better public health monitoring and education. This system will be very handy in locations where there is a dearth of healthcare facilities and infrastructure. The availability of ICT infrastructure will be used to get medical advice from health professionals at remote location through the support centres working round the clock (Burney et al, 2010).

2.8.3 Telemedicine

Recently lot of stress is being made on the field of telemedicine which is a merger of advanced telecommunication and computer technologies. Telemedicine is the use of information and communication technologies to provide and support healthcare services at distant locations. Burney et al, (2010) point out that telemedicine can give a new model for interaction with the patients or other important entities such as hospitals, pharmacies, physicians and governmental agencies. On the other side very advanced telemedicine technologies is on the way such as Telesurgery where robotic instruments will perform the surgery on the basis of the audio and visual data received by the surgeon present at a remote or a distant location where there it is impossible to move a patient immediately.

2.8.4 Video Conferencing

Another important technology is the use of video conferencing that allow clinicians/surgeons and physicians to interact with a distant patients due to time factor in a real time and give his/her expert advice and even interact with the patient. Burney et al, (2010) further indicate that the video conferencing also help the physician to interact with different experts at the same time and make a decision. The modern technology provide the ways to not only store digital images such as MRI,

X-Rays and Radiographs but to transmit them effectively and efficiently using tele-radiology to the consultants which saves precious time and without any significant loss of data.

2.8.5 Picture Archiving and Communication System

A picture archiving and communication system (PACS) is an electronic and ideally filmless information system for acquiring, sorting, transporting, storing, and electronically displaying medical images. This technology captures and integrates diagnostic and radiological images from various devices (e.g., x-ray, MRI, computed tomography scan), stores them, and disseminates them to a medical record, a clinical data repository, or other points of care. Information and communication technologies (ICT) are being widely used in healthcare management systems. Rapid advancements in ICT in the last decade or so provide solutions to the problems in healthcare management systems. These include a wide spectrum of issues such as patient safety, dietary management, telemedicine, digital imaging, and document management among others (Burney et al, 2010).

2.9 CHALLENGES FACING TANZANIA PUBLIC SERVICE PERTAINING TO RECORDS MANAGEMENT

Many public service offices in Tanzania are experiencing problems regarding the management of public records (Kamatula, 2013). He further points out common challenges facing the entire public services in Tanzania in relation to records management;

2.9.1 Inadequate Records Storage Facilities

Registries in ministries, departments, regions and Local government authorities have inadequate storage facilities, accommodation and supplies. As such, most of the public offices accommodate both current and closed records on the same storage area. Ibid.

2.9.2 Low Priority accorded to Records and Archives Management

Records management function is given a low priority in the sense that there is inadequate management attention by heads of public offices and records users.

2.9.3 Limited Skills and Capacity of Registry Staff

Chachage and Ngulube (2006) state that most of the registry staff have little or no records management training. In some cases, registries are perceived as dumping place for non performing employees. Worse still in other cases, office attendants, gardeners and messengers are promoted to registry posts.

2.9.4 Insufficient Legal and Regulatory Framework

Records and archives management issues are partially addressed by existing policies and legislation like The National ICT Policy of 2003, The Cultural Policy of 1997, and National Security Act. No. 3 of 1970, Records and Archives Management Act No. 3 of 2002, Founders of the Nation (Honoring Procedures) Act. No. 18 of 2004 and Evidence Act (Revised Edition) of 2002. However, these legislation and policies are not comprehensive enough to cover all aspects of records management life cycle.

2.9.5 Ethics of Public Servant

Some public servants do not abide by the established government ethical conduct and most of public offices have ceased to provide induction courses to new employees.

2.9.6 Lack of Vital Records Plan

There is no plan for managing vital records in public offices. Ibid.

2.9.7 Insufficient Coordination Mechanism

There is no coordination mechanism for public and private records and archives management in the public offices.

2.9.8 Emergence and use of Information and Communication Technology (ICTs)

There is a lack of standards and guidelines of managing electronic records making it difficult to capture, store, retrieve, maintain security, preserve and migrate electronic records. In addition, MBUGUA (2012) indicates that Kenya Public Archives and Documentation Service Act govern the management and preservation of public records. The Act among other powers and responsibilities empowers the Director of the Kenya National Archives & Documentation Service (KNADS) to examine and advise on the care, preservation, custody and control of any public records. However, the Act does not clearly define role of the Director-KNADS and that of the records creating agencies in respect to the management of public records. As a result KNADS is more concerned with the preservation of archives while records creators

assume that the responsibility of KNADS covers all aspects public records management except current records.

The challenges of managing medical records especially in public hospitals in Kenya are not any different from those facing government ministries and departments in the country. These challenges are highlighted in a study carried out by Kemoni (1999) to examine the policies and practices for managing medical records at Moi Teaching and Referral Hospital in Eldoret. The study established that there were inadequate and unsuitable storage facilities for medical records, lack of formal training in records management for staff managing medical records, limited computerization of the medical records processes and lack of an appraisal and disposition policy. A number of hospitals including public hospitals in Kenya have introduced computerized information management systems in a bid to address the numerous problems posed by paper-based medical records. The manual medical records systems prevalent in many public hospitals present serious challenges to the efficient and effective service delivery.

2.9.9 Lack of Funds

The lack of funds is one of the major problems facing e-healthcare adoption in many developing countries. As a result of the lack of funds to control their own projects, many developing countries largely depend on foreign aid. For Tanzania, these foreign aid from developed countries are even controlling the whole economy of the country by looking on the percentage of budgets dependence. The Tanzania's budget in the year 2007 depended on foreign aid by 42 percent and the expectation was to reduce the dependence rate to 34 percent in 2008 (MKULO, 2008). As a result of

ongoing dependency on foreign aid that is, monetary and through resources, many e-healthcare projects which are funded by developed countries is often directed to certain diseases such as HIV/AIDS. Therefore, e-healthcare adoption in developing countries is limited to certain diseases and is not available generally within the country.

2.9.10 Low Rate of Internet Penetration and Low Bandwidth

According to the International Telecommunication Union ITU (2007) by the year 2006, the Internet penetration in Tanzania was 1 percent of the population compared to 6.0, 7.9 and 10.5 percent of the population in Nigeria, Kenya and South Africa respectively. The low rate of Internet penetration and low bandwidth are among the challenges to e-healthcare adoption in Tanzania. Due to the poor ICT infrastructure, the majority of areas in the country cannot support Internet deployment, which in turn, hampers e-healthcare adoption. In urban areas, where there is considerable Internet penetration, there is low bandwidth which again hampers its utilization. The slow adoption to ICT in developing countries is influenced by several factors such as the perception of its leaders as it is a misallocation of resources, politics and ICT not being a priority of the country. Therefore, since EHRs need to be shared between physicians located in different healthcare centres, these factors subsequently hinder its adoption and use. Hull (1981) points out that other factors apart from low rate of Internet penetration that hinder EHR sharing include technological concerns, privacy, and security and confidentiality concerns

2.9.11 Lack of Healthcare Policies

Omary et al, (2010) point out that in the context of the healthcare industry, healthcare policies are responsible for providing evidence-based, peer reviewed policy guidance and resources to support advocacy decision making at the local level. Additionally, health-care policy creates a framework to provide necessary conditions for the implementation of health promotion activities, and interventions by using particular tools such as laws, policy measures, policy documents and agreements. Infoplease (2014) emphasizes that lack of these policies will pose another challenge in e-healthcare since those responsible for making decisions will make them without guidance. Most developed countries and some developing countries such as South Africa have healthcare policies in place to guide the deliverance of electronic healthcare services. However in Tanzania there is no healthcare policy related to the delivery of e-healthcare services.

2.9.12 Lack of Acceptable Standards

For future processing of EHRs, chosen computer systems should be able to identify data in one system and associate them with data located in other systems (Wickramasinghe et al., 2005). This is accomplished by the existence of standards for different uses. In developed countries such as United Kingdom and United States of America, there is a huge number of research institutions trying to establish standards for different uses. Among the established standards is Healthcare Level 7 (HL7) for transmission of e-healthcare information, SNOMED CT (Systematised Nomenclature for Medicine Clinical Terms) developed by the College of American Pathologists and National Health Service (NHS) in England (SNOMED-

International, 2009) and CEN 13606 for the exchange of shared EHR. However, there are no acceptable standards agreed to be used globally in e-healthcare. Politics at an international level which involve companies and organisations that develop e-healthcare standards is one among the reasons for the lack of acceptable global standards. The lack of acceptable global standards is also influenced by historical reasons and digital divide (Sarah, Thomas and Rachel 2009).

2.9.13 Lack of Manpower

Another challenge for e-healthcare adoption in developing countries is the availability of inadequately skilled healthcare workforce. Omary et al, (2010) note that challenges that healthcare workforce face while implementing telemedicine technology in India, computer literacy was considered to be the main challenge. There are few physicians, pharmacists, dentists and technicians while the major group comprises nurses and midwives and other healthcare workers. The latter group is characterized by the low level of education compared to the previous group. With an unequal distribution between these two groups, e-healthcare adoption will succeed more slowly when compared to a situation when the distribution is more equal (Schellenberg 1984, 2006).

2.9.14 ICT Challenges

Information Communication Technology which is the backbone to e-healthcare adoption and implementation is still out of reach for this large group. IMF (2005) identifies that roughly half of the world population lives on less than one dollar a day. Most of these people reside in developing countries. Contrary, access to ICT in

these developing countries involve large amount of money which many potential users can not afford. Wamukoya and Mutola (2005) points out that despite opting for ICT in their day to day tasks, many organizations in developing countries lack security awareness programs for their employees. Desman (2001) points out that security awareness refers to employees' understanding on security control measures and their consequences. The lack of security awareness programs increases the chances of security breaches. A survey done by Lupiana (2008) identifies that there is a huge gap exist on computer security perception between developed and developing countries where Tanzania was considered as a case for developing countries.

2.9.15 Language

Omary et al, (2010) indicate that poor literacy is another major problem related to ICTs such as the Internet in developing countries. As majority of the population in developing countries reside in rural areas they are divided into regions which speak different native languages. And for those who can read may know only a local language such as Swahili in Tanzania while Internet is dominated by English-language.

2.9.16 Privacy, Confidentiality and Security Concerns

Despite the presence of other challenges that countries face in their adoption to e-healthcare; privacy, confidentiality and security are the three important challenges involved in protecting patient healthcare information from accidental or intentional misuse (Maheu et al., 2001). According to Rindfleish (1997) in e-healthcare context, privacy is defined as the right and desire of an individual to control the collection,

use and disclosure of his or her health information while confidentiality refers to the controlled release of personal health information to a care provider or information custodian under an agreement that limits the extent and conditions under which that information may be used or released further. The confidentiality of the patient healthcare information may be broken either internally, by accidental disclosure, insider curiosity or by insider subornation or may be broken from outside intrusion through unauthorized access (Kelly and Unsal 2002).

Security is defined as methods such as policies, procedures or safeguards by which access to patient health information is controlled and protected from accidental or intentional disclosure to unauthorized persons, and from alteration, destruction and loss (Maheu et al, 2001). Rindfleisch (1997) states that IT solution companies are among the main enforcers to e-healthcare adoption and implementation. These companies are interested with the financial gain from e-healthcare products that they produce. They concentrate much in producing usable products and hence causing security to suffer. Insufficient security which causes breaches in e-healthcare information systems results into privacy, security and confidentiality concerns. These three are also the major challenges in developed countries. Other challenges in developed countries include.

2.9.17 Resistance to Information and Communication Technology

Omary et al, (2010) state that IT solution companies claim over a number of benefits, such as reduction in medical errors and cost of delivering care and improvement in physician efficiency that can be offered through e-healthcare adoption. Despite being outlined with these benefits, healthcare professionals still resist to incorporate

computer technology while attending to patients. These professionals prefer to write prescriptions for example by hand rather than using the technology for efficiently. The resistance has been associated with a number of reasons. Healthcare professionals claim the whole process of obtaining patients records from a range of computer applications is not part of their job and wastage of time.

2.9.18 Fear of Losing Control of their Data

Wickramasinghe et al 2005 state that shift from traditional healthcare to e-healthcare involves the transformation of records from paper-based to digital format. These records are referred to as Electronic Healthcare Record (EHR). Grimson (2001) defines and characterizes the next generation EHR as the longitudinal cradle-to-grave records readily accessible and available over the Internet. These records will be linked to clinical protocols and guidelines to drive the delivery of healthcare to the individual. The presence of these records over the Internet facilitates record sharing between physicians. However, patients usually feel that they are losing control of their data hence resisting e-healthcare adoption.

2.9.19 Poor E-Healthcare Systems Design

Many e-healthcare systems are developed by Information Technology (IT) solution companies which operate for the purpose of making profit. These companies are interested in the financial gain from e-healthcare products that they produce. They concentrate much on producing usable products for healthcare institutions and hence causing privacy, security and confidentiality to suffer. Omary et al, (2010) indicate that in order to resolve this, efforts to secure e-healthcare systems need to be taken

from design of the systems to implementation in order for the developments that have been achieved so far to be rolled to the real world.

The electronic challenges are also highlighted by Kimama (2008) who examined the challenges facing the implementation of hospital management information systems in hospitals in Nairobi. The study established that there was Lack of top management support, poor skills sets among users, resistance to change, insufficient Software evaluation, poor Communication, lack of change management program and Security Issues.

Despite these barriers the need to adopt EHRS has been widely recognized as essential in improving health data collection, processing and dissemination to support patient care, the adoption and use of ICT has transformed several industries in the world, one among industries that has been transformed is healthcare, result into e-healthcare. There are various perceived benefits, to individuals and governments associated with e-healthcare adoption. These benefits include reduction in medical errors, an improvement on physician efficiency and improvement in physician-patient relationship and cost involved in delivering care (Omary et al, 2010). WHO (2006) points out that, the quality of patient care is essentially determined by the quality of infrastructure, quality of training, competence of personnel and efficiency of operational systems. The fundamental requirement is the adoption of a system that is 'patient orientated'. Existing problems in health care relate to both medical and non-medical factors and a comprehensive system that improves both aspects must be implemented. Health care systems in developing

countries face an even greater challenge since quality and cost recovery must be balanced with equal opportunities in patient care.

2.10 REVIEW OF EMPIRICAL STUDIES

This section presents empirical studies that have been conducted on medical records, the significance and relevance of this research is indicated.

Mbugua (2012) carried out a study to investigate the effectiveness of medical records in the provision of healthcare services at Kenyatta National Hospital. The study established that medical records play a critical role in patient care, healthcare planning, medical research and policy development. It was established that the quality of medical records in terms of completeness, authenticity and reliability was inadequate which impacted negatively on healthcare delivery. Research findings also revealed that medical records management practices consisting of creation, control, retention and disposal of medical records were not fully effective hampering prompt availability and accessibility to medical records. Further recommendations focus on the need to strengthen top management to support and let integration into medical records processes. The study finally proposes a framework for managing medical records which was the focus of this research.

Abdulai (2009) carried out a study to investigate on implementing electronic health record in developing country, potential challenges and benefits. This study explores the data collection and management challenges in a Ghanaian hospital using an interpretative case study approach and proposes implementing an Electronic Health Record (EHR) system as a solution to these challenges. This study briefly mentions

two of such; the Cameroonian and Kenyan EHR projects. Some challenges that would impede the implementation of EHR in a Ghanaian hospital are the initial huge start up costs, poor computer skills of healthcare professionals, poor maintenance culture, and people embedding political meaning(s) into the system. The weak state of information infrastructure at the hospital would be another challenge in an EHR implementation. EHR could potentially reduce waiting times for patients, reduce the cost of the hospital's operations, improve interdepartmental communication and collaboration, provide opportunity for sharing best practices among physicians within Ghanaian hospitals, and enhance better resource allocation. The data an EHR could primarily capture would be patients' demographics, care plans, laboratory results, billing and NHIS claims information.

Kimama (2008) investigated the challenges facing the implementation of hospital management information systems in hospitals in Nairobi. The study established that most hospitals have adopted several practices in their HMIS implementation. The study found that the following challenges are faced by Kenyan hospitals in HMIS implementation. These include the challenge of support from the employees, financial resources, internal communication, and training of users, changeover methods and long procurement processes. The study concludes that to improve the success of HMIS implementation in hospitals, the study recommends; improving planning and coordination of HMIS projects, capacity building through user training, knowledge and skills transfer, transparency in procurement of information systems, involvement of users in system requirement definition, involvement of managers at all levels, sufficient software & hardware evaluation and use of change

agents in implementation. The study further recommends employing qualified managers to spearhead HMISs implementation and empowering them through training since they are the drivers of the project. Hospitals intending to implement HMISs should establish and equip IT department which will spearhead automation, development of IT strategy and enterprise architecture.

Kemoni (1999) carried out a study to investigate the policies and practice of managing medical records at Moi Teaching and Referral Hospital in Eldoret, Kenya. The study established that the storage facilities for medical records were inadequate, some of the staff involved in the management of medical records had no formal training in records management, computerization was limited to only a few of the medical records processes and the hospital had no appraisal and disposition policy. The study recommended measures aimed at improving medical records management at the hospital which included: the need to improve medical records infrastructure, training of medical records personnel, the need to extend computerization to other key medical records processes and strengthening hospital management support towards medical records management activities.

Marutha (2011) carried out a study on records management in support of service delivery in the public health sector of the Limpopo province in South Africa. The study sought to investigate whether records-keeping practices support or undermine service delivery and the e-health readiness level. The study discovered that records management negatively affected timely and effective health care services. This resulted in long patient waiting times and patients being treated without their medical

history records. The study recommended the introduction of an electronic records management system capable of capturing and providing access to a full patient record and tracking paper record movement.

2.11 CHAPTER SUMMARY

This chapter has presented the literature review on the topic of records management, medical records and theoretical framework namely, records life-cycle model, records continuum model, and chronic care model. Furthermore it has presented the link between medical records management and patient care. A review of empirical findings has also been made. The review of literature has revealed that there is a strong link between medical records management and patient care whereby patient care goes hand in hand with effective and efficient medical records management.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 INTRODUCTION

This chapter discusses the research methodology for the study. It begins by describing the qualitative research approach including why it was preferred for the study. The chapter further presents the study population, sampling procedure, data collection methods and procedures, data collection instruments, with justification on their choice and use. The chapter also describes data validity and reliability, how data was analyzed, and finally the chapter discusses ethical considerations relating to the study.

3.1 RESEARCH DESIGN

The study employed qualitative research techniques. This method was preferred because the aim of the study was to gather comprehensive information from the respondents on their views, experiences and opinions regarding the role of medical records in supporting patient care at Ocean Road Cancer Institute. Qualitative research involves detailed, verbal descriptions of characteristics, cases, settings, people or systems obtained by interacting with, interviewing and observing the subjects. Qualitative research methods try to answer the general research question “What is going on here?” This design was considered appropriate since it offered the researcher an interactive chance to examine complex questions that could be impossible with quantitative methods and emphasized detailed contextual analysis of the problem under study. This approach was also quite suitable since the researcher

was free to seek clarifications on some of the responses. In the circumstances, the respondents were able to qualify their answers and emphasized on their strong views and opinions, for example, on the challenges they experience in creation, use and management of medical records.

3.2 STUDY POPULATION

The study population comprised a total of 190 ORCI staff. Staff comprised medical specialist, medical officers, nurses, radiotherapist, radiographers, medical attendants and medical records staff. The reason for sampling from the above staff was because of their involvement in diagnosis, treatment and care of patients. In the discharge of their duties they create medical records in the form of patients' case notes, reports on diagnostic investigations, nursing procedures, drug administration among others. These professionals in addition heavily use medical records in the course of their work and are therefore conversant with utility value of medical records in patient care. Besides the clinical and diagnosis service staff mentioned above, other medical records staff making up part of the 190 ORCI are the medical records staff. The medical records staff were selected on the basis of their duties which have to do with movement of medical records.

3.3 SAMPLING FRAME

Sample size depends largely on the degree to which the sample population approximates the qualities and characteristics of the general population. Gay and Airasian as cited in Coetzer (2012) provide the following guidelines for selecting the sample size, for a small population (less than 100 people or other unit), there is little

point in sampling; a researcher has to survey the entire population; if the population size is around 500, 50% of the population should be sampled. If the population size is around 1500, 20% of the sample should be sampled. And beyond a certain point at least 5000 units or more the entire population size is almost irrelevant, and a sample size of 400 should be adequate. The target population was 190 while a total of 10 Medical Records Management Staff were selected purposively acted as key informants from which a sample size of 100 respondents was picked representing over 50% of the population.

3.4 SAMPLING TECHNIQUES AND SAMPLE SIZE

Sampling is a procedure where in a fraction of the data is taken from a large set of data and the inference drawn from the sample is extended to whole group. There are two types of sampling techniques namely probability (representative) sampling and non-probability (non-representative) sampling. Stratified and purposive sampling techniques were used in this study. This is to ensure that the different cadres of staff involved in the creation, use and management of medical records are included in the sample. The population was stratified in terms of cadres who constitute the (20) medical specialist, (10) medical officers, (90) nurses, (30) radiotherapist, (10) radiographers (20) medical attendants making a total population of 180 and (10) medical records staff were purposively sampled.

3.5 PURPOSIVE SAMPLING

In purposive sampling the investigator uses his or her judgment about which respondents to choose and picks only those who best meet the purpose of the study.

In this study a total of 10 Medical Records Management Staff were selected purposively acted as key informants. Purposive sampling was used because it is judgmental allowing the researcher to handpick certain groups or individuals according to their relevance to the issue at hand. Coetzer (2012) points out that the use of purposive sampling is aimed at getting as more relevant and valuable information for the research as possible.

3.6 STRATIFIED SAMPLING

In stratified sampling if a population from which a sample is to be drawn does not constitute a homogeneous group stratified sampling technique is generally applied in order to obtain a representative sample. Under stratified sampling the population is divided into several sub-populations that are individually more homogeneous than the total population and then the researcher selects items from each stratum to constitute a sample. Since each stratum is more homogeneous than the total population the researcher will be able to get more precise estimates for each stratum and by estimating more accurately each of the component parts (Kothari 2004). Stratified sampling was employed in this study because the population was heterogeneous and it was possible to establish strata which were reasonably homogeneous within each one. Stratified sampling was drawn from (20) medical specialist, (10) medical officers, (90) nurses, (30) radiotherapist, (10) radiographers (20) medical attendants making a total population of 180.

Table 3.1: Study Population and Sample Size

STAFF	TARGET POPULATION	SAMPLE SIZE	PERCENTAGE
Medical Specialist	20	10	50%
Medical Officers	10	5	50%
Nurses	90	45	50%
Radiotherapist	30	15	50%
Radiographers	10	5	50%
Medical Attendants	20	10	50%
Medical records staff	10	10	100%
TOTAL	190	100	

Source; Ocean Road Cancer Institute 2014

3.7 DATA COLLECTION METHOD

3.7.1 Interview

An interview was the collection method of the study. This was because the study was based on qualitative methodology. An interview is a conversation between two or more people (the interviewer and the interviewee) where questions are asked by the interviewer to obtain information from the interviewee. It is the process of gathering information by asking questions face to face (Mugenda & Mugenda 1999). The study utilized the semi-structured interviews. Semi structured interviews involve a combination of both structured and unstructured interviews. The study utilized the

semi-structured approach to ensure collection of relevant information in tandem with the research objectives and research questions and at the same time create room for probing more information. Furthermore, semi-structured interview guides were used so as to enable flexibility and further investigation on views and opinions of the respondents on all aspects covered by the study. After every interview all the responses to the questions were summarized and presented to the respondents to ensure clarity on what they said. An interview was conducted amongst the various staffs of ORCI as indicated in population sample size in Table 3.1. Kombo & Tromp (2006) note that the reasons for using in-depth interviews include the following: face-to-face interviews are characterized by synchronous communication in time and place. Due to this synchronous communication, as no other interview method, face-to-face interviews can take advantage of social cues. Social cues, such as voice, intonation, body language and so on of the interviewee can give the interviewer a lot of extra information that can be added to the verbal answer of the interviewee on a question.

3.8 RELIABILITY AND VALIDITY OF THE STUDY

The degree to which a measurement technique can be depended upon to secure consistent results upon repeated application is known as reliability Bollen, (1989). In other words, reliability is the extent to which measurements are repeatable when different persons perform the measurements, on different occasions, under different conditions, with supposedly alternative instruments which measure the same thing. ISA (2009) further states that reliability is consistency of measurement or stability of measurement over a variety of conditions in which basically the same results should

be obtained. The extent to which results are consistent over time and an accurate representation of the total population under study is referred to as reliability and if the results of a study can be reproduced under a similar methodology, then the research instrument is considered to be reliable. Validity is defined as the extent to which the instrument measures what it purports to measure. For example, a test that is used to screen applicants for a job is valid if its scores are directly related to future job performance. There are many different types of validity, including: content validity, face validity, criterion-related validity (or predictive validity), and construct validity, factorial validity, concurrent validity, convergent validity and divergent (Weiner 2007).

The researcher achieved data reliability and validity through pre-testing the data collection tools for one month involved ten records management officers from the main records office at ORCI and twenty clinical officers who were at field work and were not involved in the actual study. This ensured consistent answers to the questions. Participation in the pilot study was voluntary and the participants were assured of confidentiality. The purpose of the pilot study was to identify challenges that would occur when using the proposed methods, instruments, procedure and solicit suggestions for improvement. A pre-test checklist was used to determine adequacy of the interview guides in respect to the clarity of questions, structure, language used and sequence of the questions including seeking for suggestions for improvement.

3.9 DATA ANALYSIS

This study used descriptive statistics in analyzing its data particularly frequency and percentage. This is the process of bringing order, structure and meaning to the mass information collected. Data in qualitative research are in the form of text, transcribed and translated data or field notes, materials and pictures thus it usually sometimes ambiguous and time consuming in conducting analysis (Wekesa, 2011). The researcher read, reviewed and interpreted qualitative data which consisted of interview notes hence summary notes were made from the reviewed data with key highlights. Data were then presented descriptively under themes in line with research objectives.

3.10 ETHICAL CONSIDERATIONS

Authority to conduct this research was sought from the ORCI ethics and Research Committee in line with the requirements for conducting research in the Institute. The study observed ethical values of integrity, honesty, objectivity, confidentiality and anonymity. This was achieved through seeking respondents' consent before collecting data, reporting findings accurately and non-disclosure of names of respondents. The interviews were planned in advance and the expected benefits explained to the respondents and all of them remained anonymous being identified only by a unique code number, thus assuring their confidentiality.

3.11 CHAPTER SUMMARY

The chapter has presented the research methodology that was used for the study. The study used the qualitative research method with some aspects of quantitative

techniques. The study population comprised of ORCI staff that were involved in the creation, use and management of medical records. The stratified sampling technique was used so as to enable representation of the different cadres and selection of knowledgeable staff on the area being investigated. A pilot study was conducted and the results were used to revise and improve on the data collection tools. Semi structured face-to-face interview were the main data collection instrument. The confidentiality to all respondents was assured.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.0 INTRODUCTION

This chapter presents analyses and interprets data collected to satisfy the objectives of this study. The main purpose of the chapter was to process the raw data into meaningful facts. The findings were organized in relation to the study objectives and the format of presentation was descriptive complemented by relevant quotes from respondents and tables where applicable for easy understanding. Data analysis was based on the responses obtained from the field in line with the study objectives stated below.

- I. Determine how medical records are managed at Ocean Road Cancer Institute.
- II. Examine the contributions that medical records management provide to patient care at the Institute.
- III. Determine the integration of ICTs in the management and use of medical records in patient care.
- IV. Explore the challenges faced in the management of medical records at Ocean Road Cancer Institute.
- V. Suggest strategies for improvement of medical records management in supporting patient care at the Institute.

Table 4.1: Response Rate on Interview Done

STAFF	TARGET POPULATION	SAMPLE SIZE	NUMBER OF INTERVIEWER	RATE %
Medical Specialist	20	10	10	100%
Medical Officers	10	5	5	100%
Nurses	90	45	45	100%
Radiotherapist	30	15	15	100%
Radiographers	10	5	5	100%
Medical Attendants	20	10	10	100%
Medical records staff	10	10	10	100%
TOTAL	190	100	100	

4.1 RESPONSE RATE

Prior to data gathering, the researcher grouped the 100 respondents into two cluster namely Records Management Staff and clinical staff and developed the interview schedule for each cluster. The respondents interviewed were 10 medical records staff and 90 clinical staff that included 10 Medical Specialist, 5 Medical Officers, 45 Nurses, 15 Radiotherapist, 5 Radiographers and 10 Medical Attendants. A total of 90 clinical staff from different sections and 10 Medical Records Management Staff were

purposively selected to act as respondents. The researcher spent almost four months to conduct an interview.

4.2 RESPONDENTS' CHARACTERISTICS

The respondents of this study included medical records staff and clinical staff that included, Medical Specialist, Medical Officers, Nurses, Radiotherapist, Radiographers and Medical Attendants. The interviews conducted with the various cadres of staff indicated that most respondents had served in the Institute for a long period ranging between 2 to 20 years. This showed that majority of the staff had a wealth of experience and knowledge on the different types of records generated as a result of the services provided and kept at the Ocean Road Cancer Institute. The respondents showed that they were conversant with the roles and value of medical records in supporting patient care including the challenges that were encountered in the use and management of medical records at the institute.

4.3 MANAGEMENT OF MEDICAL RECORDS AT OCEAN ROAD CANCER INSTITUTE

The first objective of the study sought to investigate how the medical records were managed at the institute. To achieve this objective participants were interrogated on various aspects of medical records management.

4.3.1 Data from Medical Records Staff

(i) Awareness of the Medical Records Management System

The study sought to find out the awareness by medical records staff about the medical records management system that was in place at the Institute. Ten (100%)

medical records staff were familiar with centralized medical records system. In this system patients were assigned one medical records number during the first visit which was then applicable in all subsequent treatments and visits. A typical response was as follows;

The file is opened when the patient first attends the institute, given his/her medical records number and then used whenever he or she visits an outpatient clinic or is admitted as an inpatient. The centralized medical records management system increases client confidentiality and makes it easier to locate and retrieve information whenever it is required.

(ii) Formats of the Medical Records at the Institute

The study sought to establish from the respondents the type(s) or formats in which the medical records existed. Ten (100%) medical records staff acknowledged the existence of paper records and electronic records at the institute. A typical response was as follows;

We are receiving paper records from both internal and outside the institution such as referral letters and other medical information. Also we generate electronic records through our computers during the registration process of the patient who is first visiting at our institute.

(iii) Space Allocated for Medical Records Storage

The researcher sought to know the availability of space that had been set aside for keeping the medical records at the institute and 7 (70%) respondents stated that the space was not enough since the room was too small which hampers easy trafficking when they needed to accomplish their duties for instance in locating and retrieving of

the files. The remaining 3(30%) did not have any idea on the availability of space for medical records at the Institute.

(iv) Medical Records Filing System

Ten (100%) medical records staff were familiar with the existing filing system that was used at the institute. Typical responses were as follows;

We are using straight numeric filing method. In this method medical records are filed in strait number order according to the medical records number starting from the lowest number ending with the highest number.

With this Straight numeric filing method, the training time for new staff is short, easy to identify mistakes during numbering registration and help us to avoid misfiling.

(v) Adequacy of the Storage Equipment in the Protection of Medical Records

The study sought to establish the adequacy and suitability of the equipment for medical records at the Institute. Ten (100%) medical records staff acknowledged that there was enough medical records equipment at the institute. A typical response was as follow;

We have enough storage equipment that supports health survival for medical records since we are in a new records office which has enough modern shelves and drawers.

(vi) Applicability of Master Patient Index

Ten (100%) medical records staff acknowledged the existence of a master patient index. Their responses showed that there was a master patient index which registered

patients for the first visit based on the year's interval. A typical remark was as follows;

Yes we have a master patient file which contained all lists of patients who have attended the Institute. It also contains patients' demographic information that helps in the preparation of master patient identification cards.

(vii) Effectiveness of the Tracking System at the Institute

Eight (80%) out of 10 staff noted that there was poor tracking system poor at the Institute.

A cited example was;

There are tracer cards but normally we don't use them because they are few compared with the number of active files. This may contribute to the loss or misplacement of the files.

(viii) Existence of Medical Records Guidelines and Procedures Manual at the Institute

An attempt was made to ascertain whether there were guidelines and a procedure manual at the Institute. Ten (100%) medical records staff acknowledged that the Institute had not put in place medical records guidelines and a procedure manual which would play a significant role in fulfilling daily operations. A typical response was as follows;

It is true that our institute lack medical records management manual and guideline. That undermines patient care since such tools help in guiding the medical records management programme.

(ix) Availability of Medical Records Management Policy at the Institute

The study sought to find out whether a medical records management policy existed at the Institute. Ten (100%) medical records staff stated that the Institute lacked a medical records management policy. They had the view that sound medical records management required well-spelt out policies to govern their systematic management.

The staff further provided the following remark;

we are not matching with statutory requirements, based on national and international standards on the management of medical records due to lack of a legal statement that provides proper direction on how to create, maintain use, and dispose of the medical records.

(x) Availability of Medical Records Retention Schedule

The study sought to know from medical records staff about the availability of a medical records retention schedule.

A typical response was as follows;

There is no medical records retention schedule. It is so surprising to see we are working without the existstance of medical records retention schedule in our Institute while medical records retention schedule is a document which specifies the length of time each current record is to be retained for reference purposes, the length of time for storage at record centre, as semi current record, and when the record may be destroyed or transferred to the secondary storage.

(xi) Existence of Records Centre for the Storage of Semi Current Medical Records

The study sought to find out from the medical records staff about the existence of a records centre to provide low cost storage for medical records. Ten (100%) medical

records staff stated that there was no records centre at the Institute to provide low cost storage for medical records.

(xii) Availability of Disaster Management Plan

The study sought to find out from the medical records staff the availability of potential disasters management plan. Ten (100%) medical records staff indicated that the Institute did not have in place a written disaster preparedness plan.

Typical responses from the respondents were as follows;

We don't know how to use the fire extinguishers though it is found at every corner of our building.

In fact we are not involved in any training program regarding the use of fire extinguishers, what if there is fire outbreak at the medical records storage room.

It was observed that though the records offices were labelled "*no entry to un authorized people*", there was no restriction of people from accessing the records office thereby risking the security of medical records. The observation also revealed that the Institute had no written medical disaster preparedness plan. It also noted that there was no established team for disaster response. The researcher further observed that the Institute was likely to be affected by theft due to unauthorized access to medical records office, fire outbreak due to unreliable power supply which may be caused by electrical fault, and virus attack for electronic records among others. Therefore the Institute was likely to suffer a great loss should a disaster happen because there was no back up for electronic records that were created and there were no hard copies stored off site.

4.3.2 Data from Clinical Staff

(i) Involvement of Clinical Staffs in Creation of Medical Records

All participants agreed that they were involved in the creation of medical records particularly in diagnosis, treatment and care processes. For instance, 10 (100%) medical specialists indicated that they were involved in the creation of medical records when a patient needed special treatment and care to the specific cancer disease by providing the patient's progress report.

Five (100%) medical officers were involved in the creation of medical records by proposing a type of treatment and care that a patient is supposed to get. This happened when cancer patients attended the Institute and submitted his or her diagnosis report.

Five (100%) radiographers stated that they were involved in the creation of medical records by taking x-rays of patients and providing the report. Fifteen (100%) radiotherapists indicated that they were involved in the creation of medical records through provision of radiotherapy treatment and patient's report.

Ten (100%) medical attendants indicated that they were relatively less involved in the creation of medical records but were rather involved in performing routine administrative and clinical tasks to help the medical specialists and other medical practitioners.

Forty five (100%) nurses indicated that they were involved in the creation of medical records by providing reports on inpatients.

(ii) The Integrity and Authenticity of the Medical Records Created at the Institute

The study sought to find out the integrity and authenticity of the medical records created at the Institute. The clinical staff indicated that each patient's file created at the institute was identified by its unique medical records number. Some of the respondents had the following remarks;

This is a very good way for managing patients in our Institution because you may find that there are two or more patients with similar names but through the use of medical records number it become easy to differentiate them.

We are responsible for retrieving the files from records office and sending them to the respective sections or wards. Once the patient is discharged his or her file must be returned to the records office. Therefore, the use of medical records number helps us in easy identification of patients since each patient is given their own unique number.

We receive patient files from the medical records offices then we use medical records identification number to differentiate between one patient and another.

Ten 10 (100%) medical specialists, 5 (100%) medical attendants and 5 (100%) medical officers were of the view that integrity and authenticity of the medical records was achieved by cross checking between the unique identification numbers that were provided in the medical form.

(iii) Effectiveness of the Tracking System

An attempt was made to ascertain whether there was an effective tracking system. Forty (89%) out of 45 nurses were of the view that the tracking system at the

institute was weak since there was time when patient files were not returned to records offices from different clinical sections.

A typical response was as follows;

We nurses are the ones who are responsible for borrowing and returning of the files to the records office. Still you may find among us some who are reluctant in returning the borrowed files to the records offices hence contributing to the loss or missing files.

Ten (100%) medical specialists were not satisfied with the tracking system at the Institute to the extent that they lost trust in the whole medical records management programme.

A typical response was as follows;

The tracking system seems to fail because we may have an appointment with patients at a specific day we fail to access the patient's file, for instance, radiotherapy treatment need consecutive approach whereby number of treatments depends on particular type of cancer. This can vary from a single treatment to a number of weeks for treatment. A course of radiotherapy may last for six or seven weeks. It is important that patients do not miss any appointments, particularly if the patients are having treatment concerning head and neck area. Therefore, their medical records must be well kept and maintained to make sure they are accessible on time to facilitate their care.

Again, 15 (100%) radiotherapists indicated that they were not satisfied with the tracking of the files at the Institute. This was illustrated by the following remark;

Sometimes radiotherapy is given on its own or it may be given alongside other treatment. Radiotherapy may be given before surgery to shrink a tumour or after surgery to stop the growth of cancer cells that may remain. It can also be given before, during or after chemotherapy (anti- cancer drugs) or hormone treatment

to improve overall results. Therefore due to multiple treatments, the medical files can be moved from one section to another without the prior knowledge of the records officers hence lead to loss or misfile which in turn affect patient care.

Eight (80%) out of 10 medical attendants were not satisfied with the tracking of the files at the Institute, and this was corroborated by the following remark;

The issue of tracking the files is too weak to the extent that it affects negatively the clinical performance.

We found one day a patient was asked by the records staff to identify the last day he/she visited the Institute and in which section so as to help with retrieving of the files.

Five (100%) medical officers indicated that there were some inadequacies in the whole tracking system at the Institute which undermined patient care. In the same vein, 5 (100%) radiographers stated that there were cases of misfiling due to a weak tracking system.

It was observed that there were challenges in the tracking system that undermined patient care.

(iv) Skills in Relation to Management of Medical Records

The study sought to find out from the clinical staff the possession of the required potential skills in relation to the management of medical records. All clinical staff agreed that they did not have any medical records management skills.

The researcher observed that there were no strategies for development of Institutional medical records management policy or adoption from any other health Institution.

4.4 CONTRIBUTIONS THAT MEDICAL RECORDS MANAGEMENT PROVIDE TO PATIENT CARE AT THE INSTITUTE

The second objective of the study was to examine the contributions that medical records management provided to patient care at Ocean Road Cancer Institute. To achieve this objective the participants were interviewed on various aspects regarding the significance of medical records and the role of medical records management.

4.4.1 Data from Medical Records Staff

The study sought to find out from the medical records staff the importance of medical records. Ten (100%) medical records staff acknowledged that medical records played a significant role in their daily performance.

Some of the contributions of medical records management that were cited included:

- Medical records especially cancer related records at our Institute support cooperation between the different sections relating to the labour shared care of cancer patients.
- Help to improve quality and efficiency of cancer care.
- Help to promote research and development in oncology.
- Help to improve training and education.

The study further sought from the medical records staff the degree to which existing medical records management programme supported patient care. Ten (100%) medical records staff had the view that the existing medical records management program supported patient care.

A typical response was as follows;

It is true that the medical records management support patient care in our institution by ensuring that all medical records are well kept considering content, context and structure. Medical records play a significant role in achieving of institutional goal though there are some challenges faced the whole programme. Therefore some measures must be taken to improve the management of medical records at the Institute.

The researcher observed that the role of medical records management started when a patient made the first visit to the Institute after submitting his/her medical information to the records office. Other procedures then followed such as diagnosis, treatment and care.

4.4.2 Data from Clinical Staff

(i) Importance of Creating Medical Records

Five (100%) medical officers were of the view that medical records were of significant benefit. The following were some of the remarks;

The Institute use medical records in the conduct of its business to enable decisions to be made in relation to patient care. The Institute also uses medical records to support accountability and legal requirement, to respond to challenges made against them whether in a court of law, legislators, regulations or civil society, monitoring or assess performance of an Institution as well as individuals and provide access to precedents or previous work and thus save time and money by eliminating the need to create resources once again.

The medical records are regarded as a powerful tool that allows clinical officers to track the patient's medical history and identify problems or patterns that may help determine the course of health care.....Medical records play a significance role to enable clinical officers to provide quality patient care..... It is a living document that tells the story of the patient and facilitates each encounter they have with health professionals involved in their care..... Medical records help to meet all legal, regulatory and auditing requirements... Most importantly it contributes to

comprehensive and high quality care for patients by optimizing the use of resources, improving efficiency and coordination in team-based and inter professional settings, and facilitating research.

Medical records play a significant role in follow-up visit whereby documentation focus on response to therapy, changes in condition or symptoms, new health issues, changes in medications or allergies, documentation of review of investigations, and an ongoing management plan.

Medical records provide documentation that a patient was seen or a test was performed.

Medical records are used as a medium of communication among different clinicians as well as ancillary professionals (i.e., nurses, physical therapists, and respiratory therapists) who see the patient.

Medical record serves as a legal record in the event of claims due to malpractice or occupational injury.

Medical records are used to abstract data for medical research.

(ii)View on How Medical Records Management Support Patient Care

Five (100%) medical officers agreed that they were supported by medical records management programme to accomplish their responsibilities. This can be illustrated by this remark;

We do appreciate the existing medical records management at the Institute and how it supports our daily operations which include diagnosis, treatments and care. We depend on the accurate, authentic, static, unique, timely and reliable medical records so as to perform our duties effectively and in a timely manner.

The researcher observed that though clinical staff were committed in fulfilling their responsibilities still there were some inadequacies that faced the medical records management programme and to some extent negatively affected their performance.

4.5 INTEGRATION OF ICTs IN THE MANAGEMENT AND USE OF MEDICAL RECORDS IN SUPPORTING PATIENT CARE

The third objective of the study was to determine the integration of ICTs in the management and use of medical records. In achieving this respondents were interviewed on various aspects of computerization and electronic records management.

4.5.1 Data from Medical Records Staff

(i) Computerization in the Management of Medical Records

Ten (100%) medical records staff acknowledged that the medical records system was largely manual but there were some medical records activities that were computerized through Can Reg5 software though it was not integrated with records management processes. They further indicated that Can Reg5 software lacked record keeping functionalities.

Eight (80%) of the medical records staff were of the view that effective patient management was being undermined by use of manual systems which they described as slow and frustrating besides contributing significantly to duplication of information. Some respondents also indicated that effective patient management was dependent on comprehensive medical history of a patient which needed to be shared among healthcare givers.

The respondents were of the view that the use of manual systems hampered information sharing in the following ways; the patient record could only be in one place at a time and could only be used by one user at a time; the logistics of moving

the record from one place to another were sometimes slow and in some cases cumbersome. The respondents felt that this was a major cause of delay in service delivery which would otherwise be easily facilitated with full adaption of ICTs.

In addition, 8 (80%) Medical records staff were of the view that given the understanding of medical records, electronic software bearing medical record keeping functionalities could be more suitable. They indicated that the high rate of interaction with clinical activities required speedy capture, processing and dissemination of patient information and could not be effective in such a low ICT setting. They also pointed out that there was an increasing trend of clinical research activities at the Institute most of which were based on medical records. It came out clearly from the respondents that retrieval of medical records for research from the previous records office had been characterized by what they described as long hours of searching. They were of the view that implementation of an electronic records management system that was capable of keeping medical records could be the solution to proper medical records at the institute which in turn could increase efficient and effective patient care.

4.5.2 Data from Clinical Staff

The clinical staff agreed that internet, intranet, and local area networks were used in addition to emails and faxes to communicate but there was no integration of ICTs in the management and use of medical records. They further said;

The integration of ICTs in the management and use of medical records could increase efficient and effective patient care since the computerization could improve the smooth transfer of information

from one section to another. This is because electronic records enable clinical staff to access quality, timely, effective and efficient records.

During a follow-up patient we normally need medical records to check the medical history of the patient before commencing with the follow-up treatment or any new consultation. In order to save time, we must have quick access to the records to avoid long patient waiting time, this could be possible if medical records are computerized and managed in electronic form.

There are many potential benefits of the electronic medical records management system. Unlike the paper record, it can potentially be used by anyone who needs it at any time. It can also be accessed easily from different sections. Furthermore, they described that, with the availability of the entire patient's data, new views and other summaries can be generated instantaneously. In addition to benefiting the individual patient, the electronic medical records system is also likely to benefit the larger population for instance; clinical research will likely be enhanced as researchers have easier access to information about patients that will increase understanding of the disease and its treatment.

Computerization of medical records may simplify communication between clinical staffs such as to notify members of the health care team when prescribed medication is harmful to a patient or when a patient has a drug allergy.

It was observed that the Institute used Can Reg5 which is an open source tool to input, store, and check and analyze cancer registry data. It has modules to do data entry; quality control, consistency checks and basic analysis of the data.

4.6 CHALLENGES FACED IN THE MANAGEMENT OF MEDICAL RECORDS AT OCEAN ROAD CANCER INSTITUTE

The fourth objective of the study was to find out the challenges faced in the management of medical records at the institute. The responses revealed challenges that were experienced at the institute.

4.6.1 Data from Medical Records Staff

The researcher sought to find out from the medical records staff challenges that were faced in the management of the medical records.

Typical responses were as follows;

- i. There is unavailability of medical records management policy.
- ii. Nonexistence of medical records retention and disposal schedule.
- iii. Inadequate space allocated for medical records keeping.
- iv. Shortage of medical records manuals and guidelines.
- v. Poor tracking system associated with no application of tracer cards.
- vi. Nonexistence of a records centre at the Institute to provide a low cost storage for medical records.
- vii. Lack ICTs integration in medical records and clinical care activities across all sections so as to facilitate patient care.
- viii. Shortage of regular training of medical records staff.
- ix. Lack of written disaster preparedness plan which significantly exposed the medical records into risk against disasters.

Ten (100%) medical records staff were of the view that although their key responsibility was to manage medical records still the existence of two records offices made them walk frequently from main records office to NHIF records office in search for missing files. This happened when borrowed files by clinical officers in their sections were not returned on time to the respective records office, as observed by one respondent that;

You may find that patients have attended different sections for different treatment and care. It is possible that if a file is used at

one treatment section might delay there and the patient file might not be traced at the next section with ease. The other noted problem is where files opened under NHIF were being mixed up with those in the main records office instead of being taken to NHIF records office.

Ten (100%) medical records staff indicated that inadequate opportunities for further training and in adequate ICTs skills hindered proper medical records management. They were of the view that short and further training to medical records staff could help them in acquiring modern skills in the management of medical records.

A typical response was as follows;

We are diploma holders with inadequate ICTs skills and no medical records training at degree levels.

The respondents were of the view that opportunities for further training and ICT training on medical records would help to equip them with necessary knowledge and skills in medical records management.

4.6.2 Data from Clinical Staff

Clinical staff at Ocean Road Cancer Institute were generally well aware of the value of medical records in fulfilling their duties which included diagnosis, treatment and patient care. However, they were not satisfied with situation that existed at the Institute.

Three (60%) out of 5 radiographers pointed out that there were some challenges in identifying which file belongs to who due to a mismatch in identification cards and

the patient's demographic details found in the file. One respondent made the following remark;

You may find that a patient's name which appears in the patient's file does not match with the referral letter's name and or identification card which in turn minimize confidence in fulfilling clinical duties.

Five (100%) medical officers pointed out that there was misplacement and loss of medical records which had negatively affected patient care at the Institute. To cite one respondent;

Medical records are needed for treatment and follow-up of patients. There must be ways of reducing their misplacement or loss because a patient may be required to re attend treatment, but at times the previous records are not easily retrieved.

Fifteen (100%) Radiotherapist indicated that they had shortage of skills in medical records management. They indicated that there was no training course regarding medical records management that has been offered to them. This significantly affected negatively proper medical records management. Ten (100%) medical specialists were not satisfied with the tracking system of the files at the Institute due to files misplacement and losses.

A typical responses was as follows;

The issues of tracking the files seem to fail because it may happen that, a medical specialist may have an appointment with patient at a specific day but he/she may fail to access the patient's file. For instance, radiotherapy treatment needs consecutive approach whereby numbers of treatments depend on particular type of cancer. This can vary from a single treatment to a number of weeks for treatment. A course of radiotherapy may last for six or seven weeks. It is important that patient does not miss any appointment, particularly if the patient is having treatment concerning head and neck area. Therefore, the medical records

must be well kept and maintained to make sure they are accessible on time to facilitate patient care.

Eight (80%) out of 10 medical attendants had the same view concerning tracking of the files at the Institute and provided the following remarks;

The tracking system of the files is too weak to the extent that it affects negatively the clinical performance.

Forty five (100%) nurses stated that there were no medical records management manuals and guidelines for the management of medical records at the Institute.

A typical response was as follows;

Shortage of those tools affect negatively our duties because we do not have any records management skills therefore we hoped that these tools could enlighten us in handling medical records.

Ten (100%) medical specialists indicated that inadequate use of ICTs was among the challenges that undermined patient care at the Institute due to slow services provided by manual system which was frustrating. They further indicated that patient care depended on comprehensive medical history of a patient which needed to be shared among clinical staff. The respondents had the view that the use of manual systems hindered information sharing in different ways; the patient record could only be in one place at a time and could only be used by one user at a time; the logistics of moving the record from one place to another were sometimes slow and in some cases record were not accessed at all. The respondents felt that this was a major cause of delay in supporting patient care which would otherwise be easily facilitated with full execution of ICT.

4.7 STRATEGIES FOR IMPROVEMENT OF MEDICAL RECORDS MANAGEMENT IN SUPPORTING PATIENT CARE AT THE INSTITUTE

The study sought to find out from the respondents how the medical records management could be improved at Ocean Road Cancer Institute despite the challenges revealed from the findings.

4.7.1 Data from Medical Records Staff

All medical records staff made the following suggestions;

- i. Formulate the medical records management policy that clearly defines the commitments for each individual within the Institute so as to facilitate patient care.
- ii. Development of medical record retention schedule.
- iii. Creation of more space for health survival of medical records since records are created daily due to increased number of patients at the Institute.
- iv. The Institute must develop medical records manuals and guidelines.
- v. Application of files control movement tools such as tracer cards so as to minimize loss of the files.
- vi. There must be establishment of a records centre at the Institute to provide a low cost storage for medical records.
- vii. There must be integration of ICTs in medical records and clinical care activities across all sections so as to facilitate patient care.
- viii. Regular training of medical records staff.

- ix. Formulation of disaster preparedness plan at the Institute.

4.7.2 Data from Clinical Staff

All clinical staff were in agreement that the following must be done,

- i. Training of all clinical staffs on the aspects of medical records management in relation to patient care.
- ii. Computerization and integration of medical records activities at the Institute.
- iii. Application of files control movement tools such as tracer cards so as to minimize loss of the files.
- iv. There must be consistence between the patient name written on the top of the files and the patient's name found in the medical records forms.

4.8 DISCUSSION AND INTERPRETATION OF FINDINGS

The purpose of analyzing data is to obtain usable and useful information. The analysis, irrespective of whether the data is qualitative or quantitative may: describe and summarizes the data, identify relationships between variables, compare variables and identify the difference between variables forecast outcomes

4.8.1 Management of Medical Records at Ocean Road Cancer Institute

The findings of the study can be interpreted to mean that medical records staff were familiar with the existing centralized records system. In support of this, IRMT (1999) indicates that the principle of maintaining a single file for each individual patient is crucial to the continuity of patient care. Due to inadequacies in the records management system which resulted in poor patient care the findings could be interpreted to mean that, there was no mechanism to spell out responsibility,

commitments, boundaries, custody, confidentiality and duties for records staffs because there was no medical records management policy. For instance, 10 (100%) medical records staff were of the view that sound medical records management requires well-spelt out policies to govern their systematic management. Jenkinson (1996);Tanzania National Records and Archives Management policy (2011) underscore the fact that lack of a records management policy contributes to poor records management practices in the public service. This has resulted in delays regarding decision making processes, denial of citizens' rights, corruption, lack of accountability and unauthorized access to government information. Thus, this undermines the government efforts to enforce good governance and the rule of law. For successful implementation of patient care there is an urgent need for the institute to develop a records management policy to clearly define commitments of records management staffs and other stake holders. This calls for urgent formulation of a medical records management policy.

According to CPSO (2012) policy explains how medical records must be kept, outlining general requirements and considerations about the collection, use, storage, and disclosure of patients' personal health information, with respect to both paper and electronic records. It outlines requirements with regard to access and retention periods to ensure continuity of care for patients. A policy concludes by listing requirements for the contents of medical records, explaining what must be included in records and how it must be documented. Further, the CPSBC (2014) emphasizes that failure to address issues of custody, confidentiality and enduring access of medical records may be considered professional misconduct. In all situations where a

clinical officer who is creating a medical record is not the owner of the records, issues of custody, confidentiality and enduring access by individual clinical staff and patients must be documented in a formal contract with the medical records service providers.

The findings from the first objective of the study can be interpreted to mean that the medical records offices were too small and were congested with records. For instance, 7 (70%) medical records staff were not satisfied with the space allocated for records keeping. This implied that the medical records management was given little attention because the space allocated did not allow easy storage and retrieval of the records. It is a fact that proper medical records storage and a secure environment facilitate ease location for administrative reference, maintenance of file integrity, and preservation of the record media. Medical records office must maintain appropriate storage capacity for its own records. This is supported by CPSO (2012) which states that medical records officers are ultimately responsible for ensuring that medical records are stored and maintained according to legal requirements and the principles set out. Medical records must be stored in a safe and secure environment to ensure physical and logical integrity and confidentiality. The medical records department must develop records management rules to regulate who may gain access to records and what they may do according to their role, responsibilities, and the authority they have. At minimum, rules must ensure that patient records, in electronic or paper form, are readily available and producible when legitimate use is required, and that reasonable steps are taken to ensure they are protected from theft, loss and unauthorized use or disclosure, including copying, modification or disposal.

In addition, the findings of the study from the first objective could be interpreted to mean that medical records staff were not conscious of the role of a retention and disposal schedule. As a result this must have contributed to personal judgment on such matters as destruction of medical records. This implies some medical records can be destroyed yet they could be vital in the provision of patient care. For instance, 10 (100%) medical records staff acknowledged that there was no existence of medical records retention schedule at the Institute. The findings of the study could further imply that lack of a medical records retention schedule may have resulted in poor utilization of records office space and equipment and as a result negatively affected storage space. Medical records staff were of the view that the institute was supposed to establish the medical records retention schedule in line with national and international standards. It is obvious that the Institutions cannot continue keeping records they create forever. Library of Virginia (2014) observes that records cannot be destroyed before the stated period nor can they be retained longer than the stated period unless they are involved in an investigation, litigation, and audit.

A retention schedule establishes a systematic method of controlling a record from its creation to its final disposition. Implementing records retention and disposition schedules is the most important part of a records management plan. Library of Virginia (2014) identifies the benefits of medical records retention schedules as help to; verify that records needed for legal, fiscal, or administrative purposes will not be destroyed prematurely, allow records that are no longer useful to be destroyed legally and reduces the space and equipment necessary for filing records in paper or electronic format. The schedules also determines when records may be destroyed,

transferred to inactive storage, or transferred to permanent storage and makes sound and logical reformatting decisions more easily and provides information for an essential records protection plan and ensures the preservation of records with historical and research value.

Magaya (2010) states that disposal and retention scheduling is the most satisfactory method for controlling the accumulation of records by providing economical storage for dormant records, disposal of obsolete and useless records, as well as identifying and preserving important and valuable records. It is advisable for each organization to develop this programme for enhancing effective records management. ISO 15489-1 (2001) points out that records management systems should be capable of facilitating and implementing decisions on the retention or disposition of records. It should also be possible where appropriate for disposition to be activated automatically. Systems should provide audit trails or other methods to track completed disposition actions.

The findings from the first objective may further be interpreted to mean that the medical records management programme was not given much attention since there was poor tracking system at the Institute which in turn demonstrated minimal control for the movement of the files and eventually undermined patient care due to misplacement of the files. For instance 8 (80%) medical records staff indicated that there was poor tracking system at the Institute. The findings also confirm concerns by Kamatula (2013) who points out that most of the information needed for decisions cannot be timely retrieved due to poor records tracking system in place. Therefore,

the clinical staff were of the view that the institute must implement the use of tracer cards and regular update of file movement register book so as to be able to identify the current location of the files. Kamatula (2013) confirmed that tracking of records and usage within records management systems is a security measure for public offices, the use of records is a transaction that needs to be captured by the records management system. Also the use of medical records needs to be documented for audit and accountability purposes and to provide evidence that record's integrity was being monitored and maintained. IRMT (1999); Johns (2002) indicate that controls are necessary to ensure that the whereabouts of records borrowed from the records department are known at all times and that all items borrowed are duly returned.

Roper and Millar (1999) point out that controls are necessary to ensure that the whereabouts of records borrowed from the records department are known at all times and that all items borrowed are duly returned. However, from the findings of the first objective, it could be interpreted to mean that there was no effective and efficient system for managing medical records for its patients and other research work on cancer management. Consequently, this significantly undermined patient care since most of the patients who visited the Institute were patients who needed urgent care because of their cancer disease and illness.

Based on the findings from the first objective it can be clearly interpreted to mean that the medical records staff at the Institute were not familiar with the importance of having a disaster preparedness plan. The Institute did not have a written disaster preparedness plan as indicated by the medical records staff. For instance, 10 (100%)

medical records staff indicated that the Institute had not put in place a written disaster preparedness plan but there were fire extinguishers at the records office. Unfortunately records staff were not trained on how to use the fire extinguishers during disaster occurrence. The findings can also be interpreted to mean the Institute was at risk of losing its vital records because there were no mechanisms to protect the records. This implied that the medical records at the Institute faced the risk of being harmed as a result of any catastrophic event.

4.8.2 Contributions that Medical Records Management Provide to Patient Care at the Institute

The findings from the second objective can be interpreted to mean that respondents were familiar with the role that medical records management played in supporting patient care at the Institute. This is supported by IRMT (1999) which states that the aims of a records and archives management system include the creation and maintenance of authoritative and reliable records in an accessible, intelligible and usable form for as long as they are required to support the business and accountability requirements of the organization, efficiency and economy in the management of records through eliminating duplication of effort.

The findings could further mean that there were inadequacies in the existing medical records management programme at Ocean Road Cancer Institute. For instance, there was no medical records management policy at the Institute as 10 (100%) medical records staff indicated that the Institute lacked medical records management policy among others. This implied that the management of medical records was being undermined due to lack of this important tool. This is supported by Kamatula (2013)

who states that in African countries there are poor classification systems and unsatisfactory systems for managing the creation, use and storage of records. This affected public service delivery as there were delays in important decision making or at times no decisions were taken due to inadequate records.

Along with this Roper and Millar (1999); Mnjama (2005) observe that in many African countries the public sector recordkeeping systems are not just weak but have actually collapsed and do not function at all. They further note that the inefficient records management is due to outdated legislation, lack of recognition by national governments of the role played by records and archival institutions and lack of trained staff. These weaknesses posed serious problems for government performance and service delivery.

Based on the findings from the second objective it can be interpreted to mean that medical records staffs were well aware of the role that medical records played in supporting patient care. For instance, 10 (100%) medical records staff stated that the role of medical records included supporting cooperation between the different sections relating to the labour-shared care of cancer patients, improve quality and efficiency of cancer care, promote research and development in oncology and improve training and education. Furthermore, 10 (100%) Medical Specialists, 5 (100%) Medical Officers, 45 (100%) Nurses, 15 (100%) Radiotherapist, 5 (100%) Radiographers, and 10 (100%) Medical Attendants held a similar view that the Institute used medical records in the conduct of its business to enable decisions to be made in relation to patient care. The Institute also used medical records to support

accountability and legal requirements. This is supported by IRMT (1999) which states that within both government and the private sector records are created and used on a daily basis to document actions, confirm decisions, identify rights and responsibilities and communicate information.

Kemoni and Ngulube (2007); IRMT (1999) point out that without records governments and businesses today cannot operate. Governments use records for such wide-ranging purposes as documenting the work of employees, confirming pensions, leave and health benefits, confirming or reviewing policies and procedures, confirming citizens' rights, such as benefits or land ownership and providing information about past actions or decisions. In addition, Magaya (2010) confirms the importance of records by stating that organizations use records in the conduct of business to enable decisions to be made and appropriate actions taken. Kennedy and schauder (1994);(1998) point out that records provide access to precedents or previous work and thus save time and money by eliminating the need to create resources once again. Organizations also use records to support accountability, when they need to justify that they have accomplished their obligations or complied with best practice. Records are also used to monitor or assess performance of an organization as well as individuals in an organization.

Despite being used to transact business of an organization records can also be used for cultural purposes, research or to promote awareness and restore corporate history. WHO (2006) identifies the main purpose of the medical record as: 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. The importance of medical records however is supported by CPSO (2012) which states that most importantly, however, medical records contribute to comprehensive and high quality care for patients by optimizing the use of resources, improving efficiency and coordination in team-based and inter professional settings, and facilitating research. In addition, medical records are used in the management and planning of health care facilities and services for medical research and the production of health care statistics.

Records are also a prerequisite for improvement of transparency, accountability and good governance. IRMT (1999) emphasizes that without accurate, comprehensive, up-to-date and accessible patient case notes, medical personnel may not offer the best treatment or may in fact misdiagnose a condition, which can have serious consequences. In the same tone, Magaya (2010) states that records management should ensure the management of public records from their creation through to their final disposition. Organizations create records as a result of day-to-day activities which need to be captured, managed and preserved in an organized system. In addition, proper records management is important for maintaining their integrity and authenticity which retains their value as retrievable public records. He further states that the benefit of good records management includes: efficiency in decision making, faster access to information easy retrieval and less staff time wastage in searching for records.

4.8.3 Integration of ICTs in the Management and Use of Medical Records in Patient Care

Based on the findings from the third objective the study can be interpreted to mean that Ocean Road Cancer Institute was not fully committed to the integration of ICTs into medical records processes. Thus the continued application of manual systems in the whole process of managing medical records implied that the Institute could possibly lose trust and its reputation among Tanzanians due to slow services offered by the manual system. For instance, 8 (80%) medical records staff held the view that effective patient management was being undermined by use of manual systems which they described as slow and frustrating besides contributing significantly to duplication of information. Furthermore, the institute installed can reg5 system which did not have records management functionalities to enable the capturing of authentic and reliable medical records but was more suited to capture of patients' demographic details. The findings could further be interpreted to imply that shortage of trained medical records staff on modern methods of managing electronic medical records affected their ability to adapt to the new way of operations.

The respondents were of the view that the use of manual systems hampered information sharing in the following ways; the patient record could only be in one place at a time and could only be used by one user at a time; the logistics of moving the record from one place to another were sometimes slow and cumbersome. For instance, 10 (100%) Medical Specialists, 5 (100%) Medical Officers, 45 (100%) Nurses, 15 (100%) Radiotherapist, 5 (100%) Radiographers and 10 (100%) Medical Attendants were of the view that the use of electronic medical records system at the

Institute could increase efficiency and effectiveness in patient care since computerisation could improve the smooth transfer of information from one section to another. This is because electronic records enable clinical staff to access quality, timely, effective and efficient records.

ICTs play a vital role in medical records keeping unlike paper record. An electronic system can potentially be used by anyone who needs it at any time. Roper and Millar (1999) point out that the use of electronic records will allow virtually instant access to medical records by any clinician or other authorized user and will also allow access by multiple users at the same time. The risk of lost or misplaced files will largely be eliminated, and bulk storage areas will no longer be required. It will also be possible for X-rays and other images to be incorporated into the electronic record. Where electronic patient records make use of database techniques, validation of input entries can be used to ensure that vital elements are not omitted from the records. A database structure also allows the retrieval of information from the record in a variety of ways.

White Paper Fall (2005) states that electronic medical records files can be readily accessed from anywhere, local or remote, across a communications link or network. Data that are stored in electronic formats can be retrieved electronically. More than one user at a time can have access to them and all service providers can share the same records hence improve patient care. Furthermore, medical records created by multiple providers in different locations and units can be linked and shared to create a single record for the individual. The problem of record fragmentation can be

resolved, and patient care can be shared among providers. Furthermore, all the graphic data (e.g., images), incoming letters (e.g., referrals), and auditory data (e.g., heart sounds, spoken notes) relating to a patient can be linked to his or her electronic record file using multimedia techniques.

IJMIE (2012) points out that an electronic record management system is an essential requirement in the fast growing demand of information. All records need to be scanned and developed into an Electronic Document Management System which can be searched by Keywords, Phrases, date etc. An office manual can be developed on the Electronic Documents/Records Management System. This will save lots of time spent in searching for records. Making records available at the click of a button will also increase transparency. Unlike the paper records, electronic medical records can potentially be used by anyone who needs them at any time. Records can also be accessed easily from remote sites. It is unlikely that data will be lost or misplaced. With an appropriate back-up mechanism, it should serve as a permanent record of an individual's interaction with the health care system. Furthermore, with the availability of the entire patient's data, new views and other summaries can be generated instantaneously. In addition to benefiting the individual patient, the electronic medical records are also likely to benefit the larger population. Clinical research will likely be enhanced, as researchers have easier access to information about patients that will increase understanding of disease and its treatment.

4.8.4 Challenges Faced in the Management of Medical Records at Ocean Road Cancer Institute

Based on the findings from the fourth objective the study can be interpreted to mean that the Institute was faced by numerous challenges which hampered effective and efficient patient care given that there is nothing that can be done without the availability of accurate and reliable medical records. However, shortage of important tools for the management of medical records could result into inpatients not getting satisfied with the services offered at the Institute.

The study established that the Institute did not have in place a medical records management policy as confirmed by 10 (100%). ISO (2001) (1) emphasizes that organizations should define and document a policy for records management. The objective of the policy should be the creation and management of authentic, reliable and usable records, capable of supporting business functions and activities for as long as they are required. This is especially important in the current milieu where agency personnel must no longer manage just paper-based records, but the proliferation of records in electronic form in conjunction with paper, microform, and other formats. Magaya (2010) states that sound records management in an organization includes: setting policies and standards, assigning responsibilities and authorities, establishing and promulgating procedures and guidelines, providing a range of services relating to the management and use of records, designing, implementing and administering specialized systems for managing records; and integrating records management into business systems and processes. Governmental agencies should develop, implement, and maintain a codified set of records

management policies and procedures for effective management of records and information.

The study established that the Institute had not put in place medical records retention and disposal schedule as indicated by 10 (100%) medical records staff. NECCC (2004) states that disposition is the final stage in any record's lifecycle and proper disposition is an important part of any records management program. All of the records an agency creates should be described on a records retention schedule as noted above. The schedule establishes the length of time the records should be retained by the agency. For records with enduring value, usually identified as permanent in records retention schedules, disposition may involve transfer to an archival facility. Agencies need to contact their archival institution for proper transfer instructions. Most of the records an agency produces will be destroyed, or deleted in the case of electronic records, at the end of their lifecycle. Agencies need to make sure that they have written policies in place that outline the procedures to properly dispose of their records, and they must make records destruction part of the normal course of business. In other words records destruction must occur on a regular basis following the records retention schedules, not randomly or on an ad hoc basis.

NECCC (2004) states that the best times to dispose of records are at the end of fiscal or calendar years; the end of an audit (following the release of the final report); or, in the case of government agencies, at the change of administrations, but only if the retention of the records has expired and appropriate legal permission has been

granted for the destruction. Records destruction should always be suspended in the wake of legal or administrative action against the records involved, even if the retention period has expired.

In addition, the findings can be interpreted to mean the Institute did not put in place medical records manuals and other guiding tools. Shortage of medical records manuals and guidelines at the Institute significantly and negatively affected the medical records management programme.

Shortage of regular and continuing training in medical records management was indicated as one of the challenges that records staff faced at the Institute. NECCC (2004) states that in the past the responsibilities of records management rested upon a professional records management unit also known as a central files unit, and/or administrative/secretarial staff of a government agency. Gone are the days when administrative support staff would type, file, and eventually transfer records to some form of longer-term storage or destroy the record through appropriate means. Now the vast majority of government agency personnel have computers on their desktop where they are creating, receiving, and storing records on a daily basis, from documents that need to be printed out and signed to e-mails. It is problematic enough working in a hybrid world where records are “born” electronically and converted to hardcopy for distribution and retention. Now governmental agencies are in the process of deploying electronic records management systems where the records creator will intimately be involved in the records management process from the start.

The findings can be interpreted to mean that there were no proper strategies to equip the medical records staff with new knowledge which undermined their performance. Without the appropriate training these electronic records management systems will suffer from the “garbage in-garbage out” syndrome. A study by Kemoni (1999) at Moi Teaching and Referral Hospital in Eldoret, Kenya revealed that some of the staff involved in the management of medical records had no formal training in records management. Furthermore, IRMT (1999) notes that hospitals deal with the life and health of their patients, good medical care relies on well-trained doctors and nurses and on high-quality facilities and equipment. Good medical care also relies on good record keeping. Without accurate, comprehensive up-to-date and accessible patient case notes, medical personnel may not offer the best treatment or may in fact misdiagnose a condition, which can have serious consequences. Records management governs the practice of records managers and of any person who creates or uses records in the course of their business activities.

The findings can be interpreted to mean that there was inadequate storage space and that this hampered easy retrieval of medical records and access to information. This is supported by Wema (2003) who states that due to the absence of a records centre the congested and poorly organized universities registries lead to poor organizing, storing and retrieving of records as a result of delays in locating and retrieving of the records. This same analogy can be applied to Ocean Road Cancer Institute.

Missing of the files seemed to be the chronic disease in records management units at Ocean Road Cancer Institute. The findings revealed that there were missing and/ or

lost files due to poor medical records management system. For instance, 8 (80%) medical records staff acknowledged the existence of poor tracking system at the Institute. Poor tracking system associated with no application of tracer cards played a significant role in the files movements' control. For instance, 40 (89%) nurses were of the view that the tracking system at the institute was weak since there was time when patient files were not returned to the records office from different clinical sections. Ten (100%) medical specialists were not satisfied with the tracking of the files within the Institution to the extent that they lost trust with the whole medical records management programme. This confirmed the concern from Mbugua (2012) who established that the quality of medical records at KNH in terms of completeness, authenticity and reliability was inadequate which impacted negatively on healthcare delivery.

A study by Marutha (2011) in the public health sector of the Limpopo province in South Africa revealed that poor tracking for paper record movement, among others, negatively affected timely and effective health care services. This resulted in long patient waiting times and patients being treated without their medical history records. Furthermore, ISO (2001) states that records systems should provide timely and efficient access to, and retrieval of records needed in the continuing conduct of business and to satisfy related accountability requirements. Systems should include and apply controls on access to ensure that the integrity of the records is not compromised. The ISO further point out that tracking of the movement and use of records within a records system is required to: identify outstanding action required, enable retrieval of a record, prevent loss of records, monitor usage for systems

maintenance and security, and maintain an auditable trail of records transactions (i.e. capture or registration, classification, indexing, storage, access and use, migration and disposition), and maintain capacity to identify the operational origins of individual records where systems have been amalgamated or migrated.

The findings can be interpreted to mean that the Institute did not have a medical records centre. This is supported by Wema (2003) who notes that absence of a records centre and poorly organized universities registries pose serious problems as a result delays in locating and retrieving the records. Furthermore, Roper and Millar (1999) state that hospitals should make local arrangements for storage of their semi current records.

The findings can be interpreted to mean that Ocean Road Cancer Institute has not fully implemented the ICTs infrastructures. For instance, 10 (100%) medical records staff state that the medical records systems were largely manual but acknowledged that some medical records activities were computerized through Can Reg5 software. They also noted that Can Reg5 system software used at the Institute had no record keeping functionalities. The respondents indicated that although the system had the capability of capturing demographic details at the point of registration still the system did not have the capability to capture patients' progress report. With the introduction of ICTs, records management moved from manual to electronic format, different records were now preserved in a range of technological systems, e.g. emails, databases, etc., and archived for later access. Moreover, 10 (100%) Medical Specialists, 5 (100%) Medical Officers, 45 (100%) Nurses, 15 (100%)

Radiotherapist, 5 (100%) Radiographers, and 10 (100%) Medical Attendants were of the view that the use of electronic medical records system at the Institute could increase efficiency and effectiveness of patient care since computerisation could smoothen transfer of information from one section to another.

The findings from the fourth objective can be interpreted to mean that with the continued use of manual systems the Institute was likely to lose its reputation from Tanzanians due to slow services offered. Moreover, the implementation of an electronic system which lacked medical records functionalities for capturing clinical information as records could imply that the reliability of medical records could not be trusted. As a result, patient care could be undermined. Roper and Millar (1999) state that traditionally paper records were managed long after creation, once they were physically filed into agency filing systems and began to take up valuable office space. This management typically consisted of transferring the records offsite to a records centre facility or warehouse dumping ground where they were forgotten. With electronic records, management must be included in system planning and implementation and must take place immediately upon creation as the agency classifies the information for further use. Lack of integration of ICTs in records management processes was indicated as one among the challenges that the Institute faced. For instance eight (80%) medical records staffs held the similar view that effective patient management was being undermined by use of manual systems which they described as slow and frustrating besides contributing significantly to duplication of information.

In addition, Mutula and Wamukoya (2005) underline the problems of managing electronic records as follows:

- i. Lack of standard practices and procedures in the management of electronic records;
- ii. Lack of long-term preservation of electronic records;
- iii. Lack of guidance on electronic records management by government agencies
- iv. Lack of policies and guidelines for the management of electronic records;
- v. Lack of awareness among records personnel about electronic records management
- vi. Lack of knowledge, competencies and skills in the management of electronic records ;
- vii. Mismanagement of electronic records leading to their loss;
- viii. Inability to determine appropriate hardware and software for e-records management.

Although the technological challenges in managing electronic records are formidable, the management issues are equally important. Electronic records are fragile. They cannot survive without active intervention to migrate the records on to new systems. This process is expensive and requires the implementation of policies and procedures that affect the working practices of the entire organization.

Hersh (1995) states that more significant problems with electronic medical records systems is the lack of standards to interchange information, while a number of standards exist to transmit pure data, such as diagnosis codes, test results, and billing

information, there is still no consensus in areas such as patient signs and symptoms, radiology and other test interpretation, and procedure codes. While some fear that electronic medical records will exacerbate this problem, others note that computer-based records with appropriate security are potentially more secure and at a minimum leave a trail of documentation of those who access them.

The findings can be interpreted to mean that the Institution was at a risk of losing its medical records due to inadequate disaster preparedness plan. For instance 10 (100%) medical records staff indicated that the Institute did not have in place a written disaster preparedness plan. The IRMT (1999) defines a disaster as an unexpected event with seriously destructive consequences. Thus, the physical security of the records must be paramount. Records must be kept in a secure environment and, if used during the day, must be returned to safe storage as soon as possible. Furthermore, Kilasi (2010) states that vital records management programme is a systematic approach to identifying, protecting and having available the vital records of an organization, especially in the aftermath of an emergency or disaster. Rope and Millar (1999) state that an emergency plan will ensure the right measures are taken at the right time in the event of an emergency or disaster. An emergency plan helps the organization to be ready. That is to take steps to remove the threat of damage to records and archives by identifying preventive measures that can be taken to improve the stability and security of records. It also helps the organization to respond, to protect undamaged materials and to stabilize the condition of damaged materials so that they may be recovered. It also outlines the work involved with recovery and the tasks of salvaging materials and cleaning and protecting them.

4.8.5 Strategies For Improvement Of Medical Records Management in Supporting Patient Care at the Institute

Based on the findings from the fifth objective the study suggests various strategies for improving medical records management in support of patient care at the Institute. It is clear that patient care could be supported greatly by sound medical records management. The respondents from medical records sections and clinical sections suggested the following strategies.

4.8.5.1 Medical Records Staff

- i. Formulate the medical records management policy that clearly defines the commitments for each individual within the Institute so as to facilitate patient care.
- ii. Development of medical record retention schedule.
- iii. Creation of more space for health survival of medical records since records are created daily due to increased number of patients at the Institute.
- iv. The Institute must develop medical records manuals and guidelines.
- v. Application of files control movement tools such as tracer cards so as to minimize loss of the files.
- vi. There must be establishment of a records centre at the Institute to provide a low cost storage for medical records.
- vii. There must be integration of ICTs in medical records and clinical care activities across all sections so as to facilitate patient care.
- viii. Regular training of medical records staff.

- ix. Formulation of disaster preparedness plan at the Institute.

4.8.5.2 Clinical Staff

- i. Training of all clinical staff on medical records management,
- ii. Computerization and integration of medical records activities at the Institute.
- iii. Establishing control procedures limiting access to the files and enhanced used of tracer cards so as to minimize loss of the files.
- iv. Ensuring consistency between patient names written on the files and the names found on the medical records forms.

4.9 CHAPTER SUMMARY

The chapter has presented, analyzed and provided an interpretation of research findings. The findings of the study revealed that medical records were considered important in the provision of patient care; they were not only useful in patient care but also in research, training, and budget preparation. It is apparent that there were a lot of challenges found at the Institute that implied that the Institute was not committed to aspects of medical records management which in turn affected patient care. The study suggests strategies for sound medical records management which include development and implementation of medical records policies, staff competency development, adoption of electronic medical records system, among others.

CHAPTER FIVE
SUMMARY OF RESEARCH FINDINGS, CONCLUSION AND
RECOMMENDATIONS

5.0 INTRODUCTION

This chapter provides a summary of research findings of the study; conclusion and recommendations. The chapter also makes suggestions for further research.

5.1 SUMMARY OF RESEARCH FINDINGS

This section summarizes research findings based on the research objectives in chapter one of this study.

5.1.1 Management of Medical Records at Ocean Road Cancer Institute

The Institute lacks effective and efficient systems for controlling and managing medical records for its patients and other research work on cancer management. However, the findings show that the management of medical records at the Institute was hampered by lack of a medical records management policy, medical records manuals and guidelines which were important documents for reference purposes. Consequently, this significantly undermined patient care since most of the patients who visited the Institute were those who needed extra care because they suffered from cancer.

5.1.2 Contributions that Medical Records Management Provide to Patient Care at the Institute

The existing medical records management program at Ocean Road Cancer Institute was deemed to support patient care. Medical records were relatively well kept to satisfy legal, administrative, and other records management requirements, thus facilitating ready accessibility for reference purposes and decision making by ultimately clinical staff. This in turn increased efficiency and effectiveness service delivery which improved patient care.

5.1.3 Integration of ICTs in the Management and Use of Medical Records in Patient Care

Ocean Road Cancer Institute has not fully integrated ICTs with medical records processes. The Institute makes use of internet, intranet, and local area networks which are linked to communication software to allow the medical records staff to communicate from their computers through emails and faxes. The Institute used Can Reg5 system. ICTs were used to support diagnosis, treatment and care.

5.1.4 Challenges Faced in the Management of Medical Records at the Ocean Road Cancer Institute

Medical records management programme at the Institute faced numerous challenges which negatively affected patient care at the Institute. The most significant ones for records staffs included, lack of medical records management policy, missing or loss of files due to multiple attendance at different clinic sections, among others.

5.1.5 Strategies for Improvement of Medical Records Management in Supporting Patient Care at the Institute

It was clear that patient care could be supported greatly by sound medical records management. This means that appropriate measures needed to be put in place to ensure proper medical records management through a continuum of care. The following were suggested as possible measures towards improvement of medical records management at the Institute.

- i. Establishment of a single medical records office at the same building which has two sections NHIF and common files so as to minimize walking from one records office to the other in search of the files.
- ii. Integration of ICTs in medical records processes and clinical activities across all clinical sections so as to improve patient care.
- iii. Formulation of a medical records management policy that clearly defines the responsibilities of each individual within the Institute so as to facilitate patient care.
- iv. Regular training of medical records staff on key aspects of medical records management in relation to ICTs application.
- v. Preparation of a medical record retention schedule.
- vi. Development of a written disaster preparedness plan at the Institute.
- vii. Preparation of a medical records procedure manual.
- viii. Training of all clinical staff on medical records management, computerization and integration of medical records activities at the Institute.

- ix. Establishing control procedures limiting access to the files and enhanced use of tracer cards so as to minimize loss of the files.
- x. Ensuring consistency between patient names written on the files and the names found on the medical records forms.

5.2 CONCLUSION

The mission of the Ocean Road Cancer Institute is to provide equitable, accessible, affordable and high quality services for early detection and cancer care to the public through prevention, research, education and treatment using modern technology and dedicated staff. The Institute therefore aims to manage preventable cancer and for cancer which has already occurred to cure sometimes. This calls for sound medical records management that ensures use, efficient, effective, and economical management of medical records in support of patient care.

The study revealed that there were some inadequacies in the whole process of medical records management since there was no medical records management policy. ISO 15489 (2001) states that an organization seeking to conform to this part of ISO 15489 should establish, document, maintain and promulgate policies, procedures and practices for records management to ensure that its business need for evidence, accountability and information about its activities is met. Furthermore, the Tanzania Records and Archives Management Policy (2011) points out that in order to have a reliable, authentic, integrity and usable records and archives to support governments decisions, the public shall ensure that records are created, acquired and maintained to meet policy, programme, service, business and accountability

requirements. It is also important to ensure they are relevant, reliable and comply with international records management standard ISO 15489. Therefore the study concluded that the management of medical records at the Institute was dominated by inadequacies and various strategies needed to be put in place so as to achieve sound medical records management.

It was also noted that there was a weak system in file movement control and as a result there were cases of missing or lost files. Based on this the study concluded that medical records were not retrieved on time hence this affected patient care at the Institute. Kamatula (2013) believes that most of the information needed for decision making cannot be retrieved on time due to poor records tracking system. Tanzania Records and Archives Management Policy (2011) concurs with Kamatula in that the use of records is a transaction that needs to be captured by the records management system. IRMT (1999) states that records must be authentic and the authenticity of a record is derived from the record keeping system in which it was created or received, maintained and used. A record is authentic if it can be verified that it is now exactly as it was when first transmitted or set aside for retention. For example, a letter received in an office may be date-stamped, registered and placed on a file. The file containing the letter is tracked throughout its use and stored when not in use in a records office.

This study has demonstrated that there was not enough storage space since the rooms were too small and congested with shelves. In addition, there was poor ventilation which affected well being of records. Based on the findings, the study concluded

that, medical records were poorly kept at the Institute. The CPSO (2012) states that medical record officers are ultimately responsible for ensuring that medical records are stored and maintained according to legal requirements as the principles set out in the policy. Medical records must be stored in a safe and secure environment to ensure physical and logical integrity and confidentiality.

This study confirmed that there was no medical records retention schedule in place. There were no retention periods indicating how long medical records should be kept. Thus, it can be concluded that the medical records management programme at the Institute was to a large extent inappropriate given the congestion in records office which led to delays in retrieval of records. Virginia Public Records Management Manual (2014) states that a retention schedule establishes a systematic method of controlling a record from its creation to its final disposition. Records cannot be destroyed before the stated period, nor can they be retained longer than the stated period unless they are involved in an investigation, litigation or audit. Magaya (2012) concurs by stating that retention scheduling is the most satisfactory method for controlling the accumulation of records by providing economical storage for dormant records, disposal of obsolete and useless records, as well as identifying and preserving important and valuable records. ISO 15489-1(2001) points out that records management systems should be capable of facilitating and implementing decisions on the retention or destruction of records.

The study verified that there was no written disaster preparedness plan at the Institute which clearly defined responsibility of each individual towards the protection of

medical records. Medical records faced the danger of being damaged by any disaster that is occurred at the Institute. Based on this finding, the study concluded that medical records were at risk of being harmed by disasters. The Tanzania Records and Archives Management Act (2002) states that protecting records against disasters is the central role of records and information professional. Each public office is obliged to safeguard records under their custody, both in paper and electronic formats. It further states that public offices shall identify and separate vital records to ensure they are properly kept in a safe place. The identified vital records shall be categorised or classified depending on the sensitivity and importance of the records.

The study concluded that the role of medical records was achieved to the extent the records were used in supporting patient care. WHO (2006) reports that medical records form an essential part of a patient's present and future health care as a written collection of information about a patient's treatment and care. In addition, medical records are used in the management and planning of health care facilities and services; for medical research and the production of health care statistics. Furthermore, WHO (2006) points out that those doctors, nurses and other health care professionals compile medical records so that previous medical information is available when the patient returns to the health care facility. The medical record must therefore be available to support patient care.

The study noted that technologies (ICTs) could be applied in various aspects of the management of medical records to support patient care. Well implemented ICTs had the potential to facilitate processes and activities that enhanced patient care. The

study confirmed that ICTs had not been fully integrated with medical records management process at the Institute. The study concludes that poor patient care was a result of the manual medical records systems that were in use at the Institute. It was further observed that Ocean Road Cancer Institute made use of internet, intranet and local area networks in conjunction with communications software to enable the medical records staff to communicate from their computers through emails and faxes. The study concludes that computerization can only assist patient care through the development of a simple, efficient and effective medical records management system that easily be computerized.

5.3 RECOMMENDATIONS

In view of the fore going discussion the study makes the followings recommendations which if adopted and implemented will go a long way in improving patient care at Ocean Road Cancer Institute. They are as follows;

5.3.1 Develop a Policy for Management of Medical Records

The study recommends that ocean road cancer Institute should develop a medical records management policy that is benchmarked against the records management standards ISO 15489 to ensure consistent practices are followed in the management of medical records. This will not only improve overall business practices and efficiency but also enhance patient care.

5.3.2 Develop a Medical Records Procedure Manual and Guidelines

The Institute should create or develop a procedure manual to guide the management of medical records operations at ORCI. The manual should spell out norms and

standards on the management of medical records at the Institute. The procedures manual should be reviewed regularly in a reasonable period or interval. ORCI should ensure that those mandated to manage the records are trained on how to use the manual.

5.3.3 Improve Infrastructures for Medical Records Management

The study recommends that management at the Institute enhance resources that are used in the management of medical records. The resources include but are not limited to adjustable cabinets' files, telecommunication networks, computers, storage space and furniture such as chairs. The procurement unit must also collaborate with medical records staff during purchase of equipment so as to get advice on the exact specifications of such equipments and supplies.

5.3.4 Further Studies and ICTs Training to Medical Records Staff

This study recommends to the chief executive officer and head of medical records department to come up with programme for regular training of the existing medical records staff at the Institute so as to equip them with modern skills and knowledge in the management of medical records. There is also need to offer training on policy formulation, emergency preparedness, and modern preservation strategies, Information and Communication Technology, among others.

5.3.5 Mechanism for Tracking Issues in Medical Records Management

Cases of missing files and delays in retrieval were noted to be common at ORCI. This undermined patient care particularly at the Institute. In order to resolve the issue of misfiling and missing files the Institute should purchase the required equipments

for tracking of records and should adopt the use of tracer cards. There should also be good political will at the Institute to support implementation of effective medical records management.

5.3.6 Computerization and Integration of Medical Records Processes

The manual system was noted to be slow in service delivery which ultimately undermined patient care. The study therefore recommends computerisation and integration of medical records processes with clinical activities. Computerised systems offer significant advantages over conventional manual systems. There is need for establishment of systems to facilitate efficient retrieval and distribution of information, in a timely and efficient manner. Integration of ICTs will enable easy and timely access and retrieval of accurate information. This study therefore recommends that Ocean Road Cancer Institute should computerise and digitize its medical records activities and integrate with clinical activities. The study also recommends that the Institute should empower its staff through training to acquire knowledge and skills in the modern technology.

5.3.7 Adequate Funding for Management of Medical Records

This study recommends that the Institute should allocate more funds towards the management of medical records. The allocated funds should go towards buying of modern equipments, providing incentives to medical records staff, among others.

5.3.8 Monitoring and Evaluation of Medical Records Systems and Procedures

The Institute did not have a medical records procedures manual and there was also ineffective application of tracer cards. Therefore, the study recommends that

measures be taken to ensure regular medical records management audits are undertaken. Such audits will reveal areas of weakness and ensure review of systems and procedures to comply with best practices.

5.3.9 Establishment of Institutional Records Centre and Archives

The study recommends that the Institute should establish a records centre and archive where semi-current and vital records will be kept. An archive will offer more storage space where medical records can be managed under suitable environmental conditions and professional care. Establishing of both the research centre and Archives will ensure that medical records are accessible whenever required for training and research purposes.

5.3.10 Development and Implementation of Disaster Preparedness Plan

There is need for the Institute to develop a disaster preparedness plan that identified potential threats and harm including water, theft, dirt and fire that pose a reasonable threat to records. A systematically organized, formally written plan will enable the organization to respond efficiently and quickly to an emergency, minimizing danger to staff and damage to medical records and the building. The plan should address issues of disasters preparedness, response and recovery. Through these approaches, it will be easy for medical records staff to prevent medical records from any disaster. Several copies of the disaster preparedness plan should be stored off-site as well as in the medical records office. Therefore, the study recommends that the Institute should develop and implement a disaster preparedness plan and provide the necessary training for disaster response.

5.4 SUGGESTIONS FOR FURTHER RESEARCH

It is still common in many hospitals to adopt manual systems in the management of its records. Unfortunately, manual systems hampered information sharing in the following ways; the patient record could only be in one place at a time and could only be used by one user at a time; the logistics of moving the record from one place to another were sometimes slow and cumbersome. Above all, patient care is adversely affected if correct records are not used and poorly managed. New technology is making significant contributions to improving government programmes and services, achieving development goals and advancing e-government strategies. ICT has the potential to facilitate medical records management. The extent to which ICTs affect medical records management towards patient care is an issue that needs to be looked at further.

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APPENDICES

APPENDIX 1: INTRODUCTION LETTER TO THE PARTICIPANTS

Dear respondents,

I am a student at Moi University pursuing a Master Degree in information sciences in records and archives management. I am conducting a study on *the role of medical records management in supporting patient care at ORCI*. The research focuses on the creation of the medical records, use, maintenance, importance of the medical records as well as the challenges that faces the whole process of managing medical records in relation to patient care. The purpose of this letter is to seek your participation in the research; it is expected that this study will result into proper way of managing medical records in improving patient care. No identification of the individual persons will be mentioned, individual answers will be kept confidential and information provided will only be used for academic purpose and not otherwise. Kindly, assist me through providing answers to asked questions in order to complete my study.

Thank you very much in advance for your support and cooperation.

Yours faithfully

Omari Iddi Kingwande

APPENDIX 2: CONSENT FOR PARTICIPATION

I.....have been explained the objectives of the research. I have noted that my confidentiality will be valuable and my participation will have no risk involved. My participation in the study will contribute towards the improvement of medical records at ORCI

I therefore voluntarily and willingly agree to participate in the study

Signature.....

Date.....

**APPENDIX 3: INTERVIEW SCHEDULE FOR MEDICAL RECORDS
MANAGEMENT STAFF**

1. Which system does the ORCI use in the medical records management?
 - (i) Centralization System
 - (ii) Decentralization System
2. In what format(s) does the ORCI use to create its medical records?
3. Is the space allocated enough to accommodate all medical records within the Institution?
4. How are the medical records filled at your institution?
5. How adequacies are the storage equipment in the protection of medical records?
6. Do you have master patient index?
 - (i) If yes, explain how a master patient index is organized?
 - (ii) If No, how do you control patient index?
7. In your view, how does ORCI effective is in tracking the issues of medical records?
8. Does the ORCI put in place medical records guidelines and procedures manual to support management of medical records in your institution?
 - (i) If yes, are they readily available to medical records staffs?
 - (ii) If No, what guides the medical records management procedures?

9. Does the ORCI put in place medical records management policy?
 - (i) If yes, are they readily available to medical records staffs?
 - (ii) If No. what guides the medical records management functions?
10. 14 Does the ORCI put in place medical records Retention schedule?
 - (i) If yes, are they readily available to medical records staffs?
 - (ii) If No, what guides in the medical records retention processes?
11. 16 Do you have records center for the storage of semi current medical records?
 - (i) If yes, how effective is it?
 - (ii) If No, how does the Institute do to provide low cost storage?
12. Does the ORCI have in place disaster management plan?
13. What roles do medical records play
14. In what ways does medical records management helps patient care at your institution?
15. How computerization is helpful in the management of medical records in your institution?
16. What challenges do you encounter in the management of medical records in your institution?
17. What do you think should be done so as to improve the medical records management in your institution?

APPENDIX 4: INTERVIEW SCHEDULE FOR CLINICAL STAFF

1. How are you involved in the creation of medical records in your section?
2. How do you go about in ensuring integrity and authenticity of the medical records created?
3. In what formats are these records created in your section?
4. How effective is the tracking system in your Institution?
5. Does the ORCI put in place medical records guidelines and procedures manual to support management of medical records in your institution?
 - (i) If yes, are they readily available to clinical staffs?
 - (ii) If No. what guides the medical records management procedures?
6. Does the ORCI put in place medical records management policy
 - (i) If yes, are they readily available to clinical staffs?
 - (ii) If No. what guides the medical records management functions?
7. Do you have any skills in relation to management of medical records?
8. Why is it important to create medical records?
9. In your view, how does the medical records management support patient care?
10. In what way ICTs can help the management of medical records in your Institution?
11. What challenges do you face in accessing medical records?
12. How do you go about solving the problems you face when accessing medical records?

13. What specific policy, managerial and professional aspects need to be addressed to improve the management -of medical records in your institution?

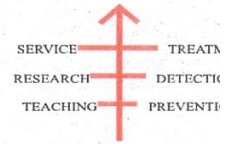
APPENDIX 5: PRE TEST CHECKLIST FOR THE INTERVIEW GUIDE

- 1 (a) Are the questions relevant to the interviewees?
(b) If not, please provide the suggestion to improve them
.....
.....
- 2 (a) Are the questions arranged in a systematic and logic order?
(b) If not, provide suggestion so as to improve them
.....
.....
- 3 ((a) Is there any grammatical error in the questionnaire?
(b) If yes, provide suggestion below to improve them
.....
.....
- 4 (a) Do the questions cover the scope of the study?
(b) If not, provide the suggestion below to improve them
.....
.....
- 5 (a) Are the questions difficult to understand?
If yes, provide the suggestion below to improve them
.....
.....
- 6 Humanely, provide general suggestion that will bring positive input in
improvement of the questions asked
.....
.....
.....

**APPENDIX 6: RESEARCH PERMIT FROM OCEAN ROAD INSTITUTE
CANCER INSTITUTE**



P.O. Box 3592, Dar es Salaam, Tanzania
Tel: 2127597, Fax: 255-22-2118704
On Reply Please quote



Our Ref: ORCI.....

Ref: ORCI/01/06/Vol.III/85

19/12/2014

**Mr Omari Idd Kingwande
Masters Student
Department of Library Records Management and Information studies
MOI University**

**RE: PERMISSION TO CONDUCT A STUDY 'THE ROLE OF MEDICAL RECORDS
MANAGEMENT IN SUPPORTING PATIENT CARE AT OCEAN ROAD CANCER
INSTITUTE, DAR ES SALAAM, TANZANIA**

This is to let you know that the Institute Academic, Research, Publications and Ethics Committee after reviewing your proposal; has granted you a permission for the implementation of the above mentioned research project.

The validity of this permission is one year from December 2014 to December 2015. The permission requires you to submit progress report; and at the end of the study to submit a full report.

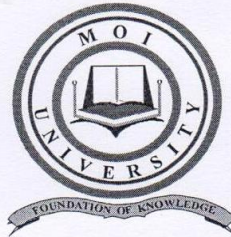
Yours sincerely,

OCEAN ROAD CANCER INSTITUTE
P.O. Box 3592
DAR ES SALAAM
Dr Julius Mwaiselage

**Dr Julius Mwaiselage MD PhD
Chairperson, IARPEC – ORCI
Director of Cancer Prevention Services**

All Correspondences should be addressed to the Executive Director

APPENDIX 7: RESEARCH PERMIT FROM MOI UNIVERSITY



MOI UNIVERSITY

DEPARTMENT OF LIBRARY, RECORDS MANAGEMENT AND INFORMATION STUDIES

Tel: (053) 43231
 Fax No. (053) 43292
 Telex NO: 35047 MOIVASITY
 E-Mail: hodlis@mu.ac.ke OR deanis@mu.ac.ke

P. O. Box 3900
 Eldoret
 Kenya.

REF: IS/MSC/RAM/22/13

11th December, 2014

Chief Executive Officer,
 Ocean Road Cancer Institute,
 P. O. Box 3592,
Dar-es-Salaam
TANZANIA.

Dear Sir/Madam,

RE: DATA COLLECTION – OMARI IDDI KINGWANDE (IS/MSC/RAM/22/13)

The above named is a postgraduate student in the Department of Library, Records Management and Information Studies, School of Information Sciences, Moi University pursuing a Master of Science Degree in Records and Archives Management. He is carrying out a research programme entitled *“The Role of Medical Records Management in Supporting Patient Care at Ocean Road Cancer Institute, Dar-es-Salaam, Tanzania ”* under the supervision of Prof. Cephas Odini and Prof. Justus Wamukoya.

The purpose of writing is to request you to kindly allow Mr. Kingwande to conduct the research in your organization and request your staff to assist him collect the necessary data. The information given will be treated with utmost confidentiality and will be used only for the purpose of the research. We look forward to your continued support and co-operation.

Yours sincerely,

DR. DAMARIS ODERO
 SENIOR LECTURER AND HEAD,
 DEPARTMENT OF LIBRARY, RECORDS MANAGEMENT & INFORMATION STUDIES.

DO/mn