MEDICAL RECORDS MANAGEMENT TO SUPPORT EVIDENCE-BASEDMEDICAL PRACTICES KISII TEACHING AND REFERRAL HOSPITAL, KENYA

BY

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DECLARATION

Declaration by the Candidate

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Declaration by the Supervisors

We hereby declare that this thesis is from the student's work and efforts, and all other sources of information have been acknowledged. This thesis has been submitted with our approval as Moi University Supervisors.

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ABSTRACT

In health care, evidence-based practices take place when decisions that affect the care of patients are taken with due weight accorded to all valid and reliable evidence from medical records. Medical records furnish documentary evidence necessary for health care provision hence the need for strategies to ensure medical records are stored in a uniform and standardized manner where they retain their evidential weight. The aim of this study was to assess medical records management in support of evidence-based medical practices at Kisii Teaching and Referral Hospital with a view of proposing strategies to improve medical records management in the hospital. The objectives of the study were: to ascertain the status of medical records in supporting evidence-based practices at Kisii Teaching and Referral Hospital; to establish policies and procedural frameworks governing the management of medical records at Kisii Teaching and Referral Hospital; to find out the knowledge and skills of staff in the management of medical records at Kisii Teaching and Referral Hospital; to explore the use of information and communication technology in managing medical records in supporting evidence-based practices at Kisii Teaching and Referral Hospital; and to propose strategies to improve on medical records management for better healthcare service delivery at Kisii Teaching and Referral Hospital. The study was underpinned by The Records Continuum and The Johns Hopkins Nursing Evidence-Based Practice models. The study adopted a qualitative research methodology using a case study design. Purposive sampling technique was used. The study sample consisted of 52 respondents drawn from four departments that create and generate; use; and manage medical records. Data was collected through the triangulation of interviews, observation, and documentary reviews and analyzed thematically. The findings established that: there was an absence of comprehensive medical records management policies and procedural frameworks; and there was a scarcity of medical records management knowledge and skill at the hospital. Although the hospital has adopted the use of information and communication technology in the provision of healthcare, medical records management processes were partially automated. Overall, the findings revealed several challenges in the management of medical records that impact on the provision of health care based on reliable evidence. In conclusion, the general status of medical records management was inadequately positioned to manage medical records as strategic evidence resource and support evidence-based practices at the hospital. Therefore, the study recommended that Kisii Teaching and Referral Hospital should develop operational policies and procedural frameworks for medical records management, build medical records management capacity and further provide medical records management training to existing staff to acquire skills and knowledge of medical records management among others.

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This thesis is dedicated to the following souls who have since moved on: My father Andrew and my sister Carol for their unending love. Your memories will live with us forever and I shall forever cherish and love you.

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LIST OF ABBREVIATIONS AND ACRONYMS

AS	**:**	Australian Standard
EBP	**:**	Evidence-based Practices
ERMS	**:**	Electronic Records Management Systems
EDRMS	**:**	Electronic Document and Records Management systems
MR	**:**	Medical Records
MRM	**:**	Medical Records Management
HRIM	**:**	Health Records and Information Management
HIS	**:**	Health Information System
KTRH	:	Kisii Teaching and Referral Hospital
ISO	**:**	International Standards Organization
ICA	**:**	The International Council on Archives
ICT	**:**	Information and Communication Technology
IRMT	**:**	International Records Management Trust
NARA	**:**	National Archives and Records Administration
QDA	**:**	Qualitative Data Analysis
UNESCO	**:**	United Nations Education, Science and Cultural Organization
WHO	**:**	World Health Organization

CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 Introduction

In health care, medical records (MR)play an important role as a tool and basis for planning patient care besides medical education, research, and legal protection (Waithera, et. al., 2017; Rodrigues, 2010).The term MR has been defined by different scholars in different ways. Mogli (2009) defines MR as an orderly written report of the patient, contains identification data, history, physical, progress notes, laboratory, radiology findings, treatment including medical and surgical and course, when complete it should contain sufficient data to justify the investigations, diagnosis, treatment, length of stay, and end result. Marutha (2016) contends that MR are created, stored, managed, and shared in the business process of rendering healthcare or medical service to the patients. Both definitions agree that MR provide essential evidence of patients' activities, transactions, and decisions that support evidence-based practices in healthcare.

Studies show that good medical records management (MRM) strengthens healthcare services by supporting evidence-based decision-making, policymaking, clinical service, and the administration of hospitals (Ngoako et. al., 2017; Marutha & Ngoepe, 2017). Koech et al., (2017) underscored this point by observing that sound MRM is an indispensible prerequisite for supporting efficiency and effectiveness in service delivery in a hospital. In fulfilling these functions, An et. al (2011) acknowledges that effective service delivery always begins with better medical records management practices. Accurate evidence is a product of a functioning medical records management program. For these reasons, this study stresses the need

for healthcare organizations to engage in proper medical records management practices to ensure that patients' information is stored in a uniform and standardized manner where medical records retains evidential weight (Marutha, 2016; Mogli, 2009).

Records management has been defined in various ways by different scholars and institutions. For instance, The National Archives and Records Administration (NARA, 2007) defines records management as the planning, controlling, directing, organizing, training, promoting, and other managerial activities involved in records creation, maintenance, and use, and disposition in order to achieve adequate and proper documentation of the policies and transactions of the organization and effective and economical management of operations. The International Standards Organization (ISO) 15489-1(2016) standard defines records management as the field of management responsible for the efficient and systematic control of the creation, receipt, maintenance, use, and disposition of records. From these two definitions, it is clear that records management is a means of ensuring that records serve their evidential purpose. While a variety of definitions of the term records management have been suggested, this study is adopting the definition of records management by NARA (2007) because it covers different activities and processes associated with the management of MR.

Meanwhile, it is important to bear in mind that current trends such as the innovative use of Information and Communication Technology (ICT) applications and systems such as District Health Information System (DHIS), Electronic Document and Records Management System (EDRMS), and mobile health (M-health) and evidence-based approaches including evidence-based medicine, are greatly influencing how

medical records are managed as evidential resources (Issa, and Wamukoya, 2018; Unadkat et al., 2020). Consequently, as hospitals across the world continue to adopt these applications and evidence-based approaches, the rapid rate of the creation and accumulation of MR has become evident and necessitated the need to implement a systematic and functional MRM program to ensure their integrity is upheld (Marutha, 2016).

Therefore, MRM plays a critical role in supporting evidence-based medical practices. Nzoka and Ananda (2014) have further shown that hospitals generate a substantial amount of MR as a result of ICT applications and therefore requires effective MRM, so as to maintain the quality and integrity of evidence and to help hospitals transact business in trustworthy environments based on MR that are authentic, reliable, understandable and usable. Cautious treatment should be afforded to MR in terms of capture and overall management so as to provide verifiable evidence needed to support quality patient care, fulfill hospital's policy and objectives, and protect fundamental value on which health care is built (Mampe and Kalusopa, 2015). At KTRH, the use of EDRMS is the current way of hospital management andin delivering healthcare (Waithera et al., 2017; Ondieki, 2017). These recent developments have led to a renewed interest in the assessment of MRM at the hospital.

1.1.1 Medical Records Management Perspective

The healthcare systems of developed countries have generally been in existence for a longer period and therefore provide relevant lessons (Amba 2015; Johnson et al., 2014).MRM in developed countries such as Australia, Canada, the United States, and the United Kingdom has made great advancements (Sikhondze and Erasmus, 2016).

For instance, in the United States of America (USA), MRM is considered part of e-government initiatives and, therefore, an important infrastructure for evidence-based practices in healthcare (Salmi et al.,2020). In support, Carter (2015) agree that hospitals in the USA are increasingly shifting attention to the use of ICT and evidence based initiatives to help improve healthcare quality, especially after Hurricane Katrina in 2005.In the UK, great advancements have also been witnessed over the years. Johnson et al. (2014) realized that the vast majority of hospitals are now producing MR electronically, and MRM is being incorporated into departmental e-business strategies.

While, in Australia, Swan et. al.(2002) argue that historically the Australian Commonwealth Government has had good records management making them a world-class records management champion. The authors pointed out that the general quality of records dates back to the first seventy (70) or so years of the 20th Century. Australia has since developed renowned best practice standards such as: the "Australian Standard for Records Management AS4390" (Standards Australia, 1996) and "ISO 15489" (ISO, 2016); "DIRKS" (National Archives of Australia, 2001); and "Recordkeeping Metadata Standard for Commonwealth agencies" (National Archives of Australia, 2000) among others. Like other developed countries, the Canadian government has emphasized the use of records as evidential resources to document the decisions of government, the statutes of the nation, and correspondence with citizens since the 1860s (McDonald, 2000). The country has formulated sound records management legislation that protects public records. For example, a national standard for e-records that establishes requirements for organizations to follow when creating electronic records (American Records Management Association, 2005).

In Africa, Marutha and Ngoepe (2017) describe the current condition of MRM as an emerging professional discipline in Africa, which itself is undergoing extensive changes, particularly in the provision of healthcare. Studies show that most countries in Africa are lagging behind in records management as compared to their counterparts elsewhere (Akanbi et al., 2012). In content, Mampe and Kalusopa (2016) states that many developing countries lack a systematic approach to managing records. For example, scholars such as Odekunle et al. (2017) and Maseh (2015)have described the state of records management n the Eastern, Southern Africa Regional Branch of the International Council on Archives (ESARBICA) member countries as inadequate especially concerning policy, training, and physical infrastructure.

Besides, a survey by Adeloye et al.(2017) on the management of e-records in the ESARBICA countries has shown that the slow progress in the management of MR in the region, including those in the health sector. Further, Mutiti,(2002) supported by Maseh, (2015) and Ambira (2016) identified the following challenges as affecting public organizations in sub-Saharan countries where Kenya belongs: the absence of organizational plans for managing records; lack of stewardship and coordination in handling records; absence of legislation, policies and procedures to guide the management of records; and absence of core competencies in records management. However, these studies recommend a full assessment of records as a sound basis for managing records, and to ensure that they are preserved as reliable evidence.

Different scholars (Luthuli, 2017; Marutha, 2016; Luthuli and Kalusopa, 2017) have considered South Africa as one of the leading African countries in embracing MRM. Despite this, the standards of the practice are not as expected (Luthuli, 2017). A study in South Africa by Marutha (2016) on the state of MR in the country identified poor

MRM as one of the contributing factors towards poor healthcare service. Meanwhile, in Botswana, Moahi (2009) outlined that MRM as evidence in healthcare in Botswana has greatly improved as a result of ICT and evidence-based applications. However, a study by Kalusopa (2011) on e-records readiness in the Botswana underscored that records management, especially in electronic format, had not received immense interest in the country. Another study by Kalusopa and Ngulube (2012) on developing an e-records readiness framework for organizations in Botswana concur that e-records readiness was evidently low and still evolving as evidenced by inadequate MRM standards and practices. Importantly, these studies propose an assessment of MR in order to come up with an appropriate framework for MRM in hospitals in Botswana (Kalusopa, 2011; Tsholo & Mnjama, 2010; Ngidi, 2016).

In their view, Igbeneghu and Popoola (2011) believe that MRM practice in Nigeria has continued to grow drastically over time as a result of computer and evidence-based applications, but still, there are challenges. Mukred et al. (2016)concur with Igbeneghu and Popoola by stating that in Nigeria, a number of problems in MRM including lack of adequate MRM leading to loss of vital information which adversely affect planning for and provision of structures and facilities, adequate funding, proper formulation and review of policies.

In Kenya, there is some attempt, albeit limited, to promote MRM, especially in the health and public sector in general. The Kenya Constitution (2010) introduced a devolved system of government where the ministry of health continues to elevate general hospitals such as KTRH to county referral hospitals. Accordingly, the implementation of the above provision brings to account the Kenya Health Act, 2017, and the Kenya health policy 2014-2030. The policies offer guidelines to ensure

healthcare goals in line with the provision of the new constitution of Kenya and Vision 2030 development blueprint (Ministry of Health, 2014).

Recently, the commitment to the improvement of healthcare service delivery can be witnessed through public service reform programs such as evidence-based health care and the use of ICT as a tool for providing effective healthcare services (KHIS Strategic Plan, 2009-2014). Consequently, hospitals across Kenya increasingly continue to adopt these interventions without due considerations to medical records management and the impact they have on healthcare delivery Kang'a et al. (2017). KTRH is no exception.

Furthermore, the government of Kenya recognizes the need for MRM for the public in line with theHealthActNo.21of2017. As a result, the health information was identified as a key investment area in the Kenya Health Sector Strategic and Investment Plan (2014-2018). In response, the Kenya Health Information Policy 2014- 2030 and Kenya National e-Health Policy 2016-2030 were developed. Concerning MR, in 2010, the government published the Standards and Guidelines for Electronic Medical Records (EMR) Systems in Kenya. However, a specific MR policy covering both electronic and paper MR could have benefited the profession. In March 2013, the then Head of Public Service, issued a circular no. OP/CAB.1/48A dated 22 March 2013, providing guidance to the governments on the management of public records. Despite their importance, several studies have raised concerns about the current MRM situation especially at the facility level(Waithera et al., 2017; Paton and Muinga, 2018; Kihuba et al., 2014) identified that public hospitals in Kenya continue to grapple with MRM challenges, shortcomings, and inconsistency.

In 2007-2008, the Health Metrics Network carried out a study on Health Information Systems (HIS). It established that the challenges are caused by: lack of a written policy at the county and facility level to ensure compliance and enforcement in reporting; low reporting rates (under 60% for most of the subsystems); inadequate Health Records and Information Management (HRIM) Personnel and inadequate capacity for data analysis; and insufficient management skills among others. Recently, research on the current status of E-Health in Kenya points out that the adoption of e-Health in Kenya is in its infancy (Kang'a et al., 2017). Other gaps, included weak HIS legal and regulatory framework, lack of current standard operating procedures, and high dependency on donor support. These concerns were expressed at a time of increasing demand for better services.

Putting into consideration policy issues and MRM challenges in Kenya, it is clear that there is a quest in every public hospital to make the practice of MRM better than it is currently. Nevertheless, there is a need for a shift in the manner in which patient information is managed, and key issues on MRM put clear (Were, 2013).

1.2 Kisii Teaching and Referral Hospital

The Kenyan health sector has undergone tremendous changes since the promulgation of the new constitution in 2010. The most significant feature is the introduction of a devolved system of government, which requires each of the 47 county governments to have at least one referral hospital. KTRH is one of them. According to the Kenya Health Policy (2014–2030),the Kenyan healthcare system is structured in six levels that are structured in a hierarchical manner that begins with community; dispensaries; health centers; primary referral facilities; secondary referral facilities; and tertiary referral facilities.

KTRH is a formal institution developed for patient care, diagnosis, and treatment of human ills and restoration of health. It is situated in the western part of Kenya, Nyanza region. The hospital began in 1960 as a general hospital and gradually upgraded to a level 6 Hospital in November 2014. KTRH has a catchment population of 3 million, a daily workload of 200 newly admitted patients and 400 outpatients, a bed occupancy rate of 150%, and a staff capacity of 500 workers (KTRH).

As stated in the hospital's strategic plan, services offered at the hospital can be categorized as diagnostic, rehabilitative, curative, physiotherapy and occupational therapy, and preventive services. Further, these services can be categorized into inpatient, outpatient, surgical, maternity, radiology, laboratory, physiotherapy and special clinics **(**Waithera et al., 2017). The role of hospitals in a country cannot be underestimated. Hospitals uphold citizens' rights to healthcare services in line with the Constitution of Kenya 2010.

Table 1.1 below shows the main services and sections at KTRH.

Table 1.1 Services and Sections at Kisii Teaching and Referral Hospital

Main Services	Sections\Departments		
	Clinical		Non- Clinical
	Out patient	In patient (wards)	
1. Diagnostic 2. Rehabilitative 3. Curative 4. Therapy (physiotherapy & occupational) 5. Preventive services.	1.Emergency 2.Laboratory 3.Pharmacy, 4.Special clinics 5.Radiography (X-rays). 6.Therapy 7.Orthopedic 8.Intensive Care (ICU/HDU) 9.Renal dialysis 10. CT scan	1. Surgical 2. Medical 3. Pediatrics 4. Gynecology 5. Psychiatry The wards classification is based on gender, illness type and the intensity of the disease, and they catered to mostly by nurses.	1. Finance 2. Health Records 3. Information Communication and Technology 4. Medical engineering

Source: Kisii Teaching and Referral Hospital

The Mission

According to the hospital's strategic plan, the mission of KTRH is to provide quality promotive, preventive, curative, and rehabilitative health services, training, and research (KTRH).

The Vision

Its vision is to be a center of excellence in provision of health care services in the region.

Core Objectives

The Hospital core objectives as enumerated in the Legal Notice No. 78 of 12th June 1998 of the State Corporations Act (Cap 446) are:

1. To receive patients on referral from other hospitals or institutions within or outside Kenya for specialized healthcare

2. To provide facilities for medical education and for research either directly or through other co-operating health institutions
3. To provide facilities for education and training in nursing and other health and allied professions
4. To participate as a national referral hospital in national health planning.

Organizational Values

KTRH organizational values as described in the service chatter include (KTRH):

1. To advance and protect the public image of the hospital at all times.
2. To be sensitive, discerning and attentive in serving our clients.
3. To observe and maintain high standards at all times.
4. To uphold teamwork at all times.
5. To respect and uphold the rights and dignity of our clients.
6. To uphold integrity, accountability and transparency in our dealings.
7. To adhere and respect the Constitution of Kenya in the provision of specialized health services.

Professional Values

As described in the service chatter (KTRH, 2018) states that, the hospital shall:

1. Exercise professions to the best of our knowledge and ability for the safety and welfare of all persons entrusted to our care. We shall not knowingly or intentionally do anything or administer anything to the persons under our care to hurt or prejudice.
2. Will maintain confidentiality of information learnt in our professional capacities.
3. Shall not employ any secret method of treatment or keep secret any method.
4. Shall not be advertised for undue commercial gains.

5. The Hospital shall conduct ourselves honorably

The direction, control, and governance of the hospital is divided among the executive director, hospital administration, and the hospital management committee. The human resources at KTRH comprise of doctors, clinical officers, nursing officers, pharmacists, HRIM officers, a system administrator, among others. Figure 1.1 below

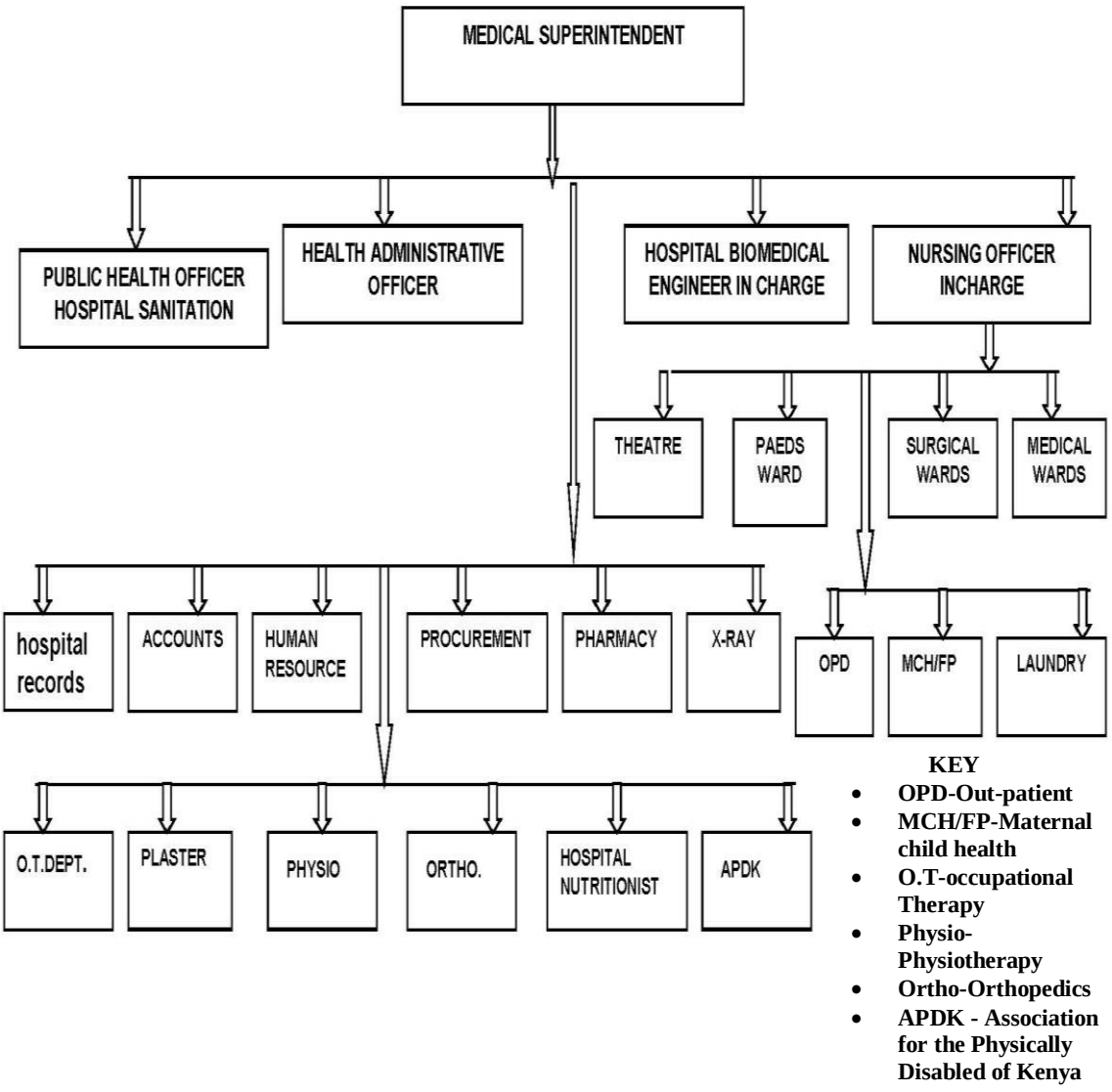


Figure 1.1 Organizational Structure of KTRH (Source: KTRH)

1.3 Statement of the Problem

In health care, MR furnishes documentary evidence necessary for healthcare provision. Evidence-based practices, in essence, take place when decisions that affect the care of patients are taken with due weight accorded to all valid and reliable evidence (Dang and Dearholt, 2017). Accurate evidence is a product of a functioning MRM program hence the need for MRM strategies to ensure that patients' information is stored in a uniform and standardized manner where MR retains evidential weight (Mogli, 2009;Marutha, 2016; Mackenzie, 2014).

The focus of this study is premised on the fact that KTRH is currently undergoing reorganization and restructuring to enable it to provide quality healthcare in line with the EMR Standards and Guidelines for Kenya (ESG) and the Constitution of Kenya 2010. Consequently, there has been an interest in the adoption of ICT (EMR) as well as evidence-based initiatives such as evidence-based medicine. The hospital has adopted an institution-wide EDRMS (Funsoft) whose aim was to computerize all healthcare services including MR procedures. The envisaged benefit of the project was to improve productivity and customer service, quick retrieval of information, improved records security (Ondieki, 2017; Waithera et al., 2017), and these would be part of the hospital's evidence-based strategy. Consequently, the rapid rate of the creation and accumulation of MR has become evident and necessitated the need to implement a systematic and functional MRM program to ensure their integrity is upheld. These recent developments have led to a renewed interest in the assessment of MRM at KTRH.

However, the exercise was carried out without undertaking a comprehensive assessment of MRM and its impact on healthcare delivery at the hospital. As KTRH

continues to adopt these initiatives, little is known about a framework that defines the creation, capture, and management of MR as evidential assets. Subsequently, the lack of a clear documented framework for MRM exposes the hospital to risks associated with MRM, especially in the electronic environment. This situation not only limits access to reliable evidence but also compromises the general flow of services as staff have to juggle between manual MRM systems and electronic MRM systems to reconcile information required for healthcare provision (Marutha, 2016; Nzoka and Ananda, 2014).

Evidence from both ICT and MRM literature has pointed out that while these computerized systems have the potential to improve the provision of healthcare, the majority of MRM programs in public institutions in Kenya have fallen short of expectations (Koech et al., 2017; Waithera et al., 2017; Paton and Muinga, 2018). These scholars revealed that hospitals in Kenya continue to grapple with challenges in the processes of managing MR in the form of evidence. The studies have shown that the lack of policies, procedural frameworks and poor storage conditions, among others, were evident. Additionally, there seems to be a gap in terms of staff numbers and MRM personnel lacked training opportunities particularly on managing electronic records in the wake of the ongoing transitions. These concerns were expressed at a time when there is an increase demand for evidential information at KTRH. Shortcomings are often due to a lack of comprehensive functional, structural, and infrastructural MRM frameworks. In that regard, there was the need for a thorough assessment of MRM at KTRH in order to ascertain whether these MRMR frameworks are in place and effectively implemented.

It is in light of the above that an assessment was done against the RC model (Upward, 2001) and JHNEBP model (Dang and Dearholt, 2017) with particular focus on functional, structural, and infrastructural MRM aspects including policy and procedural frameworks; knowledge and skills of staff; use of ICTs; and the possible strategies to improve the quality and integrity of evidence at KTRH. Such an assessment would help KTRH to be aware of the existing gaps, risks, and opportunities in the MRM systems and programs in use.

1.4 Aim of the Study

The aim of this study was to assess medical records management in supporting evidence-based medical practices at Kisii Teaching and Referral Hospital with a view of proposing strategies to improve medical records management in the hospital.

1.5 Objectives of the Study

The objectives of the study were to:

1. To ascertain the status of medical records management in supporting evidence-based practices at Kisii Teaching and Referral Hospital.
2. To establish policies and procedural frameworks governing the management of medical records at Kisii Teaching and Referral Hospital.
3. To find out the knowledge, skills and training of staff in the management of Medical Records at Kisii Teaching and Referral Hospital.
4. To explore the use of ICTs in managing medical records in supporting evidence-based practices at Kisii Teaching and Referral Hospital.
5. Propose strategies to improve medical records management for better healthcare service delivery at Kisii Teaching and Referral Hospital.

1.6 Research Questions

In order to address the objectives of the study, the following research questions were addressed:

1. How are medical records managed, their use, and role in supporting evidence-based practices at Kisii Teaching and Referral Hospital?
2. Are medical records kept and managed in accordance with the policy directives and procedural framework?
3. What knowledge, skills and training are needed in the management of medical records at Kisii Teaching and Referral Hospital?
4. What is the level of ICT preparedness in the management of medical records in supporting evidence-based practices at Kisii Teaching and Referral Hospital?
5. What are the possible strategies to improve medical records management at Kisii Teaching and Referral Hospital?

1.7 Assumptions of the Study

The study was necessitated by the assumption that:

1. Although MRM play a crucial role in the creation, capture and management of evidence, the current MRM practices at KTRH do not entirely conform to the existing guidelines on effective management of MR as strategic evidence resource.
2. Conformity with standards will enhance MRM practices at KTRH at wake of implementation of ICT strategies and evidence-based practice in the facility.

1.8 Significance of the Study

A review of the literature points out the significance of the study to be concerned with three questions: how will the study enrich scholarly research and literature in the field, how will it improve practice, and how would it affect policy formulation (Mitchell, 2012; Creswell, 2003; Stuart et al., 2002). The current study was necessitated by the fact that KTRH is currently undergoing reorganization and restructuring to enable it to provide quality healthcare as a regional county referral hospital in line with the Constitution of Kenya 2010. Consequently, as part of its evidence-based strategy, the hospital has adopted an institution-wide EDRMS (funsoft) whose aim was to computerize all healthcare services including MR procedures.

The envisaged benefit of the project was to improve productivity and customer service, quick retrieval of information, improved records security. For these efforts to be fruitful, there is need for access to accurate, complete, reliable, and trustworthy evidence (Carter, 2015), which is dependent on a sound MRM regime. The study, therefore, assessed among other issues how MR were being managed from creation to its ultimate disposition; policy and procedural frameworks; knowledge and skills of staff; use of ICTs; and the possible strategies to improve MRM at KTRH against the RC model (Upward, 2001) and JHNEBP model (Dang and Dearholt, 2017) as the theoretical lenses. This study therefore contributes to the existing body of knowledge by integrating MRM and evidence based medical practices.

Furthermore, while attention has been given to the role of HIS in the provision of healthcare, existing literature revealed that MRM in supporting evidence-based medical practices in health care is a relatively new area of study. There is an unambiguous relationship between MRM and the provision of healthcare based on

reliable and accurate evidence. Besides, in the provision of healthcare, most of the available literature focus on the use of recent researches as evidence. Further, most evidence-based models have been generated in the developed countries notably the United States of America and United Kingdom (Dang and Dearholt, 2017).Consequently, few empirical studies on MRM in supporting evidence-based healthcare practices have been done in Africa, and particularly, in Kenya. The study is therefore of pioneering in nature; it is a major attempt to link MRM and provision of healthcare based on evidence in public hospitals in Kenya. It is hoped that the findings of this study will stir debate and lead to further research. In view of the prevailing state of MRM in Kenya, the study will also serve as a reference tool on medical decisions and for subsequent studies on MRM (particularly managing MR as evidence) and contribute towards the improvement of MRM theory, practice, and methodology.

With regard to practice, the current study was necessitated by the fact that KTRH has established an institution-wide EDRMS as part of it's HIS management strategy. For these efforts to be fruitful, there is need for access to accurate, complete, reliable, and trustworthy evidence (Carter, 2015), which is dependent on a sound MRM regime. The study, therefore, assessed among other issues how MR were being managed from creation to its ultimate disposition; policy and procedural frameworks; knowledge and skills of staff; use of ICTs; and the possible strategies to improve MRM at KTRH against the RC model (Upward, 2001) and JHNEBP model (Dang and Dearholt, 2017) as the theoretical lenses.

The study findings indicated that MRM at the hospital was still weak compared to available standards. It is hoped that the proposed recommendations will contribute to

a better understanding of the inter-relationship between evidence-based practices and MRM and permit the hospital to respond to challenges arising from changes within the medical fraternity and the healthcare sector.

In terms of policy contribution, the knowledge and understanding of MRM in supporting evidence-based practices, the recommendations of this study will enhance quality service provision since it informs the development of an authoritative policy statement which will provide for MRM as an integral part of quality health care service provision.

1.9 Scope and Limitations of the Study

1.9.1 Scope of the Study

The study was carried out at KTRH after the hospital was elevated to a county referral hospital. The assessment was done because the hospital is currently undergoing reorganization and restructuring to enable it to provide quality patient care as a county referral hospital. As mentioned earlier, there has been an interest in the adoption of new interventions that are based on evidence in the hospital. It has also established an institution-wide EDRMS to ensure systematic control of patients' information through an electronic solution. Hence the need for MRM strategies to ensure that patients' information is stored in a uniform and standardized manner where MR retain evidential weight.

The focus of this study, among other issues, was: to assess how MR were being managed from creation to their ultimate disposition; policy and procedural frameworks; knowledge and skills of staff; use of ICTs; and the possible strategies to improve MRM at KTRH. The study purposely targeted four (4) departments in KTRH

namely admissions, clinical, ICT, and MRM because of their roles in the creation, use, and management of MR. The population of the study comprised admission clerks, doctors, nurses, clinical officers, a system administrator, and HRIM officers.

1.9.2 Limitations of the Study

Given that this is a relatively new area of study, and studies linking MRM and evidence-based medical practices in healthcare organizations are few, obtaining adequate literature was a challenge. The findings of the study, however, will contribute by generating new source materials on the subject. In spite of the limitation identified, the validity and reliability of the study findings were ensured.

1.10 Definition of Operational Terms and Concepts

Record: Information created, received and maintained as evidence and information by an organization or person, in pursuance of legal obligation or in the transaction of business (International Standards Organization (ISO) 15489 Standard on Records Management, 2016).

Medical records: is an orderly written report of the patient, contains identification data, history, physical, progress clinical findings, treatment including medical and surgical and course, when complete it should contain sufficient data to justify the investigations, diagnosis, treatment, length of stay, and end result (Mogli, 2009).

Electronic records: Records that are dependable on relevant machines for access or reading, that is computer hardware and software such as e-mails, database and word processing (Tafor 2003).

Records Management: Records management is the planning, controlling, directing, organizing, training, promoting, and other managerial activities involved with respect to records creation, records maintenance and use, and records

disposition in order to achieve adequate and proper documentation of the policies and transactions of the (organization) and effective and economical management of agency operations (NARA, 2007).

Medical Records Management: Medical records management is the part of records management that relates to the operation of a healthcare practice. It is the field of management that is responsible for all records throughout their lifecycle from creation, receipt, maintenance, and use to disposal (Smartsheet, 2018).

Evidence-based Practices: as described by Roberts and Yeager (2004), takes place when decisions that affect the care of patients are taken with due weight accorded to all valid and relevant information.

1.11 Structure of the Study

This study is structured into six chapters:

Chapter One: Introduction and Background Information

The chapter covers: Introduction and background to the study; statement of the problem; aim of the study, objectives of the study; research questions; assumptions of the study; significance of the study; scope and limitations of the study; and definition of operational terms and concepts.

Chapter Two: Literature review

The chapter presents detailed overview of theoretical framework and thematic review of related literature to support the study.

Chapter Three: Research methodology

The chapter builds on research methodology used in the study and the logic behind it. It presents in detail the research approach, and research design; study population;

sampling procedure; sample sizes; data collection procedures; reliability and validity of the instruments; ethical consideration and presentation and analysis of data.

Chapter Four: Data Presentation, Analysis and Interpretation

The chapter presents, analyzes and interprets data using themes in line with the study's research questions.

Chapter Five: Discussions of Findings

The chapter discusses the findings and examines their implications based on the research questions.

Chapter Six: Summary of Findings, Conclusion and Recommendations of the Study

The chapter provides a summary of findings, conclusions and recommendations based on the data presented and interpreted.

Chapter Summary

The chapter has introduced and presented the conceptual setting of the study. The chapter has defined medical records, MRM and by extension discussed the role of MRM in supporting evidence-based practices in the provision of healthcare. The contextual setting of MRM has been discussed and Kisii Teaching and Referral Hospital is the focus point. The chapter has also provided the statement of the problem, motivation of the study, purpose of the study, research objectives, and research questions. Further, the chapter has presented the significance, scope and limitations of the study. The proposed structure of the thesis has been outlined too. The next chapter provides a critical analysis of the literature and the frameworks on which the study is anchored.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

The underlying importance of literature review and theoretical framework has been well articulated and acknowledged as the basis for any scholarly work such as this thesis (Creswell, 2003; Kemoni, 2007; Ngulube, 2003). Fink(2010) defines literature review as a systematic, explicit and reproducible method for identifying, evaluating and interpreting an existing body of completed and recorded work produced by researchers, scholars and practitioners. Similarly, Literature review refers to an analysis of what other authors, experts, and authorities have written or said about the topic of research (Boote and Beile 2005).A review of literature is thus important because enables the researcher to acquire an understanding of the topic; avoid plagiarism; identify related research, key issues and pertinent gaps; and place the work in the context of what has already been done.

Literature review is important (Cooper, 2011) because it can: Integrate what others have done and said; Criticize previous scholarly works; Build bridges between related topics; and identify the central issues in a field.

In the present study, the literature review enabled the researcher to choose an appropriate research topic, formulate reliable objectives, research questions, and designing appropriate research methodologies (Rowley and Slack, 2004; Fink, 2005).The rationale of literature review in this research is therefore to justify why the study is important. From the literature reviewed, there was a gap in terms of the link between MRM processes, infrastructure and evidence-based medical practices in healthcare organizations.

The purpose of this study is to assess MRM in supporting evidence-based medical practices at KTRH with a view of proposing strategies to improve MRM in the hospital. It addressed the following research questions: How are MR managed, their use, and role in supporting evidence-based practices at KTRH?; Are MR kept and managed in accordance with the policy directives and procedural framework?; What knowledge, skills and training are needed in the management of MR at KTRH?; What is the level of ICT preparedness in the management of MR in supporting evidence-based practices at KTRH?; and What are the possible strategies to improve MRM at KTRH?

In tandem with these purposes, this study identified several primary and secondary literature sources including books, journals, conference proceedings, websites, statutory documents, theses, international standards, and policies among others.

The chapter is organized around themes of research questions, key variables of the underlying theory and broader issues on the research problem. in view of the research questions, this chapter is therefore structured around the following themes: theoretical framework; medical records management models; types and formats of medical records and their roles as evidence; management of medical records; policies and procedural framework; staff knowledge and skills; and the use of ICT in managing medical records and other related areas.

2.2 Theoretical Framework

A theory serves as a lens through which a researcher examines a particular aspect of his or her subject field (Ocholla and Roux, 2011). The word theory has a number of distinct meanings depending on their methodologies and the context of the discussion. A number of authors present definitions from both a scientific and general viewpoint.

Leedy and Ormrod (2005) define a theory as an organized body of interrelated concepts, principles, and propositions that explains or predicts a particular phenomenon, whereas McMillan and Schumacher (2006) define a theory as a set of organized ideas that may describe a particular phenomenon, explain the relationship between or among phenomenon or predict how one phenomenon affects another. The thrust of these definitions is that a theory is a set of hypotheses, assumptions, or propositions, logically or mathematically linked, offered as an explanation in general terms for a wide variety of connected natural observable phenomena. In essence, as highlighted by Eagleton (2008) and supported by Kemoni (2008), theories in scientific research help researchers draw conclusions, develop the body of knowledge and even generate more advanced and improved theories. As such, theories act as an orienting lens shaping the research questions, study participates, and data collection procedures (Creswell, 2003).

2.2.1 Theories Underpinning the Study

There are many well-known theories proposed by different scholars on evidence-based management of medical records that include among others, the Iowa Model of Evidence-based Practice, The Johns Hopkins Nursing Evidence-based Practice (JHNEBP) model, Records Life cycle, and the Records Continuum (RC) model. The study was primarily underpinned by triangulation of the RC model (Upward, 2001) and the JHNEBP model (Dang and Dearholt, 2017). These two theoretical models were complemented by the ISO 15489-1 (2016) records management standards. The two models drawn from different fields of evidence-based medicine and MRM were found relevant to this study. This is because of their substantial research base and that in literature they discuss close variables pertinent to this study including the medical records management and explain the use of best available evidence incorporated into

patient care. No one single theoretical model was found comprehensively adequate to cover all aspects of the study and therefore triangulation of multiple theories was preferred in order to strengthen the credibility and applicability of findings as recommended by Yin (2009).

2.2.1.1The Johns Hopkins Nursing Evidence-Based Practice (JHNEBP) Model

The Johns Hopkins Nursing Evidence-Based Practice Model (JHNEBP) is a powerful problem-solving approach to clinical decision-making based on the EBP concept. In this study, the abbreviation JHNEBP will be used. The model was developed by Johns Hopkins Hospital to assist healthcare organizations to incorporate the best available evidence, and best practices into patient carealong with patients' preferences and valuesand clinicians' expertise (Dang and Dearholt, 2017).Figure 2.1 illustrates the process.

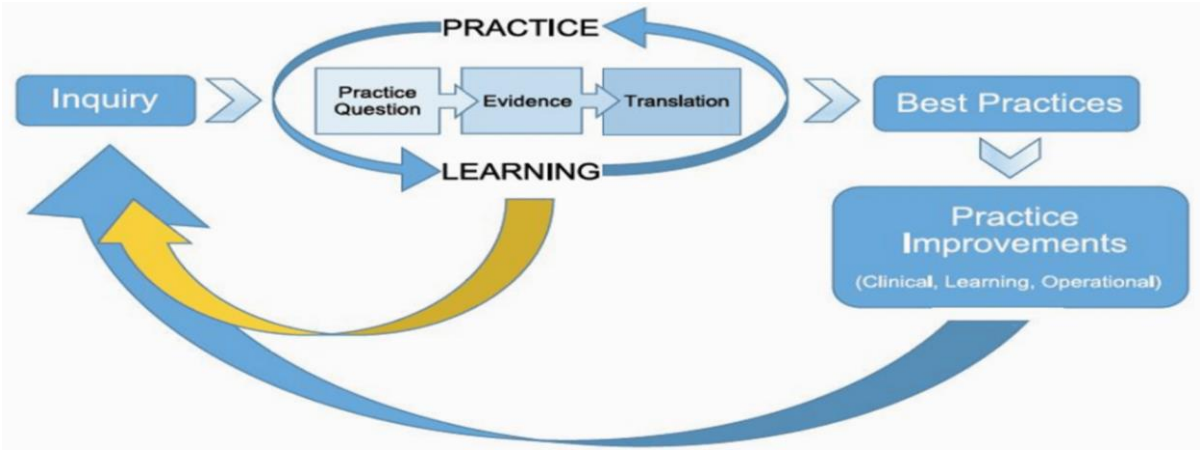


Figure 2.1: The Johns Hopkins Nursing Evidence-Based Practice (JHNEBP) Model

(Source: Dang and Dearholt, 2017)

From the figure above, the JHNEBP model is composed of the three cornerstones that include inquiry, evidence, and best practice. The best available evidence means clinically relevant research, often from basic sciences of medicine, especially from

patient-centered clinical research and evidential patient information (Dang and Dearholt, 2017; Grady, 2010). Medical records contain patient information about diagnostic tests, prognosis, and therapy and therefore furnished documentary evidence is necessary for health care provision. As such, effective management of medical records is therefore considered key to underpinning health care service delivery based on evidence (Mogli, 2009; Ngulube & Stilwell, 2011).

2.2.1.1.1 Key variables in JHNEBP Model

a) Inquiry

Inquiry is the starting point and it focuses on patients' values, expectations, characteristics, situation, and preferences. The health care practitioner seeks to gain insight into the patient situation through questioning and examining (refer to Fig 2.1 above).

b) Best available evidence

The second step involves finding and integrating the best available scientific evidence with the best available experimental (patient and practitioner) evidence (Dang and Dearholt, 2017). The model directs that both research and non-research (medical records) evidence form the basis for clinical decision making to produce high-quality health care. Best available clinical evidence means clinically relevant medical research, often from basic sciences of medicine, especially from patient-centered clinical research; and evidential information from medical records, which contain information about diagnostic tests, prognosis, and therapy (Grady, 2010; Melnyk et al., 2012).

c) Best practice

Lastly, Dang and Dearholt (2017) further state that the best available evidence is then translated into best practice. At this point, it involves the integration of professional expertise, experience, and training. Individual expertise means the proficiency and judgment that an individual clinician acquires through clinical experience and clinical best practice. As the physician moves through evidence, he/she continually learns by gaining new knowledge, improving skills, and gaining insight. As a result, the process informs practice and learning, which prompts behavior change to improve practice through the use of best evidence. This is an ongoing cycle inquiry practice and use of evidence and implementation of this process makes the model a dynamic and interactive process that impacts the provision of health care and outcome. As such, the JHNEBP model was found appropriate to inform research questions one (1), three (3), and five (5) as described below.

2.2.1.1.2 Relevancy of the JHNEBP Model to the Study

In relation to the current study, the study borrowed the merits of the theory and was looked at as strategy to rely on for assessing how MR are managed at KTRH. As Spring and Hitchcock (2010) argue, EBP is one of the core competencies for all healthcare providers and that the JHNEBP still offers a useful framework to help medics provide the best possible healthcare. While Majid S. et al, (2011), supported by Grady (2010), state that the model supports and informs clinical, administrative and educational decision making. It provides rational decision making, reducing in appropriate variation in practice. At KTRH, current MR are needed frequently in the hospital for patients care and administrative purposes. Consequently, the JHNEBP model is the best approach to ensure that decisions that affect the care of patients are taken with due weight accorded to all valid and relevant patient information (Dang

and Dearholt, 2017; Roberts &Yeager, 2004). For instance, a patient walks into the hospital and complains of stomach pain. While the patient can generally describe the medication he's been taking over the last few years, his memory might not be as good and he forgets to mention an allergy or provide a thorough family history. Those bits of information may have been critical to a proper diagnosis and soon the treating physician is in trouble, and the patient is in even worse shape than when he entered the clinic. Among the many benefits, MR help to provide physicians clinical decision alerts, present a patient's comprehensive medical history and connect with other systems to enable more coordinated care.

Further, the JHNEBP model presents variables that are relevant in understanding the role of evidence in provision of health care. Specifically, because it covers professional use of best available clinical evidence from MR which contains information about diagnostic tests, prognosis and therapy records and consider the most appropriate patient information available to make decisions, the model was chosen to inform research questions one (1), how MR are generated, types of MR, their use and role in supporting evidence-based practices at KTRH. The model also recognizes the integration of professional expertise, experience and training. The model recognizes the proficiency and judgment that individual acquire through training, experience and best practice. Therefore, the model was considered appropriate to inform research question also inform research question three (3) on knowledge, skills and training needed in management of MR. One major objective behind all these efforts is to help staff to provide the best possible care and treatment to patients (Majid et al., 2011). The model provides an orderly framework to ensure that the operations of a MRM program are geared towards providing the most appropriate evidence available in MR to make health care decisions. As such, the

model was also used to inform research question five (5), on possible strategies to improve MRM at KTRH.

2.2.1.1.3 Gaps in the JHNEBP Model

Although the JHNEBP model orderly describes the use of evidence, the model has been subject to criticism. One of the criticisms of the model by Melnyk et al. (2012) is that although healthcare providers value EBP, they required education, access to information, and time to implement EBP into daily practice. Healthcare providers want their practice based on evidence, but they also acknowledge the barriers of lack of education and time to actually implement and use EBP. Further, although it provides a framework to clinical decision making that integrates the best evidence, the model fails to describe in details the management of MR in maintaining their evidential value as it describes the use of research. To cover this gap, there was need for another model, the RC model, to provide framework for MRM as evidential resource (Upward, 2001).The major strength of the model, however, is that the framework recognizes the use of evidence in provision of health care, an objective MRM upholds. Gawlinski & Rutledge (2008) discovered that the models provide a step-by-step guide on how to take a clinical problem and match it with an intervention based on evidence. Using JHNEBP model can also assist hospitals to better focusing their limited fiscal and personnel resources on critical EBP activities.

2.2.1.2 The Records Continuum Model

The Records Continuum (RC) model as described by McKemmish (2001), is a seamless and dynamic strategy that comprehensively considers all dimensions of the activity of a record, irrespective of time. Figure 2.2 presents the RC model.

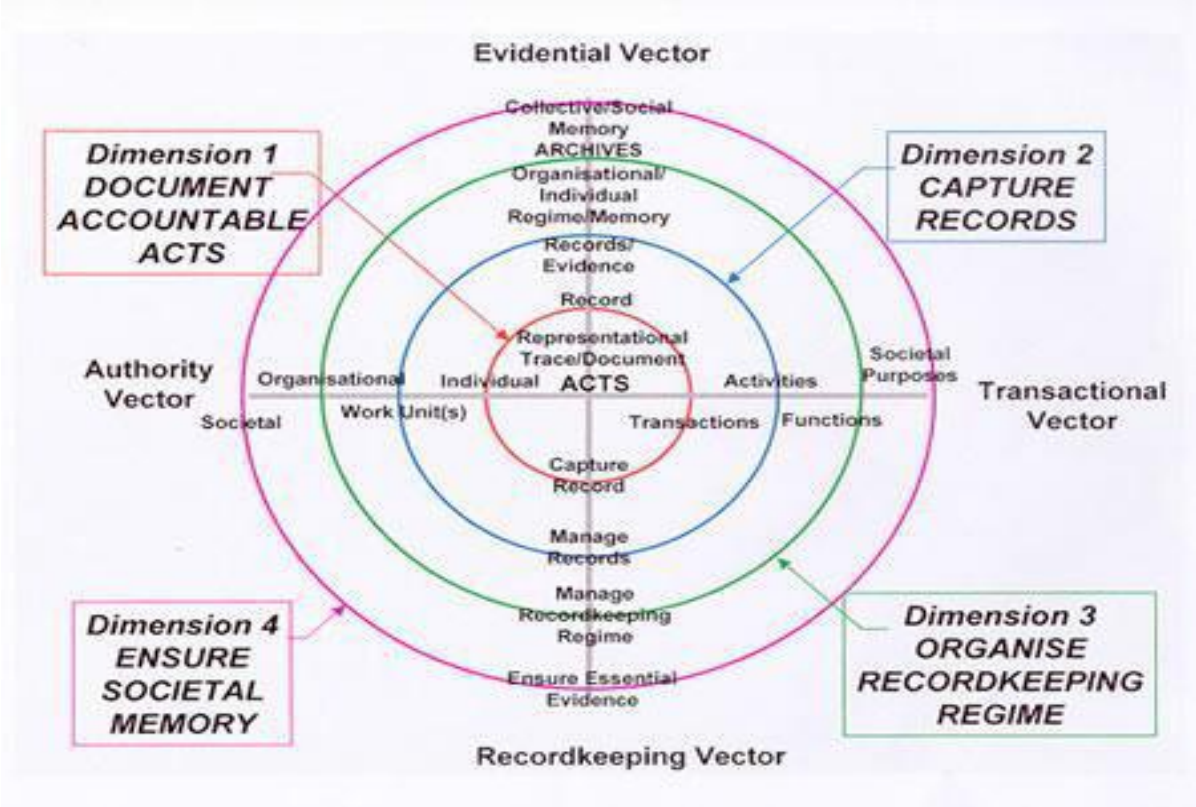


Figure 2.2: The Records Continuum Model (Source: Upward, 2001)

The Australian Standard for Records Management (AS 4390, 1996) has defined the RC model as a consistent and coherent regime of management processes from the time of the creation through to the preservation and use of records as archives. From the definitions, the RC model thinking is an answer to the new rules of the game, caused by what Upward (2001) argues is a paradigm shift driven by technology. These definitions further suggest an ideal integration for MR and archives management.

The model above provides a graphical representation tool that frames issues concerning relationships between MR managers and archivists, the present, past, ant the future, as well as strategic thinking about collaborative working and partnership building among stake holders. This means it is significant because it puts an end to the traditional demarcation between the functions (Svärd, 2011) and broadens the

interpretation of MR and MRM systems. Such broadening is helpful, given the variety of context in which archivists and MR managers. The model as illustrated above, holds that the continuum has no separate steps because MRM is a continuous process where an element of the process seamlessly passes into another in the continuum.

This model further stresses that archivists and MR managers are important and should be involved in all stages of MRM. Atherton, as cited in Saffady (2011) describes creation, classification, scheduling and maintenance, and use of information as the stages MR managers are involved in. In the continuum model, the stages that the records undergo are recurring and reverberating activities falling within archives and MRM (Upward, 2001).

2.2.1.2.1 Key Variables in the Records Continuum Model

The RC model constitutes four dimensions and these include are: create, capture, organize, and pluralize dimensions (See Figure 2.2 above).

a) Create dimension

The first ‘create’ dimension represents the locus where all business actions take place. In this dimension, documents exist in versions and can be moved beyond this locus.

b) Capture dimension

It then transitions into the second ‘capture’ dimension when a document is communicated or connected through relationships with other documents, with sequences of action. The MR are in this dimension captured as evidence of transactions and can be distributed, accessed and understood by others involved in the business transactions.

c) Organize dimension

In the third dimension, 'organise',the medical records are invested with explicit elements needed to ensure that they are available over time that exceeds the immediate environments of action. Here the MR join multiple other records deriving from multiple sequences of action undertaken for multiple purposes. This is the archive or fond that forms a corporate or personal memory.

d) Pluralize dimension

The fourth or 'pluralise' dimension is the broader social environment in which records operate – the legal and regulatory environment which translates social requirements, different for every society and at every period, for recordkeeping. This dimension further represents the capacity of a record to exist beyond the boundaries of a single creating entity (Reed, 2005).The RC model has the axes of the continuum of evidence, recordkeeping, transactionality and identity axes which fold up to meet each other(Upward, 2004).

2.2.1.2.2 Relevancy of the Records Continuum Model to the Study

The Records Continuum (RC) model renders records as fixed in content and structure from their creation. In addition, records transcend time and space as they are used by different people in different dispensations and spaces (Pearce-Moses, 2005).This study is situated within a RC model which recognizes a MR as part of KTRH business process that begins with the creation and continues through its use at all stages of its existence (An 2009; Xiaomi, 2003). The principles behind the RC model were observed as ideal for use as a theoretical framework for identifying effectiveness and efficiency in MRM at KTRH, because they focus on consistency, continuity, integration, coherence, efficiency, effectiveness, inter disciplinarism, accountability,

authenticity, and appreciate the dynamism of and continuous need for interface with technologies (National Archives of Australia 2010; Roper & Millar 2009; Svard 2011).

The RC model advised on the importance of proper MRM throughout the continuum, since all MR have equal potential of being valuable, subject to the events that surround their creation and use. This is because, as noted by Svärd (2011), the model promotes a pro-active approach that emphasises the effective management of the entire records continuum. According to McKemmish et.al.(2010) the RC model's primary focus is the multiple purpose of MR. It aims for the development of MRM programs that capture, manage and maintain MR with sound evidential characteristics. It therefore promotes the integration of MRM into the organizations' business systems and processes. In addition, the continuum concept captures the modern definition of MR that is inclusive of the key elements of content (the facts about the activity), context (information about the circumstances in which the record was created) and structure (relationship between the constituent parts) (McKemmish, 2001; Upwards, 2001). Furthermore, within the view of the RC model, an archival document can be retrieved and returned to a current status just as a newly created MR can be archived immediately after its use. This scenario is more practical in hospital, where an archival MR may be returned back to current use, for example birth notification can be retrieved when there is a reemergence of old client who has lost their birth certificate.

Thus, the RC model was found appropriate to answer research question (1). The pluralise dimension is the broader social environment in which records operate; the legal and regulatory environment represents the capacity of a record/records to exist

beyond the boundaries of a single creating entity (Reed, 2005).The RC model portrays a seamless structure of managing MR and therefore provides an insight to the universal implementation of MRM policies, procedures and regulation, irrespective of the phase or stage of activity of that particular record or archive collection. Therefore, the model was found appropriate to answer research question (2) are medical records kept and managed in accordance with the policy directives and procedural framework? The RC model advocated for collaboration in the work of archivists and records managers where preservation of records is concerned. Under the RC model, McKemmish (2001) explains, archivists and MR managers would be involved in creation, classification, scheduling and maintenance and use of information. Thus, the model provides a useful framework for the exploration of the continuum of responsibilities that relate to MRM with the advent of electronic records.

Furthermore, the model provides a framework for understanding the continuum of records management responsibilities (McKemmish 2001; An 2009). Arising from this, it was considered appropriate that RC model also inform research question three (3) what knowledge, skills and training needed in management of medical records. Further, Upward (2000) argue that the continuum concept is a paradigm shift driven by technology and recommends that programs that manage MR should have the ability to cater for both paper and electronic MRM. Records continuum thinking can primarily be regarded as an approach that replaces life-cycle based perspectives with a continuous and a time/space construction (McKemmish, 2001). The study identified the RC model as a suitable concept to use as a theoretical framework for understanding issues regarding effective MRM regimes especially with the increased generation of electronic MR and proliferation of ICTs. The model therefore addresses the needs that were to be met by research question (4) What is the level of ICT

preparedness in MRM in supporting evidence-based practices at KTRH? The model, as noted by Yusof and Chell (2000) and Svärd (2011), is considered appropriate instrument of analysis because it promotes a pro-active approach to MRM across the entire records continuum in a manner that fits modern organizations. Since the model recommends continues MRM, it was found appropriate to answer research question (5) What are the possible strategies to improve MRM at KTRH?

2.2.1.2.3 Gaps in the Records Continuum Model

Although different authors have presented the RC model as a seamless and dynamic regimen that transcends time and space, the model has its own weaknesses. Picot in Kemoni (2008) observes that the model continues to be of benefit to MRM professionals. However, Picot further observes that theory generates a certain reaction of fear and loathing in many people in the industry. The fear was that records managers and archivists share both territories and professional competencies and thus, the model poses a threat to their autonomy. Picot cautioned that, though it would be invoked to justify restructuring or changes in workplace practices, these would not invalidate its usefulness and therefore fully relevant to the current study.

2.2.1.3 The ISO 15489 (1) and (2) International Records Management Standards

In discussing concepts and identifying medical record-keeping strategies, the study also considered the ISO 15489 (1) and (2) international records management standards, which provide international best practice guidelines and strategies for implementing MRM programs. The ISO 15489-1 (2016) supplemented the models because it provides the ideal framework for the creation, capture and MRM regardless of structure or form, in all types of business and technological environments over time. It gives guidance on how MRM processes should function within an

organization and identifies the necessary results and outcomes to be expected. It reinforces the importance of MRM by providing guidance on how MR should be kept in an organization. It also augments the role that MRM can play in the strategic direction of an organization by representing the close relationships between MRM, accountability, risk management, patient information management and quality management. The ISO 15489-1 was therefore valuable in determining whether the MRM practices, programs and standards are effective and efficient in supporting evidence-based practices in the hospital.

2.2.1.4 Other MRM Models

A study conducted by Kemoni (2008) on records management theories, shows that apart from the dominant records management life cycle and continuum model that there are other records management models such as the International Council on Archives (ICA, 2005), electronic records management model and the national archive of Australia records management guidelines (AS ISO 15489, 2002). However, the models cannot underpin the study because none of the models clearly outline the management of medical records as evidence across the continuum. There are several standards that guide the practice of records management: ISO 23081-1:2006, ISO 13008:2012 and ISO 30302:2015, to name a few.

Table 2.1: Summary of Mapping of Research Questions to Variables of the Theoretical Lenses

Research questions	Records continuum theory	JHNEBP Model
How are MR generated, type of MR, their use and role in supporting evidence-based practices at KTRH	Dimensions 1- Create, 2- Capture, 3- Organize promotes a pro-active approach MRM across the continuum	Best available evidence constructs promotes use of valid and relevant patient information
Are medical records kept and managed in accordance with the policy directives and procedural framework?	Dimension 4- The pluralize dimension is the broader social, legal and regulatory environment in which records operate.	
What knowledge, skills and training needed in management of MR at KTRH?	RC model advocated for collaboration in the work of archivists and records managers where preservation of records is concerned.	Best practice construct recognizes the proficiency acquired through training, practice, and experience
What is the level of ICT preparedness in the management of MR in supporting evidence-based practices at KTRH?	Recommends MRM programs should have the ability to cater for both paper and electronic records management and automation of MRM functionalities	
What are the possible strategies to improve medical records management at Kisii Teaching and Referral Hospital?	The model recommends that MRM should be a practice that is continuously adopted for as long as there is need for the records to be kept, used and provided access to.	For clinical decision making, model suggest the integration of the best evidence with a clinician's expertise along with patients' preferences and values.

Source: Field Data

2.3 Themes Relevant to the Study

The chapter is organized around themes gleaned from the underpinning theoretical models, research questions and broader issues on the research problem. Within each theme, the international context is reviewed followed by regional, national and local contexts. The review of literature is therefore organized around the following themes:

2.3.1 Records

People usually tend to confuse the meaning of the concept MR with words like patient data, information, knowledge and document. Whilst all MR are information, not all information is a MR (Yusuf and Chell, 2005). It is therefore important to first understand what a record is. Many scholars and organizations have attempted to bring out this distinction by defining the term record. For instance, The ISO 15489-1 (2001) Standard defines a record as information created, received and maintained as evidence and information by an organization or persons, in pursuance of legal obligation or in transaction of business. In their view, Yusof and Chell (2005) define records as all those documents, in whatever medium, received or created by organization as evidence of its activity. While, Roper and Millar (1999), concur with the two that a record is not just defined by physical form, age or the fact that it contains information. From the above definitions, the major distinction between documents and records is the fact that a record serves as evidence of a transaction (Lipchak, 2002). In this study a record is perceived to be a document, regardless of medium or form, created, received, maintained and used by health care organization in pursuance of legal obligation or in transaction of business which it forms part or provide evidence and therefore need to be managed and protected (Mnjama and Wamukoya, 2007). This broad concept covers all the different types of medical records created in a health care facility.

The ISO 15489-1(2016) points out that besides providing essential evidence of organizational activities, transactions and decisions, records have administrative, financial, legal informational and historical values. Further, study by Kemoni (2007) on records management in public service indicate that records values include developing and implementing policies, planning, keeping track of actions, achieving consistency in decision-making and service delivery. Perhaps the best summary of the usefulness of records is that which is provided by Piggot (2002) and Mnjama and Wamukoya (2004) who state that without access to good records, officials are forced to take decisions on an ad hoc basis without the benefit of institutional memory and can easily lead to inefficiencies in operational procedures Therefore, records are valuable assets that need to be properly managed. However, in order for MR to demonstrate their business, evidential, accountability, research values, they must bear essential intrinsic characteristics of records which are content, context, structure including Meta (McKemmish, 2001) and extrinsic characteristics such as comprehensive, accurate, complete, understandable, usable and authentic(ISO 15489-1, 2016; Wamukoya, 2007).

2.3.2 Medical Records

An understanding of MRM starts with appreciating what a MR is. Studies by Loadman (2001) and Yusof and Chell (1999), all indicate that there is no standard definition of a MR, though a standard definition would benefit the MRM profession. However, a number of scholars and institutions have presented working definitions of a MR. Mogli (2009) defines MR as an orderly written report of the patient, when complete it should contain sufficient data to justify the investigations, diagnosis, treatment, length of stay, and end result. While, MR according to Marutha (2016) is the records created, stored, managed and shared in the business process of rendering

medical service to the patients. The central theme in these definitions as provided by different authors is MR are created to provide evidence on a patient transaction to support the provision of healthcare. This study defines a MR as a clear, concise and accurate written report of the patient including history of patient illness written from the medical point of view that can be used as evidence. In other words, the MR can be defined as What, Where, When, Who, How and Why of patient care; a performance barometer of the hospital (Darr et al., 2009).

A research by Agyeman, Binfoh and Lakhawat (2018)on MRM identified different types of MR to include examination report, clinical notes, operative notes, and diagnostic forms among others (Booyens, 2001; Cowan & Haslam 2006). A study by Sheperd and Yeo (2003) proffer that MR are important assets used for the purpose of providing the best medical care; it undertakes teaching, research, appraisals, legal requirements, administrative, financial and other purposes. Mogli (2009) further supports that MR furnish documentary evidence and serve as an informational document to assist in the quality review of patient care. From the foregoing, it is clear that quality of patient healthcare depends on proper MRM (Reed, 2005). Poor MRM practices undermine the level of performance of healthcare delivery.

2.3.3. Medical Records Management

As Kemoni (2007) notes in his research on medical records, there is no universally accepted definition of medical record management. This is an indication that the discipline of medical records management is dynamic. MRM has been defined in various ways. Mogli (2009) defines MRM as the art and science of managing all information relating to the operation of a healthcare practice. Meanwhile, Smart sheet (2018) define medical records management is the part of records management that

relates to the operation of a healthcare practice. It is the field of management that is responsible for all records throughout their lifecycle from creation, receipt, maintenance, and use to disposal. From the above definitions, it's evident that MRM entails all medical record keeping requirements and practices that allow an organization to maintain patient information as evidence (Wamukoya, 2007). The definition by Smartsheet (2018) was adopted for the current study as it encompasses an emphasis on evidence of the transaction and the management of MR from creation to disposition.

2.3.3.1 Processes for Managing Medical Records

2.3.3.1.1 Creation and Capturing of Medical Records

In principle, MR provide essential patient information that meets evidential requirements. Regardless of the technology, MR should be effectively created and captured capture so that they can be easily accessed at a later date, understood, and interpreted as evidence of what transpired in an agency (IRMT, 2003). More importantly, ISO (2016) contend that a well-defined policy stipulating the requirements for or creating and capture of MR is utterly necessary. At creation, the policy provides a master plan on how a MR is to be organized, identified, accessed and preserved for as long as it is required and ultimately set out terms for its final disposition(Upward, 2000).In addition, with electronic MR these instructions should be attached to the MR as metadata that will interact automatically with the MRM system to achieve affective management Craig (2004).Generally, Upward (2000) is of the view that MRM systems must be designed to ensure a MR is captured in an accurate, reliable, authentic, complete and usable format during a transaction occurs to avoid any details being lost, which may affect subsequent retrieval. Inaccurate information hinders the medical procedures and can result to wrong diagnoses and

treatment and the quality of service. Therefore, hospitals should create and capture MR for every patient transactions and every process that generates records (Shepherd & Yeo, 2006). However, the absence of MR creation guidelines is not new in Kenya. A study done by Kemoni (2007) focusing on records management for public service delivery in Kenya revealed that most records management units in public institutions do not have a policy for creating records. He further bemoaned the negative effects of not creating 'authentic, reliable, complete, unaltered' records which in return have severe implications on evidence.

2.3.3.1.2 Organization and Classification of the Medical Records

The ISO (2016) contends that classification is a powerful tool that links MR to their business context by associating them with categories in a business classification scheme and includes linking the record to the business being documented, at an appropriate level, and providing linkages between individual records and aggregations, to provide a continuous record of business activity. Supporting this, Chinyemba and Ngulube (2005) is of the view that classification systems ensure there is consistency in classifying records which consequently makes retrieval easier This therefore means hospitals should take keen interest on a classification system that reflects it's the business activities and allow for actions such as grouping, naming, user permission, security protection and retrieval to be done with ease, and allow classification control (Kennedy and Schauder, 1998).

However, despite the impressive benefits offered by an effective classification system, previous researches in public records management have highlighted incompetent and poor classification of records as being a problem in the public sector (Marutha, 2016; Maseh, 2015). Focusing on the public sector, the earlier study of Kemoni (2007) in

Kenya revealed the lack of updated classification systems in public sector organizations. Kemoni found out that, despite the claim of written classifications, observations showed the contrary. In addition, a study by Wamukoya and Mutula (2005) revealed that 'in the majority of the ministries, the classification schemes available were handwritten and some were in a state of deterioration, that is, they were faded, worn out and torn. Wamukoya and Mutula further noted that records were not arranged in logical manner resulting to delay in records retrieval.

2.3.3.1.3 Access and Use of Medical Records

The key goal of MRM is to maintain MR authenticity and to ensure its accessibility, safety, security, confidentiality, and privacy throughout its life cycle (Kalusopa & Ngulube, 2012). For proper utilization of the MR created their access and use should be managed as well. The ISO 15489-1 (2016) standards describe the need for a filing system; formal guidelines or policy to regulate who are permitted access MR; file tracking mechanism; and metadata. Previous studies have indicated that the timely and accurate retrieval of MR depends largely on a sound filing system that ensures records are stored and can be retrieved (Kemoni 2007; Reed, 2005). Another existing opinion is this of IRMT (2004) indicating the need for a comprehensive file plan, vocabulary control tools, and shelf labeling. Shepherd and Yeo (2006) underscored that not all MR can be accessed by all employees and access control must be in place to ensure that they are accessible to authorized officials only. ISO (2016) contend that access to records should be managed using authorized processes.

Access involves monitoring of user permissions and functional job responsibilities including privacy and security. A study on access to MR such as that conducted by WHO showed that there is a need for formal guidelines to regulate who is permitted

access to what MR and in what circumstances (WHO, 2012). Overall, the studies presented thus far provide evidence that to facilitate access to the MR, retrieval systems must provide appropriate protection of MR. Recently, scholars have highlighted the need to track medical records (Ngoepe, 2008; Ngulube and Stilwell, 2011; Kemoni, 2007). Tracking as described by Ngoepe (2008) involves documenting the movement and use of MR within a system to identify outstanding action required, prevent the loss, monitor use, and maintain an auditable trail among others. Another existing opinion is a recent study by Ngulube and Stilwell (2011) who revealed that an effective retrieval system should reflect different levels of aggregation and use of meta data and officials who control access to records should be aware of their responsibility. In the light of audit requirements, electronic systems should capture every log and be able to track by the use of various user identification and password authentication methods (ISO, 2016).

However, in a study in the public sector in Kenya, Kemoni (2007) found that, for paper records, 127 (80.9%) respondents indicated that they did not have procedures for tracking files. Kemoni's study further revealed that public organizations lack strategies that document the movement and use of records so that the organization knows where the records are at any given time, and they don't maintain an audit trail of record keeping process. On the other hand, Wamukoya and Mutula (2005) revealed that public organizations lack a formal guideline to regulate records access, fail to specify restrictions that regulate the operation of the records system. Collectively, these studies outline the critical role of an effective MRM system that ensures MR are accessible to authorized officials only, and are used for the intended purposes.

2.3.3.1.3.1 Systems for Tracking Medical Records

Every hospital with a MRM program keeps medical for some purposes and designated users. Therefore, any MRM system that captures MR must have systems that allow users to use the MR systematically (ISO 15489-1, 2016; Kemoni 2007; Shepherd & Yeo, 2006). MR as a written collection of facts about patients' health and treatment are used essentially for to support patients' healthcare (WHO, 2012). A research on MRM by Mogli (2009) found out that MR have played an important role as a tool for planning of healthcare facilities and services; the production of health care statistics; and a basis for planning patient care besides medical education, research, and legal protection. In another paper on the use of MR that was published Roper and Millar(1999), emphasizes that MR also reflect the present and past state of a patient's health and therefore play an essential in healthcare provision. Another existing opinion is this of IRMT (2004) indicating that MR supports patient treatment and care, communication between physicians and other health workers, serves as corporate memory for the hospitals, and ensuring consistency and smooth administration of an organization.

2.3.3.1.4 Storage and Preservation of Medical Records

The organize dimension of the RC model dictates that MR are stored in a format that ensures their preservation and accessibility for as long as they are required taking into account their physical and chemical properties. In agreement, section 9.6 of the ISO standards (2016) requires MR to be stored in a media that will ensure their authenticity and usability for as long as required and in a way that protects them from unauthorized access, change, loss, or destruction, including theft and disaster. ISO further recommends that measures to ensure appropriate storage environment and media; the use of protective materials; routine protection and monitoring of

information; and the development and testing of authorized disaster planning and recovery procedures and the training of relevant personnel in these. On the other hand, Shepherd and Yeo (2003) highlight that the availability of resources is one of the key success factors for an effective MRM service. These resources come in a form of working and storage space, equipment, qualified staff with adequate and regular financial support. Moreover, a study by IRMT (2004) revealed that the lack of these resources may result in failure for the organization to achieve its MR and information management goals. Furthermore, in keeping with Roper and Millar (1999) assertion that where security of records is not guaranteed, corruption is rife and cases of missing/lost records become common, security of MR at storage is another important aspect of MRM. Together, these studies outline that proper storage with security in mind should therefore be a goal of any MR system. To achieve this, the storage and preservation of MR should also be well managed to ensure continuous access to the records and designated storage areas for all MR should be provided (Wema, 2003).

ISO standards provide that priority is given to MR with continuing value which requires a higher quality of storage and handling to preserve them as long as their value exists. ISO further recommends that MR storage, including environment and media, protective materials, handling procedures, and storage systems should be routinely monitored and evaluated to identify any risks to the records' accessibility or integrity. Other researchers, however, who have looked at the storage and preservation of MR in the public sector in Kenya, have found gaps. For instance, a study by Kemoni (2007) on the public sector in Kenya highlighted challenge MRM with specific regard to storage and preservation and the most common was the inadequacy of storage equipment. These caused a delay in decision making as records retrieval would take long. Furthermore, Kemoni points out that inadequate MR

storage equipment could increase the deterioration of MR and thus affect their access and use.

2.3.3.1.5 Appraising, Retaining and Disposal of Medical Records

Appraisal, retention, and disposition are fundamental processes that help in controlling the growth of MR; helps in demonstrating compliance to disposition laws; and helps in reducing financial losses that may arise from missing files (Iwhiwhu, 2011). Accordingly, MRM does in theory and practice emphasize the need for policies and guidelines to rule and guide appraisal, retention, and disposal of MR in both physical and electronic formats (Ndenje-Sichalwe, Ngulube & Stilwell, 2011; Shepherd & Yeo 2003). In the same vein, Koech et.al.(2017) in their study on MRM identifies MR appraisal as the first step in establishing MR with enduring value. According to Craig (2004), appraisal refers to the process by which MR managers and archivists determine the administrative, legal, and fiscal value (primary value), and the historical and long-term research value (secondary value) of MR. Moreover, Shepherd and Yeo (2006) opine that it is necessary to have retention/disposal schedules.

Disposition in contrast refers to implementing the decisions taken in the disposal of records and should be carried out in conformance with rules in authorized authorities (ISO, 2016). ISO further identifies the following disposition options available: the destruction of MR and metadata; transfer of control of MR and metadata to an organization that has assumed responsibility for the business activity; and transfer of control of MR and metadata to an institutional or archive for permanent retention. However, previous researches in public records management have underlined challenges concerning appraising, retaining, and disposal. A study by the IRMT

(2003) and Kemoni (2007) confirms the absence of retention and disposal policies in hospitals, hence the need for this research. This study, therefore, recognizes that appraising, retaining, and disposal of MR are essential decongestion processes that ensure systematic and routine removal of MR and that the hospital retains MR with enduring value.

2.3.3.1.6 Emerging Issues and the Research Gaps in Processes for MRM

Globally, the MRM program is run in diverse ways in different hospitals depending on the needs and scope of the healthcare service of the specific hospital. However, in an era where quality health care is high on the global agenda, evidence abounds of cases of neglect of MRM and health care organizations in Kenya. Mnjama (2003) highlights problems in Kenya's MRM processes while Kemoni (2007) supports that MRM practice in Kenya has a number of problems which include: neglected registries; insufficient skilled and experienced MRM personnel; inadequate record storage space; and possibly, low priority of MRM in the scheme of things. The problems of MRM adversely affect planning for and provision of structures and facilities, adequate funding, proper formulation, and review of policies. Moreover, it is also clear that the MRM stakeholders face more or less the same challenges (Roper and Williams, 1999). Nevertheless, the apparent absence of sound MRM in Kenyan hospitals provided a rationale for the study. Putting into consideration the cases in the world, as presented by different authors above, there is a need for healthcare organizations to develop a structured and effective MRM program that manage MR as a vital evidence resource and should include (ISO 15489-1, 2016): use and reuse; migration or conversion; and disposition.

2.3.3.2 Objectives of Medical Records Management Program

According to ISO (2016), the objectives of records management programs: to set policies and procedures; assign responsibilities for RM at various levels within the organization; set best practice standards; process and maintain records in safe and secure storage; implement access policies; implement retention and disposal policies; integrate records management into business systems and processes; and assign, implement and administer specialized systems for managing records. MR and MRM in an organization are important in many ways (Shepherd& Yeo, 2006; Blake, 2005; World Bank 2015): healthcare organizations use MR in the conduct of current business, to enable decisions to be made and actions are taken; hospitals use MR to support accountability, when they need to prove that they have met their obligations or complied with the best practice or established policies; MR may also be used for cultural purposes, for research, to promote awareness and an understanding of corporate history. With this in mind, the usefulness of MR and MRM cannot be overemphasized. Concurring with this, Mogli (2009) maintained that MRM is essential to ensure patients' information is stored in a uniform and standardized manner where MR retains evidential weight.

In summary, MRM plays an important role in the provision of healthcare. Proper MRM is to ensure accuracy, accessibility, authenticity, and security of patient information. Accurate evidence is a product of a functioning MRM program. MRM is a corporate function that has the potential to support the effective provision of healthcare based on accurate evidence if its principles are appropriately implemented (Ngoepe & Ngulube 2013; Kemoni 2007; Kemoni, Ngulube & Stilwell 2007).Further, The World Bank (2015) argues that records management plays a significant role in enhancing prudent use of resources hence preventing mismanagement, fraud,

corruption, and embezzlement. Without proper records management, fraud cannot be proven, meaningful audits cannot be carried out and government actions are not open to review. Furthermore, the benefits of effective MRM, as listed in Blake's study (2005), include: supporting efficient joint working and patient information exchange; facilitating evidence-based policymaking in health care; and supporting legislation through the good organization of medical records. A study by Kemoni (2007) has also made several proclamations that quality healthcare delivery relies on the right patient information at the right time and using it to make the right decisions.

2.3.4 MRM and Evidence-based Practice in Healthcare Organizations

Debates about the notion that MRM is an essential underpinning of healthcare based on evidence have been wide-ranging. Different scholars are of the view that MRM is imperative in any hospital and that it is vital to the provision of quality healthcare services based on evidence (Chibambo, 2003; Lipchak, 2002; Kemoni, 2007). MRM is crucial in facilitating information sharing and ensuring the accessibility of patients' data in the short and long term. An et al. (2011) acknowledges that good MRM strengthens healthcare services by supporting evidence-based decision making. In support, Lipchak (2002) observes that MRM in public hospitals has been influenced by greater demand for evidential information necessary for policymaking, decision making, clinical service, and the administration of hospitals. According to Lipchak view, the current and future success of hospitals is very much dependent upon the quality of patient information contained in the medical records both in paper and electronic formats. As a result, MR are considered vital assets that hospitals require in order to attain their missions and visions. In this respect, hospitals need to create and maintain medical records that are complete and authentic and can be relied on as evidence.

Unfortunately, the significance of MRM for achieving quality healthcare based on evidence has never been fully recognized, particularly in the digital environment. In an era where quality healthcare is high on the global agenda, effective MRM tends to be overlooked. Different MR scholars have highlighted the need for effective MRM, but nevertheless, MRM continues to receive inadequate attention. Evidence abounds of cases of neglect of MRM and hospitals pay little attention to standardized management of MR and organizations in Kenya run in falling MRM (Kemoni, 2007; Mnjama, 2003; Wamukoya & Mutula, 2005). The apparent absence of sound MRM in Kenyan hospitals provided a rationale for the study. Besides, a study by Wamukoya and Mutula (2005) further note that ESARBICA member countries face the same challenges which include the absence of organizational plans for managing records, low awareness of the role of records management, absence of legislation, policies, and procedures, absence of core competencies in records management, and the absence of migration strategies. Consequently, Chibambo (2003) and IRMT (1999) point out that effective MRM and supporting documents irrespective of media is a critical factor in success in areas like billing, compensation, and backup (in the case of a legal challenge). To achieve this, hospitals need to maintain a systematic and planned MRM approaches that cover the MR from creation to final disposition.

2.3.4.1 Emerging Issues and the Research Gap

Surprisingly, very few studies have been done linking MRM and evidence-based practices in healthcare facilities in Kenya, showing the critical role of MRM in supporting evidence-based practices at hospitals. As confirmed by Mogli (2009), Juma et al. (2012), OECD (2013), and WHO (2012), health care institutions lacked MRM strategies that ensure patients' information is stored in a uniform and standardized manner where MR retain evidential weight.

This study, therefore, seeks to demonstrate the necessity of aligning MRM with the provision of healthcare and the need for an assessment of MRM. This study, therefore, fills the gaps in the literature by providing insight into the need to assess the MRM and evidence-based practices in hospitals, precisely at KTRH.

2.3.5 Policies and Procedural Frameworks for MRM

Elements of a sound records management program include (ISO 15489, 2016; Lipchak, 2002). Vast quantities of MR are being produced in a wide variety of forms and at a rapid rate in hospitals in Kenya, hence posing a variety of challenges in MRM. ISO 15489 (2016); VAGO (2000); and IRMT (2008) assert that in order to solve challenges of MRM, a need exists to develop legal, policies and procedural frameworks that impact their activities and the need to document such activities based on the organizational structure, culture, and resources. In essence, legal, policies, and procedural frameworks provide the mandate, accountability, authority, and direction for the creation, use, and preservation of information and MR (ISO 15489–1, 2016; IRMT, 2008). The researcher understands that the MRM infrastructure in this study controls the MRM system that reinforces other controls, thereby reducing the opportunity to tamper with MR. Policies and procedural frameworks affecting medical records management is informed by the Records Continuum Model which defines the legal and regulatory and broader social environment in which medical records operate whereas ISO 15489–1 (2016) standards map the entire legal, policy, and regulatory framework of MRM.

2.3.5.1 Policy Frameworks

Dimension 4 (The pluralize dimension) of the RC model defines the broader social environment in which records operate; the legal and regulatory environment

represents the capacity of a record to exist beyond the boundaries of a single creating entity (Reed, 2005). Whereas, ISO 15489-1 provides that an organization seeking to put in place a sound records management strategy should first and foremost establish, document, maintain and promulgate policies and procedures, to ensure that its business needs evidence, accountability, and information about its activities is met (ISO, 2016). Hospitals should thus define and document a policy for MRM whose objective is the creation and management of authentic MR capable of supporting business functions and activities for as long as they are required. The policy is communicated and implemented at all levels, endorsed at the highest decision-making level and promulgated throughout the organization.

Finally, the policy should be regularly reviewed to ensure that it reflects current business needs. However, several studies have revealed that the challenges that relate to effective policy frameworks for managing MR in east African countries including weak or out-dated frameworks (Griffin, 2003; Mnjama & Wamukoya, 2007). From Kemoni (2007) previous MRM research findings in the context of Kenya, it has been established that there are minimal MRM regulatory frameworks in many public service organizations. In the same vein, a study by Ngulube (2002) agrees that as a result of a lack of regulatory framework, challenges in the management of MR such as inadequate training in MRM for users and MRM personnel have been documented. It is also important to note that the existence of a MRM policy covering both electronic and paper MR remains inadequate. Therefore, from the above studies, it is evident that a MRM policy is relevant to the provision of healthcare based on evidence.

2.3.5.2 Procedures for Medical Records Management

The MRM policy should be backed by tools and procedures covering their core business and administrative processes. Kemoni (2007) states that an organization should establish, procedures to guarantee that its business need for evidence is met. Additionally, The ISO 15489-1(2016) Records Management Standard (section 8) specifies that MR controls should be developed and accompanied by procedure manuals. These MR controls include metadata schemas for records; business classification schemes; access and permissions rules; and disposition authorities. Processes MRM (see Clause 9) rely on up to date MR controls. However, findings of several studies (IRMT, 2008, Kemoni, 2007) revealed the challenges that relate to the effective regulatory framework for managing records in Kenya. In effect, organizations lack a guideline that outlines key MR keeping functions, and MRM personnel not having necessary guidelines for managing MR during the continuum of activities.

2.3.5.3 Emerging Issues and the Research Gap

The reviewed literature has revealed that there are challenges in policies and procedural frameworks in the MRM hence continue to be an issue of concern in public hospitals in Kenya. A key gap that emerged from the literature review was the lack of policies and procedural framework to guide the MRM to support evidence-based practices in health care organizations. Ministry of Health (2014), Mahmood and Ayub (2010) Griffin (2003) Maseh and Katuu (2017), and the WHO (2012) recommended that further investigation is needed on Policies and procedures for MRM within hospitals in Kenya because these institutions lacked guidelines that are localized to the context of use and in line with the national policies and, the legislative and regulatory framework is largely weak or outdated. The present study addressed

this gap by establishing policies and procedural frameworks governing the management of MR at KTRH.

2.3.6 Knowledge, Skills and Training Requirements of Staff in MRM

The Records Continuum (RC) model and The Johns Hopkins Nursing Evidence-Based Practice (JHNEBP) Model can only functionally exist within a healthcare institutional framework that has the personnel with the correct skills, knowledge, and training to perform each on each of the stages in the existence of MR on a regular basis. Studies by Kemoni (2007), and Kalusopa (2011), and Nzoka and Ananda (2014) in their discussions about MRM revealed that the healthcare organizations should maintain enough MRM conscious staff with relevant skills and knowledge on MRM policies and procedures, roles and responsibility including carrying out training. Moreover, knowledge, skills and training requirements of MRM is adequately informed by the ISO 15489 (2016) standards and RC model focusing on competence by MR users and handlers to perform tasks whereas JHNEBP model recognizes the proficiency and judgment that individual acquires through training, experience, and best practice.

MR officers often require training to enable them to acquire the knowledge and skills needed to make MR available for healthcare providers and other services. Although an agency may have MR policies, tools, and procedures in place, they will be ineffective unless they are supported by qualified MRM staff, adequate and regular financial support to implement and support them (IRMT, 2004).In addition, some authors such as Wamukoya and Mutula (2005) and IRMT (2011) have raised concerns on the skills required and the need to train MR managers and archivist to understand the trends, infrastructure, and service needs in the wake of implementing new strategies based on

ICT and evidence. As hospitals continue to adopt the use of ICT in the provision of health care services to the citizens, the intended benefits will be compromised unless the issue of capacity building is addressed.

The failure to address capacity-building needs could lead to reduced government effectiveness; increased operating costs; gaps in recorded memory; reduced public access to entitlements; erosion of rights and weakened capacity for decision making (IRMT, 2004). Besides, the issue of MRM skills such as management of metadata and electronic MRM are accepted as vital, underpinning the success of a MRM program given that governments are increasingly under public pressure to demonstrate that they are accountable, transparent, and committed to efforts to root out corruption or malpractice (IRMT, 2004; Wamukoya & Mutula, 2005). Wamukoya and Mutula (2005) highlighted competencies, knowledge, and skills required of records management staff in the ESARBICA region. Such skills and competencies are diverse but can be categorized at various levels into MR and information management skills; technological skills; managerial skills and project management skills. Others include but are not limited to: skills to create, capture, classify, index, store, retrieve, track, appraise, preserve, archive, and dispose of records. Top on the above MRM knowledge and skills, ISO(2016), suggests training on the creation, capture, and management of records should be built into existing training programs where possible. The need for capacity building in MRM is premised on the belief that accurate and reliable MR form the documentary evidence needed. However, Mutiti (2002) notes that a lack of professionalism in MRM would affect healthcare service delivery. Hospitals should engage in professional development activities for MRM through workshops, seminars, as well as formal training programs and curricula that enable the gradual development of staff handling and using medical records. Sound

MRM systems are critical to the ability of the public sector to be accountable and transparent and to improve services to citizens (Maseh,2015).

The situation in Africa in general and South Africa in particular is a little bit different. Studies by Chinyemba and Ngulube (2005) on MRM revealed that awareness of the need for effective MRM in service delivery is relatively good but knowledge and skills on policy and resources are wanting. In a similar study by Iwhiwhu (2011), it was concluded that Nigerian universities lacked qualified records personnel and their records were managed by staff that are often ill-equipped as they have little or no knowledge of records management practices. IRMT (2011) conducted a survey of sixty-six (66) records officers in the Kenyan judiciary and concluded that there is a need for records officers to have additional training on records management. The study revealed that only 40 had been employed and posted in the over 120 court stations in Kenya. Of the 40, three had trained at degree level; 25 at diploma level, and 12 at certificate level in archives and records management but on their initiative rather than that of the courts. Additionally, Wamukoya and Mutula (2005) concur with IRMT by suggesting that within ESARBICA region of which Kenya forms part, staff competencies, skills, and tools needed to effectively and efficiently manage records have not been adequately developed and it is necessary to have trainings and availing key resources to address this gap.

2.3.6.1 Emerging Issues and the Research Gap

Findings of several studies indicate that in Kenya there seems to be a gap in terms of staff numbers and competence on medical records management (Kalusopa, 2011; Kemoni, 2007; IRMT, 2004). In effect, as also shown by Kemoni (2007), most of MRM personnel in the public sector were under trained and lacked training

opportunities for records management personnel particularly on managing electronic records in the wake of the ongoing transitions. Scholars such as IRMT (2011) and Wamukoya and Mutula (2005) Suggested that there is need to re-look at the competencies and skills for MRM staff in healthcare institutions in Kenya complemented by knowledge of MRM practices and trends. To bridge the gap in the literature, the third research question (see section 1.5.1.1) sought to examine the knowledge and skills of staff in MRM at KTRH.

2.3.7The Use of ICT in MRM in Supporting Evidence-based Practices

Healthcare is an information-intensive industry (Rodrigues, 2010), in which reliable and timely patient information is a critical resource for the planning and monitoring of service provision at all levels of analysis. As a consequence, there has been a shift in the manner of how information is collected processed, stored, and disseminated. An increasing number of organizations are adopting ICT applications as a tool for providing effective healthcare services, communication, and decision making to its clients (Mnjama and Wamukoya, 2007).Nevertheless, a systematic review of the literature shows that, as healthcare organizations across the world continue to adopt ICT, the rapid rate of the creation and accumulation of patients' records has become evident and necessitated the implementation of institutional, legal framework and ICT infrastructure anchored on a functional MR, and information management program (Unadkat et al., 2020; Issa ,& Wamukoya, 2018; Macharia & Maroa, 2014).

However, the use of a fully computerized system may improve the effectiveness and efficiency of an HRIM department, but only where the basic manual procedures are already in place and well organized (WHO, 2012). In recent years, however, healthcare providers are under pressure to ensure effective MRM to allow ICT to

improve the quality of health care and other processes. Several studies thus far have linked the use of ICT with MRM. For instance, a recent study by Kemoni (2007) and IRMT (2004) concede that most hospitals are incorporating ICT into MRM due to the high level of the shortcomings of manual MRM. From this viewpoint, there is, therefore, a need for effective strategies to help hospitals transact business using trustworthy evidence.

In addition to the embedded role of MRM, literature reviewed from several studies, Mahmood and Ayub (2010), UN E-Government Survey (2014) and WHO, (2012), highlight the need for a comprehensive assessment study on MRM to establish the existing gaps, risks, and opportunities in the MRM systems and programs in use. This view is supported by Nzoka and Ananda (2014), and Lipchak (2002) who emphasize the need for hospitals to understand that automation of the MRM program is a gradual process and comes with other MRM obligations. In that regard, this study proposes a thorough assessment of MRM in hospitals.

2.3.7.1 Emerging Issues and the Research Gap

Few studies have been reported in the literature that subjected ICT to MRM as evidence in Kenyan hospitals. However, a review of the literature on the theme showed that there is still a need to conduct more research in the field because not much has been written on the subject. Ondieki (2017), Kang'a et al. (2017), Paton and Muinga (2018), Jackson (2015) noted that there is a need to investigate the use of ICTs in MRM, Organizational preparedness, availability of ICT infrastructure, and training. This study, therefore, fills the gaps in literature by providing a link between MRM and ICT.

2.4 Challenges in the Management of Medical Records

Many healthcare organizations are facing a myriad of challenges in MRM which has negatively impacted the quality of healthcare service delivery. In the opinion of Mnjama and Wamukoya (as cited in Wamukoya and Mutula, 2005) the problem of MRM in East and South African member countries includes: absence of organizational plans for managing records; Low awareness of the role of records management in support of organizational efficiency and accountability; lack of stewardship and coordination in handling records; absence of legislation, policies and procedures to guide the management of records; absence of budgets dedicated for records management; Poor security and confidentiality controls; and the lack of records retention and disposal policies. In Kenya, Kemoni (2007) investigated 18 government ministries and attributed the poor state of records to failure by senior management to establish acceptable MRM goals and practices; to hire competent and qualified staff in the area of MRM; to encourage training in the area of archives and records management; to provide administrative support; to implement various recommendations on the management of MR.

2.5 Standards, Best Practices for Medical Records Management

Operational MRM procedures and practices should be consistent with MRM standards. Agencies including the International Standards Organization-ISO, National Archives of Australia, IRMT, and International Council of Archives have developed MR standards and best practices. Common standards that govern MRM include ISO 15489 -1 and 2 - Information and Documentation - Records Management; ISO 23081-1 and 2 Information and documentation - Records Management Processes - Metadata for Records; and ISO ISO/TR 18492 Long-term preservation of electronic document-based information.

Table 2.2: Gaps from Literature and how they are addressed through Research Questions

Research Gap	How the gap is addressed	Research Question
Ambira(2016),Unadkat et al., 2020, Juma et al.(2012), Maseh (2015), Mackenzie(2014) pointed out that public institutions continue to adopt new initiative based on ICT and evidence without undertaking a comprehensive assessment on the current state of medical records management and its impact on service delivery	To ascertain the status of medical records in supporting evidence-based practices at Kisii Teaching and Referral Hospital.	How are medical records generated, type of medical record, their use, and role in supporting evidence-based practices at KTRH?
Ministry of Health (2014), Mahmood and Ayub (2010) Waithera et al., (2017),Maseh and Katuu(2017), and Ondieki (2017)recommended that further investigation is needed on Policies and procedures for the management of records within public institutions, including healthcare institutions, in Kenya as these institutions lacked guidelines that are localized to the context of use and in line with the national policies, and the legislative and regulatory framework is largely weak or outdated	To establish policies and procedural frameworks governing the management of medical records at KTRH.	Are medical records kept and managed in accordance with the policy directives and procedural framework?
IRMT (2011), Maseh (2015), Waithera et al., (2017)suggests that there is need to re-look at the competencies and skills for medical records management staff in health care institutions in Kenya complemented by knowledge of medical records management practices and trends	To find out the knowledge, skills and training of staff in the management of Medical Records at KTRH.	What knowledge, skills and training needed in the management of medical records at Kisii Teaching and Referral Hospital?
Unadkat et al.(2020) Mackenzie (2014) Marutha (2016), The UN E-Government Survey (2014), Jackson (2015) noted that there is a need to investigate the use of ICTs in managing medical records, organizational preparedness, availability of ICT infrastructure and	To explore the use of ICTs in managing medical records in supporting evidence-based practices at Kisii Teaching and	What is the level of ICT preparedness in the management of medical records in supporting evidence-based practices at KTRH?

training	Referral Hospital.	
Waithera et al., (2017) Were(2013), Koech et.al.(2017) pointed out that healthcare institutions lacked medical records management strategies that ensure patients' information is stored in a uniform and standardized manner where medical records retain evidential weight	Propose strategies to improve on medical records management at Kisii Teaching and Referral Hospital.	What are the possible strategies to improve medical records management at Kisii Teaching and Referral Hospital?

Source: Field Data

2.6 Chapter Summary

Chapter two provided a detailed review of the existing body of literature related to assessing MRM in support of evidence-based practice at KTRH. This section is aimed at making the research more credible by supporting it with works from authentic sources and what other scholars have spoken about the topic. The Theoretical Framework used to inform the study is also covered. The chapter discusses in detail Records Continuum (RC) model (Upward, 2001) and The Johns Hopkins Nursing Evidence-Based Practice (JHNEBP) Model (Dang and Dearholt, 2017), and their relevance to the study. This chapter also provided a review of literature on the topic of records management, medical records management and the nexus between records management and evidence-based health care.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

In a study such as this one, several authors contend that it is essential for researchers to state the methodology to explain how they conducted their research and what informed their decisions (Ngulube, 2005; Pickard, 2013; Hart, 2005). Patton (2002) states that there is no rule of thumb that tells a researcher precisely how to focus on a study. Patton further says that the extent to which a research question is broader or narrow depends on the purpose, the resources available, the time available, and the interests of those involved. In brief, there are no choices between good and bad, but choices among alternatives, all of which have merit. Pickard (2013), in her book research methods, describes research methodology as a perspective, the angle the researcher wishes to take on the question being asked. Similarly, Shensul (2012) looks at it as the strategies that researchers use to ensure that their work can be critiqued, repeated, and adapted. In this regard, research methodology aims at studying the various steps that are generally adopted by a researcher in studying a research problem and the logic behind them.

The purpose of this study is to assess MRM in supporting evidence-based medical practices at KTRH with a view of proposing strategies to improve MRM in the hospital. The current research is a qualitative one (with very few elements of quantitative data such as bio-data). It employs a triangulation of interviews, observations, and documentary reviews to gather data while using interview schedules and observation checklist as data collection tools. Data collected were analyzed using thematic analysis (discussed below).

This chapter is organized into the following thematic sections: research methods, research design, population of study, sampling procedures, data collection techniques, data collection procedures, data analysis strategies, validity and reliability of data collection instruments, and ethical consideration.

3.2 Research Approach

Research method pertains to all those methods or approaches or techniques and procedures, which a researcher employs to undertake the research process, to solve the given problem in order to achieve specific objectives (Creswell, 2009; Babbie, 2013; Losekoot & Wright, 2012). In literature, there exist three types of research approaches identified by research scholars (Creswell, 2003; Edmonds& Kennedy, 2013). These approaches are the quantitative approach; qualitative approach, and mixed methods approach (MMR).

The quantitative approach invokes a positivist perspective and includes true experiments, quasi-experiments, correlation, and survey studies (Creswell, 2003). Creswell further explains that quantitative research asks “why and looks for a comparison of groups.” The qualitative approaches, on the other hand, involves the process of collecting, analyzing and interpreting data by observing what people do and say (Okombo and Tromp 2006). Lastly, the mixed-method approach involves both quantitative and qualitative approaches. However, it’s important to note that these methods offer strong and weak points to researchers.

The current study embraced the qualitative approach (see justification in the section that follows) in order to comprehensively collect data. The researcher was motivated to adopting the qualitative approach because, as suggested by Klein and Myers (1999), the focus of qualitative research is on the understanding of the social

phenomena in their natural setting and cultural context. Adopting this approach allowed the researcher to acquire an in-depth insight into medical records management and evidence-based practices situation at KTRH.

3.2.1Qualitative Approach

Qualitative approach has been has been described by Okombo and Tromp (2006) as the process of collecting, analyzing and interpreting data by observing what people do and say. The primary goal of studies using this approach is defined as understanding rather than explaining human behavior (Ritchie and Lewis 2003, Moulton 2009). They argues that qualitative researches are often about depth, nuance, and complexity. Creswell (2003)further explains that the qualitative approaches involve studies that place more emphasis on the study of phenomena from the perspective of insiders. Included here are ethnographies, grounded theory, case studies, phenomenological and narrative research. Jebreen (2012) and Neuman, (2003) observe that the data in qualitative research come in form as words, phrases, sentences and narrations rather than numbers (non-numerical data) e.g. explanation, conversation, interviews and discussion, which makes the collected data of qualitative rich and holistic with strong potential for revealing complexity, through focusing on problems in their social and cultural environments. A research question starting with a “how” or “what” may call for a qualitative study. Some methodological techniques used in the qualitative study are the interviews and observations, among others.

A particular strength of qualitative methods, as Neill (2006) and Creswell (2009) note is that it explores the richness, depth, and complexity of phenomena rather than breadth; takes place in a natural setting; uses multiple methods that are interactive and humanistic; fundamentally interpretive; and views social phenomena holistically. It

seeks to understand the phenomenon as respondent see it. Some methodological techniques used in qualitative study are the interviews and the observations among others (Myers, 1997).For this study, when selecting a research approach, the researcher also considered the characteristics of the topic and time to conduct the research (Creswell, 2003).

The motivation of doing qualitative research as opposed to quantitative research, came from the observation that, if there is one thing that distinguishes humans from the natural world, is their ability to talk (Bosire, 2011).So, was important to give respondents being studied a chance to talk and explain on MRM issues. Therefore, qualitative research best suits the current investigation for several reasons. First and foremost, the concern was to uncover the facts of the everyday activities of healthcare workers, who create, use, and manage MR, best understood in their natural setting. This prompted the researcher to interact with them in the hospital where they conduct their daily activities. By uncovering those facts, the researcher aimed at understanding the existing gaps, risks, and opportunities in the MRM systems and programs in use. Through the qualitative method, the researcher was able to explore a wide array of dimensions of the social world such as attitudes, perceptions, and behaviors that are best understood in natural settings. This was done by using the interview method which embraces richness, depth, nuance, context, multi-dimensionality, and complexity. By all the foregoing, the researcher was able to better understand the MRM situation at KTRH and hence recommended ways to improve MRM in the facility. In general, qualitative research generates rich, detailed and valid (process) data that contributes to in-depth understanding of the context. It also permits the research to go beyond the statistical results (Anderson, 2010).

3.3 Research Design

Oliver (2004) defines research design as the blueprint to fulfilling objectives and answering questions. Similarly, Yin (2009) defines research design as the logical sequence that connects empirical data to a study's initial research questions and ultimately to the research conclusions. From the above definitions, research design can generally be understood to mean a plan or strategy of investigation conceived so as to obtain answers to research questions or problems. As Creswell (2014) further note, a research design is used to show how all the major parts of research work together to address the central research questions.

Meanwhile, Ngulube (2005) stated that, for all disciplines, the key elements of a research design must specify at least three processes: (1) the data collection, (2) the instrument development process, and (3) the sampling process, and the logic behind them (Bryant & Miron, 2006). Creswell (2003) identified several research designs that are associated with different research approaches. For instance, strategies associated with quantitative research include true experiments, quasi experiments, correlation, and survey study designs.

Similarly, those research designs that are associated with the qualitative approach include case studies, ethnographies, grounded theory, phenomenological and narrative research, archival research and action research among others. The study applies a qualitative research's case study design in an attempt to provide answers to the research questions and hence address the research objectives, as discussed in the section that follows.

3.3.1 Case study Research Design

Yin (2014) has consistently described a case study as a versatile form of qualitative inquiry most appropriate for a comprehensive, holistic, and in-depth investigation of a complex issue or phenomena, event, situation, organization, program individual, or group in context, where the boundary between the context and issue is unclear and contains many variables. Meanwhile, Moore, Lapan and Quartaroli, (2012) look at the case study as an investigative approach used to thoroughly describe complex phenomena such as recent events, important issues or programmes in ways to unearth new and deeper understanding of these phenomena. It is clear from these definitions that a case study method focuses on in-depth rather than breadth and targets to explore a research topic or phenomenon within its context or within a number of real-life contexts (Aina, 2002).In line with the qualitative approach, this research adopted a single case study research design to gain a rich understanding of the context of the research (Saunders et al., 2012).

In essence, a case study was chosen because, the case could not be considered without the context (Onatu, 2013). In the case of this study, a hospital that is committed to providing healthcare based on reliable evidence. A case study approach was used to allow the researcher to study respondents in their natural settings; enable the researcher to answer “how” and “why” questions, to gain more explicit information on MRM situation at KTRH; and also understand the nature and complexity of the MRM process at KTRH. Many studies have widely used case study research design: IRMT (2011)and Maseh (2015) among others.

3.4 Study Population

The term study population is generally understood to mean a set of entities such as people or things in which all the measurements of interest to the researcher are represented (Creswell, 2003). This study was conducted at KTRH which has a staff capacity of 500 workers. However, this population is firstly, too large for a study of this limited scope, and secondly, too diverse to be able to generalize the findings. Even in a case study approach, it is not possible to study the entire population of a single hospital. Cooper (2008) concurs that such a population must be specific enough to provide readers with a clear understanding of the applicability of the study to a particular situation.

In broad research terms, the target population can be defined as a group of individuals with some common defining observable characteristics that the research can identify and study to whom findings might be generalizable (Best & Kahn, 2006; Creswell, 2013). It is a group of individuals, objects, and items from which samples are taken for investigation (Okombo and Tromp, 2006). It refers to an entire group of persons or elements that have at least one thing in common. It is for the above reason that a selection criterion was applied, and it was found necessary to have a target population.

The relative sizes of the target population that were involved in the study are reflected in Table 3.1.

Table 3.1: Distribution of Target Population

Target population n=291		Sample size
Doctors		The sample size was determined on basis of theoretical saturation (Saunders et al., 2018).
Consultants	11	
Medical Officers	8	
Dentists	1	
Total	**20**	
Clinical officer.		The sample size was determined on basis of theoretical saturation
Specialized	7	
General	16	
Total	**23**	
Nurses		The sample size was determined on basis of theoretical saturation
KRCHNs	86	
KECHNs	143	
Total	**229**	
HRIM		The sample size was determined by census where every unit of the population was studied(Krishnaswami and Ranganathan, 2010)
Medical records officers	2	
Med. Rec. tech.	1	
Total	**3**	
System Administrators	1	
Admission Clerks	**15**	The sample size was determined on basis of theoretical saturation
Total	**291**	

Source: Research Data

As can be seen from Table 3.1 (above), this study's target population comprised KTRH staff drawn from units that: create and generate medical records including admission clerks (15); those who use MR in practice comprising of Doctors (20), Clinical officers (23), and Nurses (229); and those who manage MR consisting of HRIM officers (3) and System Administrator (1) totaling to two hundred and ninety-one (291) respondents. The criterion for their selection was based on units that create and generate, use and manage medical records.

Admission Clerks (AC): This cadre is responsible for patient registration, clerking of new patients, and billing. They were deemed relevant for the study since they are directly involved with medical records capture, creation, and maintenance.

Doctors (D), Clinical officers (CO) and Nurses (N): This cadre is referred to as the clinical team. They are individuals specialized in a particular medical area/discipline. They are also responsible for the leadership, support of the vision, and the mission, implementation of objectives and policies at KTRH. They were selected because they use MR as evidence in practice.

Health Records and Information Management (HRIM) officers: This cadre refers to those staff that have medical records management training. They were responsible for the effective and appropriate management of medical records from creation to disposition while ensuring that legal obligations are complied with within the process. Being at the center of medical records management they were considered crucial for the success of the study.

System Administrator (SA): The System Administrator is the head of ICT in the hospital and is responsible for implementing ICT projects, maintaining infrastructure and support acquisition, storage, security, integration, preservation, archiving, searching and retrieval, mining, visualization, and other information processing service. He was considered crucial for the study because he manages the system holding medical records.

3.5. Sampling Procedure

Sampling is defined by Bhattacherjee (2012) as the statistical process of selecting a subset called a sample of a population of interest for making observations and statistical inferences about that population. While Ordho and Kombo (2002) agree that sampling is the process of selecting a number of individuals or objects from a

population of interest. From the descriptions, this study notes that the sampling procedure is a process, and it is aimed at getting a sample from within a general population from which inferences can be made. For this study sampling procedure was employed to help in eliminating bias in the selection process and also allow for the reduction of cost.

Oliver (2004) discussed two types of sampling procedures namely probability sampling (representative) and non-probability (non-representative) sampling. Since generalization in a statistical sense is not a goal of qualitative research, probabilistic sampling is not necessary or even justifiable in qualitative research (Merriam, 2009). Non-probability sampling is thus the method of choice.

Study population comprised of 500 KTRH workers. This population was found be too large for a study and too diverse to be able to generalize the findings. Hence the need for a target population. Therefore, the study's target population comprised KTRH staff (291) from units that: create and generate medical records; those who use MR in practice; and those who manage MR. This kind of categorization ensured that the sample was as diverse as possible.

Further, purposive sampling was used to select a sample from which the most could be learned (Merriam, 2009).The interviewees were chosen for their relevance to the conceptual questions and based on their willingness to participate in the study rather than their representativeness. The researcher used a duty roster to determine the names, cadre, and availability of staff. The study sample (52) comprised of admission clerks; Doctors (7); Clinical officers (8); Nurses (23); HRIM officers (3); and System Administrator (1). It is important to note that sample size was not fixed prior to data

collection. Ultimately, the required number of participants became obvious when the research reached a state of theoretical saturation (Morse, 2015) as discussed below.

3.5.1 Sample Size

A sample size, as Ngoako (2011) points out, includes the number of participants chosen from the whole population. It is the selection of research participants from an entire population and involves making a decision about which people, setting, events, behavior, and/or social processes to observe. However, in qualitative researches, sample sizes may or may not be fixed prior to data collection (Mack et al., 2005). As Patton, in Coyne (1996) points out, there are no rules for sample size in qualitative inquiry. The sample size depends on what you want to know, the purpose of the inquiry, what will be useful, and what can be done with available time and resources. In the same breath, Krishnaswami and Ranganathan (2010) provide that when the population to be studied is relatively small, the investigator may decide to study the entire population.

Table 3.2: Distribution of Population Sample Size

Category	**Target population n=291**	**Sample**	**Determined By**
Admission Clerks	15	10	Theoretical saturation
Doctors	20	7	Theoretical saturation
Clinical officer.	23	8	Theoretical saturation
Nurses	229	23	Theoretical saturation
HRIM	3	3	100%(By Census)
System Administrators	1	1	100%(By Census)

Source: Research Data

The total population for the HRIM officers (3) and System Administrator (1) was considered small (see Table 3.2); therefore, the researcher took a complete enumeration of the study population (census) whereby all members of the population were included in the study. In the case of Admission Clerks, Doctors, Clinical Officers, and Nurses, the sample size was not fixed prior to data collection. Ultimately, the required number of participants became obvious when the research reached a state of theoretical saturation; when new categories, themes, and explanations stopped emerging as discussed by several authors among them Mack et al., (2005) and(Morse, 2015). Saturation is used in qualitative research as a criterion for discontinuing data collection and/or analysis (Fusch and Ness, 2015: Saunders et al., 2018). Based on grounded theory (Glaser and Strauss, 2017), saturation occurs when no additional data are being found and adding more participants to the study does not result in additional perspective or information.

3.6 Data Collection Instruments

The central, totally indispensable, part of a real-world enquiry is the collection of data; no data - no project (Robson, 1993). McLaughlin (2016) describes data collection as the systematic approach to gathering and measuring information from a variety of sources to get a complete and accurate picture of an area of interest. Generally, it is all about the procedures, techniques, and tools used when collecting data from the sampled participants (Ngoako, 2011), and the logic behind each method.

This section discusses the instruments used in collecting data to answer the research questions. This study used triangulation of interviews, observations, and documentary reviews to gather data because multiple sources of evidence allow for the development of converging lines of inquiry that are likely to be more convincing and

accurate (Njie and Asimiran, 2014; Yin, 2009). The semi-structured interview was aimed at collecting qualitative data from the admission clerks, doctors, clinical officers, nurses, HRIM officers, and system administrator. Documents review was aimed at collecting qualitative data for the study. Interview schedules and observational checklists were also used.

3.6.1 Interviews

The broad use of the term interviews is sometimes equated to a guided conversation that involves a dialogue between researcher and respondent with an aim of answering questions relating to the research problem (Yin, 2009). Saunders et al. (2012) refer to a research interview as a purposeful conversation between two or more people requiring the interviewer to establish rapport, to ask concise and unambiguous questions to which the interviewee is willing to respond, and to listen attentively. In qualitative researches, interviews offer many advantages because they are more personalized and very flexible (Yin, 2009). This view is supported by Pickard (2013) who asserts that interviews are usually used when one is seeking qualitative, descriptive, in-depth data that is specific to the individual and when the nature of the data is too complicated to be asked and answered easily.

Oates (2006) identifies 3 types of interviews in qualitative research: personal or face-to-face, group or focus group, and telephone interview. Oates further states that all these types of interviews can be structured, semi-structured, or unstructured. The study adopted face-to-face semi-structured interviews consisting of open-ended questions to collect data from the admission clerks, doctors, clinical officers, nurses, HRIM officers, and system administrator. The respondents were selected due to their roles and experience in MRM. The use of in-depth interviews was informed by the

fact that the study was interested in the subjective views of those involved in the creation, maintenance, and use of MR in practice. interviews accorded the researcher contact with the participants in order to gain an understanding of the opinions, feelings, and experiences of the participants (Denscombe, 2007). The data collected from semi-structured interviews were qualitative in nature (King, 2004) and used an interview schedule to guide the researcher during the interviews. The responses to the questions on the interview schedule were recorded using a notebook. The use of semi-structured interviews in this study was based on its strengths and the fact that other related studies have used interviews as a method for data collection (Kemoni, Maseh, and Mzerah, 2011; Kemoni and Ngulube, 2007). In-depth interviews played a key role since it allowed the researcher to obtain more information than just that directly covered by the interview schedule; gain control over the line of questioning and clarify all issues incomplete or unclear; enable the researcher to understand the interviewee clearly as well their point of view, the interview has flexibility and adapts the situations to each subject (Al-Azri, et al., 2010; Oates, 2006).

Related studies that have utilized the same method of data collection areNg'eno(2018) in a study on research data management in Kenya's agricultural research institutes with (33) interviews conducted. Another study by Maseh (2015) onrecords management readiness for open government in the Kenyan judiciary conducted interviews on (46) respondents.

3.6.2 Observation

Observation is a centric tool and method of data collection which is systematically planned and recorded through checks and controls. Observation means watching attentively in a scientific or systematic manner (Powell and Connaway, 2004). Oates

(2006) argues that it involves looking, but can involve senses other than sight such as hearing, smelling, touching, and tasting. A distinctive feature of observation is that it offers an investigator the opportunity to gather live data from naturally occurring social situations (Cohen, Manion and Morrison, 2007). This study views observation as a technique in which the researcher is personally seeing the events, actions, and experiences without any interference from the population or institution of the study (Ritchie and Lewis 2003). It is usually used as the last step where the researcher looks at the research environment while measuring what is happening (Babbie 2013).

Powell and Connaway (2004) identified two types of observation: structured and unstructured. Structured is a formal technique used to provide systematic descriptions made possible by having a predetermined set of categories of activities to be observed commonly referred to as an observation schedule or checklist. On the other hand, unstructured refers to a situation in which activities to be observed are not specified. The whole purpose of the schedule is to minimize, and possibly eliminate, the variations that will arise from data based on individual perceptions of events and situations (Denscombe, 2007). Its aim is to provide a framework for observation which all observers will use, and which will enable them to: Be alert to the same activities and be looking out for the same things; Record data systematically and thoroughly; and be able produce data which are consistent between observers, with two or more researchers who witness the same event recording the same data.

For this study, the researcher used structured observation which involved developing an observation checklist that guided the researcher to monitor the items contained in the checklist and making a record of them as they occur. The observation technique was used because, as Creswell (2009) states, it allowed the first-hand experience by

the researcher, real information was recorded immediately and enabled the researcher to detect topics suitable to discuss with participants. Basically, this method was used to collect qualitative data pertaining to observable aspects of MRM like tools for accessing and tracking MR use, filing systems used, storage equipment for MR and storage space; MR preservation measures, and MR security measures.

Observation was chosen because it allowed the researcher to collect and record MRM aspects such as arrangement of MR; the adequacy of storage space and facilities; preservation of MR; physical condition of the MR and security mechanisms put in place among other things as they were. This allowed the researcher to make a comparison of what people said and what actually was seen on the ground. Furthermore, observation provided a means for collecting substantial amounts of data in a relatively short time span especially in areas that are otherwise unnoticed or ignored such as the layout of the MR repositories. However, the disadvantage of this technique is that the researcher may be denied access as an intruder, some information may be restricted from reporting and observation skills may be lacking from the researcher's point of view (Creswell, 2009). However, triangulation with other techniques helped to cover the weaknesses of the disadvantage of the observation technique.

Observation has been used in collecting qualitative data in other studies such as records management readiness for open government in the Kenyan judiciary by Maseh (2015). On the other hand, Sichalwe (2010) in a study on the significance of records management to fostering accountability in the public service reform programme of Tanzania observed pertinent MRM issues including procedures/systems used for managing records, tools for accessing and tracking

records use, filing systems used, storage equipment for paper records and storage space; records preservation measures, records security measures and the existence of computers in the registry.

3.6.3 Document Review

Documents review is about studying the created documents of the organization that are available with the main purpose of understanding the content covered (Ritchie and Lewis 2003). While Yin (2009) refers to document review as a way of collecting data by reviewing existing documents. However, Denscombe (2007) cautions that materials to be used need to be evaluated concerning authenticity, credibility, representativeness, and meaning. The framework used for analysis involved perusing documents both in soft and hard copy deemed relevant to point to strategies, plans, and activities directly related to MRM and evidence-based practice in the hospital. Documents that were reviewed by the current study included: KTRH annual report covering the period July 2017 to June 2018, Disposal Act Cap 14, the Second National Health Strategic Plan of Kenya 2011/2012, KTRH strategic plan 2018. These documents provided supplement information on MRM and highlight the new ideas and insights that need further investigation (Yin, 2003). The documentary review was used in the current study to corroborate and complement data obtained from other sources of data such as interviews and observations. Moreover, the researcher was motivated to use the documentary review in counteracting the biases of the interviews (Denscombe, 2007).

3.7 Data Collection Procedures

This section gives a step-by-step account of how the researcher prepared for and undertook the data collection. Prior to the commencement of data collection, the

researcher prepared the instruments to be used in the data collection including interview schedules and an observation schedule. These instruments were later subjected to piloting to improve the validity of the instruments; to determine the length of time it would take to perform the entire interview; and also ensure that the interviewer is comfortable with the interview process (Bell, 2005; Jacob & Furgerson, 2012). The instruments were equally subjected to a peer debriefing team to improve the validity of the instruments (Polit and Beck, 2004).

Meanwhile, the researcher obtained an introduction letter from the Dean, School of Information Sciences, Moi University. Later, the researcher sought research permission and approval from the government and KTRH's management. Upon approval, preparation for the data collection exercise began. A week before the start of the interviews, the researcher visited various heads of departments, including clinical, HRIM, and ICT to review the work schedule and duty roster. Potential interviewees were identified from those available and willing to be interviewed. During the interviews, all of the discussions were recorded using handwritten notes. Interviewees were purposively selected and their numbers were determined by theoretical saturation and the census method. Interviews, documentary review, and observation were used as discussed above. The number of interviews was dependent on the availability of the respondents. On some occasions, interview appointments had to be rescheduled due to the respondents' busy nature of work. Daily after data collection, results were presented analyzed, and interpreted, and recommendations provided.

3.8 Validity and Reliability of Data Collection Instruments

Traditionally, researchers (Babbie & Mouton, 2010; Creswell 2014) associate reliability and validity to the quality of a study and importantly in establishing the

truthfulness, credibility, or believability of findings. Validity refers to the extent to which data collection methods accurately measure what they were intended to measure (Saunders, Lewis and Thornhill, 2012). Babbie and Mouton (2010) posit that validity is the extent to which an empirical measure adequately reflects the real meaning of the concept under consideration. Basically, it refers to the effectiveness of an instrument in measuring the specific property which it intends to measure and the degree to which the results obtained represent the phenomenon under study.In relation to this, Kumar (2011) and Krishnaswami and Ranganathan (2010) classify validity into the following types: face and content validity where each question on the research instrument must have a logical link with an objective and must also cover the full range of the issue or attitude being measured; predictive validity is concerned with the ability of the measures to make accurate predictions; construct validity refers to the extent to which the measurement questions actually measure the presence of the constructs that the researcher intended them to measure.; and finally concurrent validity is judged by how well an instrument compares with a second assessment concurrently done.

Reliability on the other hand is defined by Saunders et al. (2012) as the ability of the data collection techniques and analytic procedures to produce consistent findings if they were repeated on another occasion or if they were replicated by a different researcher. There are different methods of testing reliability on data collection instruments identified by research scholars (Babbie and Mouton, 2010; Krishnaswami and Ranganathan, 2010; Kumar, 2011): Test-retest reliability is obtained by administering the same test twice over a period of time to a group of individuals; Parallel forms reliability is achieved through comparing responses to alternative forms of the same question; internal consistency reliability is a measure of reliability used to

evaluate the degree to which different test items that probe the same construct produce similar results; finally, Inter-rater reliability is a measure of reliability used to assess the degree to which different judges or raters agree in their assessment decisions. In qualitative studies, there are different methods one can use to address both validity and reliability. These include triangulation of information among different sources of data, receiving feedback from informants (member checking), and expert review (Simon, 2011). The basic goal of designing data collection instruments is to obtain relevant information and to collect data within maximum reliability and validity.

To ensure validity and reliability, the researcher provided a clear explanation of the techniques used to collect needed data; clear and pleasing layout of designing of interview schedules; careful design of individual questions; lucid explanation of the purpose of the research; pilot testing; carefully planned and executed administration (Saunders et. al., 2018; Simon, 2011). In the present study, validity and reliability were assured through the following methods:

- The reliability of the tools was improved by peer debriefing. Peer debriefing involves sessions with peers to review and explore various aspects of the inquiry (Polit and Beck, 2004). Peer debriefing according to Polit and Beck exposes components of research to a critical review by other researchers who could be experienced in either the methods of naturalistic inquiry, the phenomenon being studied, or both. In this case selected lecturers in the School of Information Sciences at Moi University, Kenya, among them Doctors and a Professor in records management, were invited to critique the data collection tools and their input helped improve the tools;

- In order to attain validity and reliability in the present study, a pilot study was carried out. Piloting is widely acknowledged as a suitable technique for qualitative inquiry to seek insights of those who have experienced or are experiencing the phenomenon (Collingridge & Gantt, 2008; Wimpenny & Gass, 2000). Thus, piloting was crucial in the present study because it helped the researcher to test the questions, establish whether the sampling frame and technique are effective, and gain some practice in interviewing (Van Teijlingen and Hundley, 2001). Pre-testing of the data collection instruments was carried out at Moi University Health center to prevent contamination which would occur if the same participants in the main study are included in the pilot study (Van Teijlingen and Hundley, 2001). The center was selected for a pilot study due to the fact that the hospital uses medical records in offering healthcare and was accessible. Interview schedules were administered to six staff. Two admission clerks, two clinicians, one HRIM officer, and one ICT officer. The respondent rated each item on the scale: very relevant (4), quite relevant (3), somewhat relevant (2), and not relevant (1). This rating allowed the researcher to recast questions that were not clear, as well as remove items that may have resulted in yielding unusable data (Bell, 2005). Through the pre-test checklist (Appendix 1), the pre-test established that the objectives of the study were inclusive to most issues of MRM practices, the scope was not fully inclusive, and the questions were relevant and were clear with minimal grammatical errors with no technical terms. The concerns of the respondents were addressed before the researcher administered the interviews. Therefore, suggestions from the respondents and experts were used to shape and adjust the final instruments that were used to suit the research problem;

- Triangulating of data sources by collecting data from admission clerks, doctors, nurses, clinical officers, HRIM officers, and a system administrator. Responses from all these groups were compared and the response with the highest frequency from all the groups was taken to be the true reflection of the matter at hand. Methods of data collection were also triangulated to provide a basis for convergence on the truth (Polit and Beck, 2004). The study used interviews, observation, and document review to collect data that addressed similar aspects of the research problem. Patton (2002) supports this view by indicating that the use of triangulation strengthens a study by combining methods.

3.9 Data Presentation and Analysis of Findings

Data in their raw form do not speak for themselves (Robson, 1993). Robinson further states that the messages stay hidden and need careful teasing out through the data analysis process. Data processing and analysis refers to how data collected from the field is classified and interpreted (Kalusopa, 2011). Tshotlo (2009) affirms that data analysis methods allow researchers to sum up observations in a way that they can find answers to research questions. Data collection and analysis in qualitative research go hand in hand and it was done simultaneously. Data collected were analyzed using thematic analysis which is one of the most common forms of analysis to examine and record themes within qualitative data (Mack et. al., 2012). Themes are patterns across the data set that are important to the description of the attributes of the data related to a research subject (Boyatzis, 1998).

In the case of this study, data was presented in prose form, consolidated, and arranged according to themes in line with the objectives of the study. Data collected was

cleaned, coded, and analyzed to make sense. It was then sorted, organized, categorized and the relationship between categories established. Themes and categories were related using codes. These codes were used to identify specific information facts, attitudes, and feeling from the text. Data presentation has been done according to the research themes derived from the research objectives and research questions and was descriptive in nature with some aspects of the quantitative approach.

3.10 Ethical Considerations

Despite the high value of knowledge which is gained through research, knowledge cannot be pursued at the expense of human dignity (Oso and Onen, 2008). Thus, issues of ethics are very important. Ethics are set rules for conformance to the standards of conduct of a given profession or group and prohibit fabricating, falsifying, or misrepresenting research data and uphold trust, accountability, mutual respect, and fairness (Gajjar, 2013).

To address ethical issues, the current study complied with ethical principles such as honesty and integrity, safe and responsible methods and fairness, and equity for the participants. The major ethical issues considered in this study were privacy and confidentiality, anonymity, consent, and the researcher's responsibility (Oso and Onen, 2008). Before commencing the data collection process, the researcher sought permission from KTRH medical superintendent to conduct the study. Further, the study population was fully informed about the aim of the study and their decision to take part in the research was purely voluntary. Respondents were assured that this research project was for academic purposes. During interviews, the researcher politely introduced himself and assured the respondents the confidentiality of the findings.

To ensure confidentiality, the study used identification codes instead of names, and the respondents' details were not revealed to third parties. The data collection instruments were submitted to the study supervisor for clearance before they could be administered. Data presentation, analysis, and interpretation of findings were done honestly and objectively by the researcher.

3.11 Chapter Summary

This chapter has discussed the methodology; methods and techniques used in the study and the logic behind it. The main research procedure that was used for the study is described as qualitative research method. As a result of the qualitative nature of the study a small sample size was selected from the study population, which the researcher considers to be adequately representative as to allow generalization for the population. The research instruments are discussed, giving justification for their choice for data collection. Other issues discussed are data collection procedures, validity and reliability, data presentation, analysis and interpretation methods, and also ethical considerations.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION OF FINDINGS

4.1 Introduction

This chapter presents the research findings using the thematic analysis approach (Anderson 2010; Burnard et. al., 2008; Guest et. al., 2012). Data presentation is a process of describing the data that was gathered. While analyzing the data involves building themes from that data that would serve as answers to the main research question. In qualitative research, data analysis can be viewed as the range of processes and procedures whereby the researcher moves from the qualitative data that have been collected into some form of explanation, understanding, or interpretation of the situations investigated (IRMT, 2009; Luyombya, 2010).

Data analysis, therefore, provides an explanation of various concepts, theories, frameworks, and methods used. This study applied a qualitative research method that enabled the researcher to collect data from the three categories namely those who generate and create MR; those who use MR as evidence in practice; and those who link MR and users and ensure their completeness, authenticity, and usability. The respondents were composed of the admission clerks (AC) of various sections; doctors (D), nurses (N), and clinical officers (CO); and health records and information management(HRIM) officers and system administrator (SA). Further, the study was underpinned by the Records Continuum Model (Upward, 2001) and The Johns Hopkins Nursing Evidence-Based Practice Model (Dang and Dearholt, 2017). The research was aimed at assessing MRM in support of evidence-based practice at KTRH and was confined to the functional, structural, and infrastructural aspects of

operational MR such as patient history and examination report, clinical notes, discharge summary, operative notes, nurses' records, diagnostic forms among others.

Data analysis for this study was based on empirical information collected through the interviews; observations, documentary review and, was presented and analyzed through thematic approach (Anderson, 2010; Burnard et. al., 2008; Guest et. al., 2012) by editing and categorizing into research themes in line with the study's research questions as follows:

1. How are medical records managed, their use and role in supporting evidence-based practices at Kisii Teaching and Referral Hospital?

2. Are medical records kept and managed in accordance with the policy directives and procedural framework?

3. What knowledge, skills and training needed in management of medical records at Kisii Teaching and Referral Hospital?

4. What is the level of ICT preparedness in the management of medical records in supporting evidence-based practices at Kisii Teaching and Referral Hospital?

5. What are the possible strategies to improve medical records management at Kisii Teaching and Referral Hospital?

4.2 Response Rate

Essentially, response rate refers to the number of people who responded to interviews divided by sample size. Different scholars have given their opinion on the acceptable response rate in a qualitative study. Denscombe (2007) opines that there is no rule

about what constitutes an acceptable response rate. The aim of good research is to keep non-responses to a minimum and to achieve the highest possible response rate. On the other hand, Patton, in Coyne (1996) argues that in qualitative researches the total number of respondents may or may not be fixed prior to data collection.

Meanwhile, Mack et al. (2005) and Morse (2015) point out that an appropriate response is one that adequately answers the research question and determined on the basis of theoretical saturation. From the foregoing, it is clear that different studies will obtain different response rates depending on the prevailing conditions. An appropriate responsefor a qualitative study depends on what you want to know, the purpose of the inquiry, what is at stake, what will be useful, and what can be done with available time and resources The current study obtained an overall interview response of 52 respondents determined census and theoretical saturation as indicated in the Table 4.1.

Table 4.1: Response (n=52)

	Target population N=291	Interviewed N=52
Doctors	20	7
Clinical officers	23	8
Nurses	229	23
Records and Information Management	3	3
System Administrators	1	1
Admission Clerks	15	10

Source: Research Data

In the case of Admission Clerks (10), Doctors (7), Clinical Officers (8), and Nurses (23), the sample size was not fixed prior to data collection. Ultimately, the required number of participants became obvious when the research reached a state of theoretical saturation; when new categories, themes, and explanations stopped emerging (Mack et al, 2005; Morse, 2015). While the total population for the HRIM

officers (3) and System Administrator (1) was considered small (see Table 4.1 above); therefore, the researcher took a complete enumeration of the study population (census) whereby all members of the population were included in the study (Krishnaswami and Ranganathan, 2010). It is therefore concluded that the response for this study was adequate to make conclusions for the study.

4.3 Background Information of Respondents

4.3.1 Distribution of Respondents by Age

The researcher requested the respondent to provide their age category on the scales provided, with the aim of providing age group ranges among respondents (As shown in table 4.2 below).

Table 4.2: Distribution of Respondents by Age Group

Age groups	Number
25-35	29
36-45	16
46 and above	7
Total	52

Source: Research Data

Age is a very important demographic factor because it affects the way one seeks and even uses information in any form, be it oral, print or electronic. From the findings, as seen in table 4.2 above, it was found that out of the total 52 respondents interviewed most of the respondents 26 were aged between 25 to 35 years, 16 of the of the respondent were aged between 36 to 45 years, whereas 7 of the respondents were aged over 46 years.

This is an indication that respondents were fairly distributed in terms of their age. Age is instrumental in helping health care organization to plan its workforce especially developing training programs to cover for staff turnover that may arise as a result of retirements and other factors.

4.3.2 Distribution of Respondents by Gender

It was important for the study to determine the respondent's gender to ascertain gender parity at KTRH. Table 4.3 below indicate the distribution of respondents by gender.

Table 4.3: Distribution of Respondents by Gender

Gender	Number
Male	19
Female	33
Total	52

Source: Research Data

From the findings (see Table 4.3), out of the total 52 interviewed, 19 of the respondents were male while 33 of the respondents were female. This is an indication that both genders were involved in this study and thus the finding of the study did not suffer from gender bias.

4.3.3 Distribution of Respondents by Sections

To help narrow down the respondents for the study, there was need for a target population from sections that: create and generate MR; those who use MR in practice; and those who manage MR. Respondents were drawn from the four (4) departments namely clinical, admissions, HRIM, and ICT at KTRH(see Table 4.4 below).

Table 4.4: Distribution of Respondent by Sections

	Clinical	Admission	HRIM	ICT
	No.	No.	No.	No.
Doctors	7	0	0	0
C\ Officer.	8	0	0	0
Nurses	23	0	0	0
HRIM	0	0	3	0
System Administrator	0	0	0	1
Admission Clerks	0	10	0	0
Total	38	10	3	1

Source: Research Data

Table 4.4 indicate that respondents were drawn from the four departments namely clinical, admissions, HRIM, and ICT departments at KTRH. They were picked because of their roles in the creation of medical records; use medical records in practice; manage medical records. Among the 52 respondents, the majority 38 of the respondents reported that they work in the clinical department comprising of: 23 nurses, 8 clinical officers, and 7 were doctors. 10 respondents stated that they work in admissions, 3 health records and information management department, and 1 reported that he works in the ICT department.

4.3.4 Distribution of Respondents by Academic Qualifications

It was important to study the academic qualifications of the respondents so as to ascertain whether this affects their perceptions on ICTs, the way they seek, access and use evidence in provision of health care. The study sought to find out the distribution according to qualifications (See Table 4.5 below).

Table 4.5: Distribution of Respondent by Qualifications

	Certificate	Diploma	B. Degree	Masters
	No.	No.	No.	No.
Doctors	0	0	3	4
C\ Officer.	0	8	0	0
Nurses	0	11	12	0
HRIM	1	2	0	0
System Admin.	0	1	0	0
Admission Clerks	10	0	0	0
Total	11	22	15	4

Source: Research Data

Figure 4.5 above shows that out of the total 52 respondents, a large number of the respondents 22 indicated Diploma as their highest qualification with nurses 11 and clinical officers 8 being the majority diploma holders. The findings also indicated that 15 of the respondents from all the departments revealed that a Bachelor's degree was their highest qualification While, 4 indicated a Master's Degree all 4 being Doctors. 11 respondents indicated certificate as their highest qualifications majority being admission clerks (10). The findings indicated that the majority of the respondents had a specialty in their area of work hence deemed qualified to give a response regarding their area of specialization.

4.3.5 Distribution of Respondents According to Job Experience

It was important to find out job experience, so as to ascertain the level of interaction with the MR system. From the research findings, the study revealed that out of the total 52 respondents interviewed, the majority of the respondents 20 reported that they had been in the hospital for a period of between 6 - 10 years majority of them being 8 nurses. Table 4.6 below shows distribution of respondents by job description.

Table 4.6: Distribution of Respondents by Job Experience

	1- 2 Yrs.	3-5 Yrs.	6-10 Yrs.	11> Yrs.
	No.	No.	No.	No.
Doctors	0	1	3	3
C\ Officer.	1	1	4	2
Nurses	5	4	8	6
HRIM	0	0	1	2
System Admin.	0	1	0	0
Admission Clerks	0	0	4	6
Total	6	7	20	19

Source: Research Data

However, from the figure above, another 19 of the respondents indicated that they had been in the hospital for a period of 11 years and above, whereas only 6 of the respondents indicated less than 1 year. This implies that the majority of the respondents have interacted with the MR system for a long period of time, thus they were in a position to give credible information.

4.4 Status of Medical Records Management in Supporting Evidence-based Medical Practices at KTRH

A successful MRM program starts with an understanding of an organizational record-keeping environment. This also helps to check whether MRM processes have been integrated into the hospital's business process. It follows, therefore, that MR must be managed at KTRH right from creation throughout its continuum of existence. Thus, study sought to find out how MR are managed across the continuum from creation to disposition, their use, and role in supporting evidence-based practices at KTRH.

4.4.1 Medical Records Management from Creation to Disposition

The following aspects – MR creation and capture; organization and classification; access and use; storage and maintenance; appraisal and disposition; and preservation, were covered under this research question in line with the Records Continuum Model and the ISO 15489-1 (2016) records management standard:

4.4.1.1 Creation and Capture of Medical Records at KTRH

Creation and capture are major processes for the management of MR identified by the ISO 15489-1 (2016) standards. Dimension one (1) and Dimension two (2) of the RC model require that MRM systems capture, manage, and maintain MR with sound evidential characteristics (McKemmish, 2001). In order to understand how MR are created, respondents were asked to state activities, identify the type and formats of MR and the flow of patient information as a result of these activities. Interview findings from different respondents indicated that that that KTRH is a formal institution developed for patient care. Much clinical activity leads naturally to the creation of MR.

The data gathered from all the 52 respondents interviewed revealed that they performed duties that were directed towards the hospital's core business activities in line with the hospital's core mandate (KTRH Service Charter). The corresponding responses of 38 respondents from the clinical department interviewed consisting of 23 Nurses, 8 Clinical Officers and 7 Doctors reported that they provide direct clinical service and performed activities relating to diagnosis, promotive, preventive, curative, and rehabilitative treatment of patients. Concerning activities conducted, D5 stated:

> *"The bulk of activities at KTRH are direct clinical services and the majority of the activities we are involved in, are clinical centered on diagnosis, treatment, and care of patient*s."

However, different respondents interviewed revealed that clinical activities are supported by other non-clinical activities that include admissions, HRIM, and ICT. For example, all the 10 admission clerks interviewed established that they performed non-clinical duties, such as registration and clerking of patients, which are essential to the provision of health care. Those admission clerks that mentioned the opening of files or MR creation were further asked how the files were created. Their responses are summarized in the words of two respondents, one from the admissions department AC10 stationed at the outpatient section and AC2 stationed at the in-patient section of the hospital. The testimony of AC10 stated that:

> *"Our duty ta the out-patient section is to open files and write cards for patients who visit the hospital for the first time and also activate patient number in the computer for those who already have a file with us".*

While, AC2 had this to say:

> *"To facilitate processing and admission of patients into the wards, we receive files from the out-patient section for the newly admitted patient who doesn't have files in the hospital. For the old clients, we retrieve their files from the hospital's main repository."*

All the 3 HRIM officers and 1 System Administrator from the ICT department interviewed revealed that they are involved in activities inclined MRM both paper and electronic at different sections at KTRH. All 4 respondents were of the view that the activities from the ICT to HRIM departments link MR users to the MRM systems and ensure patient information or evidence is readily available, which is the key factor (Shepherd and Yeo, 2003) in the mission and vision of KTRH. In support of the issue of KTRH being a healthcare institution as recognized by the majority of the respondents, a review of documents from the hospital's website and the KTRH service chatter indicated that:

> *The mission of KTRH* is *to provide quality promotive, preventive, curative and rehabilitative health services, training and research.*
>
> *The vision of KTRH* is *to be a center of excellence in provision of healthcare services in the region.*

When the researcher asked respondents about the availability of the metadata associated with an individual MR, all 52 of the respondents said they are not aware of such procedures. In that regard, the study revealed KTRH's MRM system does not document metadata associated with an individual MR.The process of MR creation and capturing entails the allocation of explicit metadata to MR irrespective of its format (ISO 15489, 2016).The significance of these findings is an indication that responsibilities and activities from both clinical and non-clinical departments play a critical role in the creation of MR and subsequent use in the provision of healthcare service (Kang'a et al., 2017; Paton &Muinga, 2018, Waithera et al., 2017). To help KTRH conform to its core objectives of upholding integrity, accountability, and transparency in its dealings, procedures on the creation and capture of MR are utterly important (Beastall, 1998).

4.4.1.1.1 Types and Formats of Medical Records at KTRH

Interview respondents were asked to indicate the type of MR they create in the course of their work. The majority of the respondents indicated that KTRH created and captured MR such as discharge summary, admission notes, clinical progress, and operation reports in both paper and electronic formats. Since they are the major users and contributors to the growth of MR, the clinical team comprising of Doctors, Clinical Officer, and Nurses were also asked what type of MR they found useful for their service delivery and gave slightly different responses for in-patient and out-patient service. Their responses are indicated in Table 4.7.

Table 4.7: Type and Formats of Medical Record

	PAPER		ELECTRONIC	
	In-patient	**Out-patient**	**In-patient**	**Out-patient**
	No.	**No.**	**No.**	**No.**
Doctors	7	2	3	7
C\ Officer.	4	2	4	8
Nurses	23	6	8	23
Total	34	10	15	38

Source: Research Data

It is apparent, from the table above, that staff at KTRH relied on MR in both electronic and paper formats to perform their duties. For paper format: 34 of the respondents interviewed indicated paper for inpatient services and 10 cited paper format for outpatient services. Whereas, for electronic format: 15 of the respondents indicated electronic records for In-patient, while the majority (38) acknowledged electronic formats for outpatient services. The majority of those who cited paper and electronic formats for both inpatient and out-patient were Nurses (see Table 4.7). In support, a review of the hospital's service Chatter indicates that EDRMS is the current way of hospital management and also delivering healthcare at KTRH (KTRH). As a result, the hospital creates both paper and electronic MR. In concurring, the SA indicated that:

> *"KTRH creates medical records in all formats since it has computerized all its healthcare services, and it's a requirement that apart from the paper card, all outpatient should be seen through the funsoft system. In case of admission to the wards, patients should open a physical file where documentation will be done. However, paper medical records generally remain dominant."*

Shepherd and Yeo (2003) are of the view that ISO-compliant MRM program needs to record the types and formats of MR regardless of their formats. From the data presented, the researcher deduced that KTRH creates different types of MR. However, although the hospital has integrated the use of ICT, which it relies on to offer healthcare services and in turn generate electronic MR, the paper form is dominant. The dominance of paper MR in public organizations in Kenya and the emergence of electronic formats are similar to the findings of Koech et al. (2017) and Maseh (2015) who confirmed that, in most public organizations, there are records in both paper and electronic formats with the bulk of the MR usually in paper format. KTRH is no exception. Being a crucial evidential resource, MR must, therefore, be managed in tandem with the ideals of the RC Model which requires that MR in both paper and electronic formats be managed right from their creation to their disposal.

4.4.1.1.2 Flow of Patients Information at KTRH

Respondents were further asked about the flow of information from the creation of MR when a patient first visit the hospital for treatment to final storage of the patient file at the hospital's main repository after discharge. In responding to the question, the majority of the respondents indicated that the MR go through various stages. Their responses are summarized in the words of two respondents, from AC5 and the other from HRIM 3.

Responding to the question, AC 5 stated that:

> *"When a patient seeking health care service walks into the hospital, we are the first staff the patient comes into contact with. As the first step, we have to register the patient into our fun soft (EDRMS) system for patient identification and offer medical record numbers for those patients who don't have the number. For old patients with a medical record number, we activate their file so that they can be able to seen by the physician on duty. At this point, the medical record begins."*

According to the testimony of HRIM Officer 3, the procedure continues as follows:

> *"The patient then walks into the clinical room at the outpatient to meet the clinical team on duty. Entries are made in the patient's file on the (EDRMS) system by the healthcare provider who observes, treats, or cares for the patient at the time of observation, treatment, or care. For those who don't have a complication, the patient is released to go home. In case the patient is to be admitted to the wards, the patients should open a physical file where documentation will be done."*

Upon admission to the wards, the results of the interview done show that all the 38 clinical staff interviewed pointed out that they contribute content to the MR by including drug prescription, consultations notes, treatment findings, x-ray reports, and discharge summary during the patient's stay in the wards, a stage critical in the growth of the MR. As the last step when the patient is discharged from the wards, the 3 HRIM officers and system administrator interviewed, indicated that the patient file is then sent to the MR department for assembling and analyzing for completeness, clinical coding, morbidity statistics, and finally, the procedure for filing as shown on figure 4.1.

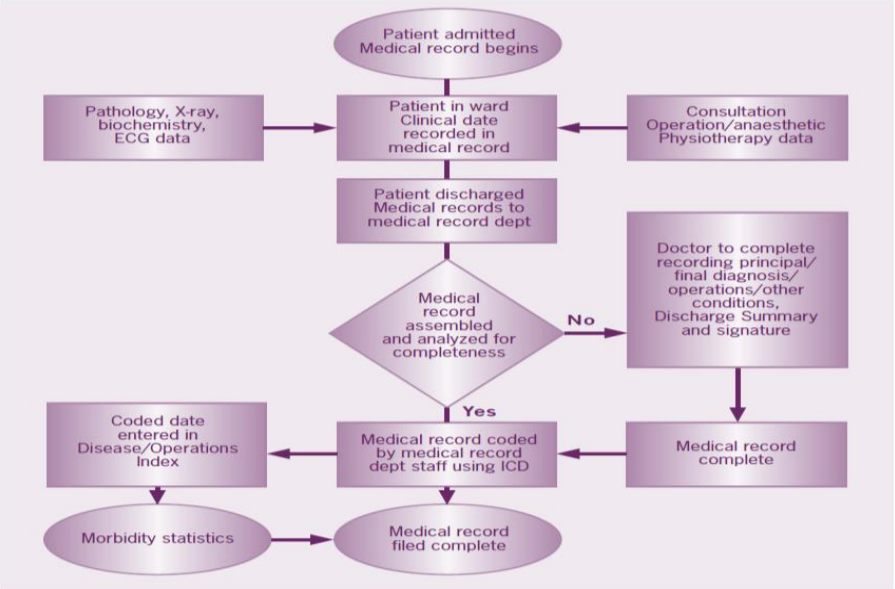


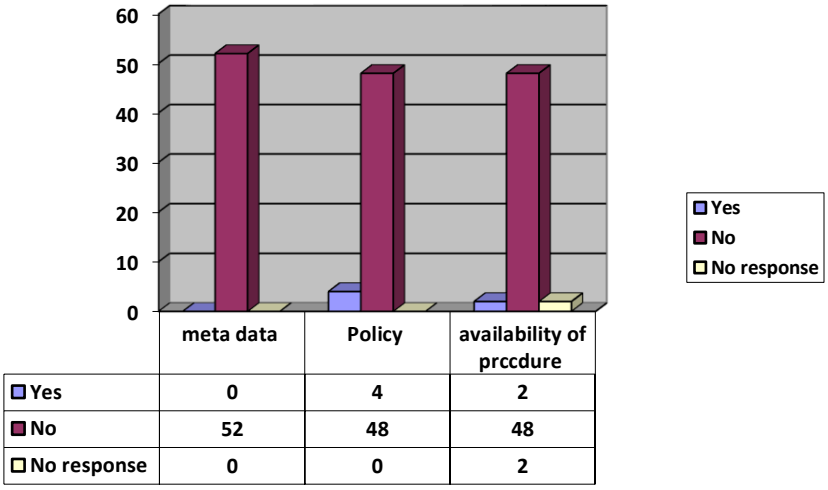
Figure 4.1: Flow of Patient Information at KTRH (Source: Research Data)

4.4.1.1.3 Policy and Procedures Stipulating the Requirements for Creating and Capturing of MR

A total of 4 respondents, all the 3 HRIM officers, and system administrator mentioned that they are aware of a draft policy that governing creation and capture. However, all 4 confirmed that it has not been documented, implemented, or circulated. The other respondents, 10 admission clerks, 23 nurses,8 clinical officers, 7 doctors stated that are completely unaware of such a policy in the hospital. ISO 15489-1 (2016) standards recommend that hospitals should have MR creation policy that stipulates requirements for the description of MR. This finding are were also indicated by CO2:

> *"I have never (shaking the head) seen or heard of a policy for creation and capturing medical records in my line of work."*

When asked whether the hospital had ever revised the policy, all the 52 respondents unanimously indicated it does not exist. From the responses, the study confirmed a lack of policy for the creation of MR (see Fig 4.2 below). However, such a policy would benefit KTRH to ensure patient information is captured as evidence (Shepherd and Yeo, 2003).



	meta data	Policy	availability of prccdure
Yes	0	4	2
No	52	48	48
No response	0	0	2

Figure 4.2: Procedures on the Creation and Capture of MR (Source: Research Data)

The data yielded from interviews provides convincing evidence that KTRH lacked documented procedures for the creation and capture of electronic and paper MR. Out of the total 52 respondents interviewed, majority 48 of the respondents reported that were unaware of such procedures and guidelines for creation and capture of MR as indicated by AC 2 who surprisingly asked:

> "*...ahh (shrugging the shoulder) arethere such procedure in this hospital?"*

All the other categories showed a similar pattern by indicating that KTRH had not developed the procedures for the creation and capture of MR. However, 2 interview participants declined to give a response. Further, data from the interviews with the HRIM officer 3 and 1 system administrator revealed different opinion.HRIM officer 3 stated that:

> "…*we have basic instructions and guidelines on the use of the funsoft system, but this have not been availed or circulated to all section of the hospital."*

Medical records are important for a number of reasons within the hospital: they provide evidence for decision making, documentation, and reference (Mogli, 2009). To help KTRH conform to its core objectives of upholding integrity, accountability, and transparency in its dealings, procedures on the creation and capture of MR are utterly important (Beastall, 1998).

4.4.1.2Organization and Classification of the Medical Record Collection

Classification is a system of categories to which diseases, injuries, conditions, and procedures are assigned according to established criteria. Disease classifications are used to enable the storage, retrieval, and analysis of data. It also allows for the comparison of data (World Health Organization, 2002). Kennedy and Schauder (1998) have also pointed out that MR classification allows for certain actions such as grouping, naming, user permission, security protection, and retrieval of records to be done with ease. Table 4.9 shows classification of MR.

Table 4.8: Organization and Classification of the Medical Record Collection

	Procedures		**Classification Scheme**		**File plan**	
	Yes	**No**	**Yes**	**No**	**Yes**	**No**
Doctors	0	7	0	7	0	7
C\ Officer.	0	8	0	8	0	8
Nurses	6	16	6	16	2	21
HRIM	3	0	3	0	3	0
System Admin.	0	1	0	1	0	1
Admission Clerks	0	10	1	9	2	8

Source: Research Data

4.4.1.2.1 Procedures for Medical Records Classification at KTRH

Classification refers to the logical arrangement or grouping of MR into common characteristics to facilitate description, storage, search, and retrieval (ISO 15489-1, 2016). On MR classification, 9 of the respondents interviewed indicated that the hospital classified its MR most of them being nurses 6 and HRIM officers 3.

According to N2:

> "For *inpatients, different wards have different files with different colors, for example, maternity has yellow while the female medical ward use blue*."

Along similar lines, HRIM officer 2stated that:

> *"Before the medical record is ready to be filed after the completion of the discharge procedure, two important procedures, clinical coding and the collection of healthcare statistics need to be undertaken."*

This confirmed the presence of a classification system. However, 43 including all the 7 doctors, 8 clinical officers, 10 admission clerks, and system administrator said either they not aware or it doesn't. This was due to the fact that the classification process was done by qualified HRIM officers at the hospital's MR main repository.ISO 15489-1 (2016) records management standards encourage healthcare organizations to document procedures for MR classification and filing

4.4.1.2.2Availability of Medical Record Classification Scheme

All the 3 HRIM officer who indicated that there was a classification system, stated that at present KTRH uses the International Statistical Classification of Diseases and Related Health Problems, 10th revision (ICD-10). Thus from the response, the study confirmed the presence of a documented well-defined, organization-wide classification scheme (ICD 10) used in the translation of diseases, health-related

problems, and procedural concepts from text to alphabetic/numeric codes (World Health Organization, 2002). Shepherd and Yeo (2003) posit that every MR should have a known place in the classification scheme.

4.4.1.2.3 Existence of File Plans at KTRH

In terms of the physical arrangement, the 3 HRIO officers and 4 nurses interviewed indicated that MR in the main MR repository were arranged numerically, and a computerized index has been developed for these MR. As indicated by the HRIO officer 1:

> *"KTRH uses a centralized medical record system where all medical records about a patient are filed together in one folder and kept in the hospital's Medical Records main repository."*

Outside the main repository, all the 38 respondents from the clinical department concurred that there was no formula for arranging active MR at KTRH work stations as indicated by N3:

> *"In our work station, there is no formula for arranging files, we put them in any order as received, and since we don't have a designated filing area, we place them on the table in the service areas*."

Although the lack of formula for arranging active MR at the work stations may lead to some delays in patient information retrieval and dissemination, the situation was temporary. This is because such files are not stored in in the work station but merely used in providing services to patients who are hospitalized and as soon as they are discharged the files are transferred back to the MRM unit where they ae arranged in accordance to the filling system in use. Kennedy and Schauder (1998) have pointed out that the ability to effectively locate and retrieve MR required in the course of a business is a key component of any MRM program.

4.4.1.3 Access and Use of Medical Record at KTRH

Access and security of MR involves monitoring of user permissions and functional job responsibilities, privacy and security, tracking of movements and use of MR, and maintain an auditable trail (ISO 15489-1, 2016).

4.4.1.3.1 Procedures for Access and Security of Medical Records at KTRH

Table 4.10 below shows the length of time required for retrieval of information.

Table 4.9: Length of time required for Retrieval of Information

	<15 MIN		16-30 Min		30> Min	
	Paper	**E- rec**	**Paper**	**E- rec**	**Paper**	**E- rec**
Doctors	1	7	3	0	3	0
C\ Officer.	2	8	3	0	3	0
Nurses	4	23	9	0	10	0
HRIM	3	3	0	0	0	0
System Admin.	0	1	1	0	0	0
Admiss. Clerks	4	10	0	0	6	0

Source: Research Data

A closer look at the data from the interviews (See Table 4.10), revealed that, when it comes to retrieving paper MR, 22 of the respondent, the majority being nurses 10, indicated that it took above 30 minutes to retrieve patients' files and information when they needed it, whilst 14 of them including 3 HRIM officers indicted that they took less than 15 min to locate MR in paper format. The situation was better in the electronic environment since all 52 indicated that they took less than 15 min to access MR in electronic format, meaning automation has sped up access to patient information. Every hospital with a MRM program keeps MR for some purposes and for designated users. Therefore, any MRM system that captures MR must have

systems that allow users to use the MR systematically (ISO 15489-1, 2016; Kemoni 2007).

4.4.1.3.2 Systems for Tracking Medical Records

When asked to state if there were any systems for tracking paper MR, out of the 52 respondents interviewed, 46 of the respondents indicated they are not aware of any tracking system in their work station or the hospital, whilst 6 indicated that there is a tracking system but only in the main repository.

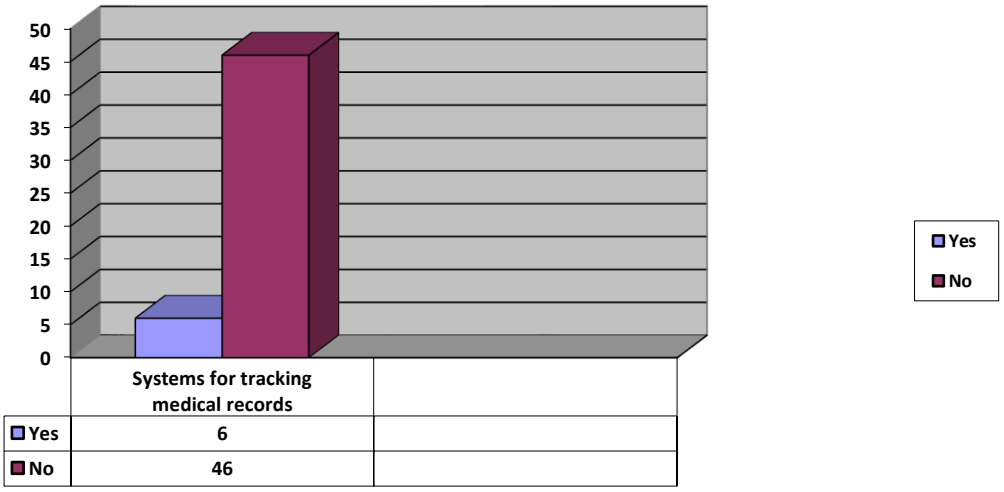


Figure 4.3: Systems for Tracking Medical Records (Source: Research Data)

As seen in the figure 4.3 above, of those who indicated were aware of the tracking system, 2 said they used physical checking of files on shelves as a tool to track records use, 4 used file tracking cards; and none used computerized system. Evident from interview response from HRIO officer 3:

> "We *don't have a computerized system for tracking our medical records, we only rely on records tracking cards and physical checkup that we call weeding."*

Therefore, as also indicated by Ngoepe (2008) and supported by Shepherd and Yeo (2003), KTRH should track its MR and document movement so that the hospital

knows where its records are at any time, monitor the use of MR, and to maintain an auditable trail of MRM processes, such as access by users. The location and movement of physical and electronic MR should be tracked and traceable; auditable processes are in place for the migration of MR and copying, conversions of MR (and their associated metadata) are implemented and monitored (ISO 15389-1 2016). The system should track the issue, transfer between persons, and the return of MR to their 'home location or storage, as well as their disposal or transfer to any other unauthorized external organization, including an archives authority (ISO 15389-1 2016).

4.4.1.3.3 Policies and Guidelines for Access and Security of Medical Records

All the 52-respondent indicated that KTRH has no documented policy regulating access and security of MR. The findings from the study revealed that KTRH had a number of security measures for paper MR including the presence of lockable steel cabinets and doors to the main storage area. However, contrary to these findings, all the 3 HRIM officers indicated similar opinion as AC3 who stated that:

> *"Sometimes it is common practice for staff to retrieve files for themselves especially when there was shortage of HRIM staff."*

This situation created an opportunity for some action offices to temper or steal MR which contains valuable information. However, for active MR in different sections, all the 52 respondents indicated that there was need for improvement.

A similar study on medical records management in Kenya by Kemoni (2007) also found that MR security in many hospitals in Kenya had challenges such as unauthorized access into MR storage areas as messengers and cleaners often had access to MR storage areas. In terms of e-records security, all the 52 respondents

interviewed indicated that users were provided with username and passwords important for tracking user's activity. An interview with the system administrator indicated that patient information was backed-up daily. However, the biggest threat to e-records could be the fact there were no documented regulation on what information should be backed up (Kootsheba, 2011).As ISO 15489-1 (2016) requirement, an organization should have guidelines as to who is permitted access to MR, and on what circumstances is access permitted. Furthermore, e-records management system in place should also control access to guard their integrity and authenticity.

4.4.1.4 Storing and Preserving Medical Records

Scholars of medical records management models and practice agree that MR should be in a format that ensures their preservation and accessibility for as long as they are required (Kemoni, 2007; Shepherd & Yeo, 2006). For electronic MR, computerized medical recordkeeping systems should be tested regularly to determine recovery in case of system malfunctions.

4.4.1.4.1 Procedures for Storing and Preserving Medical Records

On procedures and guidelines covering storing and preserving of all MR irrespective of nature or format, a high proportion of the respondents, 43, indicated that they are not aware of any documented procedure governing storage and preservation of MR in the hospital or their work station (See figure 4.4). However, 9 respondents interviewed had different opinions indicating that although there were no documented procedures, the hospital had a way of preserving MR in the main repository.

As indicated by a response from N4:

> *"After the patient has been discharged, it is routine that the medical records are collected and returned to the main repository for storage and preservatio*n."

Procedures for storage and preservation of MR ensure that these records are secure, intact and accessible, and are handled in media that safeguard their usability, reliability, authenticity, and preservation for as long as users need them (Shepherd and Yeo 2003).

4.4.1.4.2 Methods for Storing and Preserving Medical Records

Concerning the adequacy of the equipment that KTRH used, 42 of the respondents reported that they used equipment that did not sufficiently cater for MR storage. For example, clinical officer 3 indicated that:

> *"KTRH uses cupboard that initially served as medicine cabinets to store patient records and to keep active files*."

While nurse 5stated that:

> *"…due to lack of space we store patient files on the tables or on the floor."*

The responses given concerning storage are contrary to Section 9.6 of the ISO standards ISO 15489-1 (2016) which requires MR to be stored in a media that will ensure their authenticity, reliability, and usability. However, 10 respondents interviewed indicated that in their section of operation, storage and preservation were sufficient. The 10 indicated that they used steel cabinets, adjustable shelves, and wooden racks for storing current and semi-current MR. For electronic records, the SA indicated that:

> "*We regularly back up our information on a daily basis to counter any disaster eventuality, and the hard drives are kept safely in a lockable steel cabinet within our offices."*

The findings agree with what Kemoni (2007) found out that inadequate storage of current and semi-current has the capability to delay speed in decision making as MR retrieval would take long. He further posits that inadequate MR storage equipment could increase the deterioration of MR and thus affect their access and use. The International Standard Organization (ISO) 15489-1 (2016) states that MR require storage conditions and handling processes that take into account their physical and chemical properties.

4.4.1.5 Appraising, Retaining and Disposal of Medical Records

Through interviews, 3 of the respondents from the HRIM department noted that information about current MR types and formats in the hospital was largely incomplete. This was because there has never been a systematic MR survey: identify what MR exist, which MR needs to be captured into the MR keeping system; how long they need to be kept; and where they should be located.

Thus this study reiterates this point of view that the hospital needs to conduct MR survey regularly to establish the formats of MR created and assess how adequately the MRM requirements of the organization are being met. MRM does, in theory, and practice, emphasize the need for guidelines and procedures for appraisal, retention of MR with enduring value, and disposal of MR in both physical and electronic formats (Shephard and Yeo 2003). A medical records inventory is the foundation of sound MRM and is often the first step in establishing a medical records management program (Kemoni 2007; Ramokate & Moatlhodi, 2014).

4.4.1.5.1 Guidelines and Procedures on the Appraising, Retaining and Disposal

Medical Records appraisal is the process by which archivists determine the administrative, legal, and fiscal value (primary value), and the historical and long-

term research value (secondary value) of MR (Craig, 2004). The researcher further sought to find out whether KTRH has issued and documented guidelines and procedures on appraisal. All the 3 HRIM officers indicated that they did not conduct any appraisal. Follow up observation showed that KTRH did not conduct inventories and appraisal.

In Kemoni's (2007) view, the absence of a MR inventory and appraisal in the hospital registries would have a negative effect on the effective MRM as a strategic resource. For instance, it would be difficult to know the volume of MR created, their location, preservation status, and problems faced in providing access. It would be difficult to establish their status, that is, those MR in the current, semi-current, and non-current status, and identify those that were due for disposition (Kemoni, 2007). These results clearly reflect the limits to which the RC model is used at KTRH.

4.4.1.5.2 Medical Records Retention and Disposition Schedules

Out of the 52 respondents interviewed, 33 respondents responded that KTRH had no MR retention and disposition schedules that included guidelines on the conversion of MR to another medium, transfer to archives, and physical destruction of medical records.

As indicated by HRIM officer 2:

> *"KTRH has never destroyed or transferred any medical records even long after the patient has died. As a result, our repository is clogged, and we don't have enough space to store medical records."*

Response from 22 of the respondents did not have a clear grasp of what such a program is and what it entailed. Data from observations indicated that there was no clear policy or procedures and the hospital lacked a retention schedule that sets out the

periods for records retention. These responses imply that in the absence of retention and disposal guidelines, users used experience and long-standing procedures to determine how long MR were required and as a result, the storage area was clogged. MRM systems should be capable of facilitating and implementing decisions on the retention or disposition of MR in all formats. It consists of determining how long to retain MR (the retention period), maintaining the MR so that they are retrievable and useable over the defined time period, and when the retention period has been met, destroying the MR or, if they have historical value transferring them to an archive (Nye, 2010).

4.4.2 Use of Medical Records in Supporting Evidence-Based Practices

It was clear from research findings that MR is useful in the provision of health care. The notion that MR is used to support evidence-based practices in the provision of health care at KTRH is best described by D6 who stated that:

> *"Even the most experienced medical practitioner uses patient information from previous diagnoses, treatments, and prescriptions in order to note the progress made with previous treatments and how to move forward."*

The idea that MR is useful evidential resources in the provision of healthcare was also referred to regularly by a range of participants. Medical records are important for several reasons within the hospital: they provide evidence for decision making, documentation, and reference (Mogli, 2009). The MR also supports the diagnosis or reason for attendance at the health care facility, justifies the treatment (Pickett & Wilkinson, 2015). From the study, the majority of the respondents indicated that MR supports patient treatment and care, communication between physicians and other health workers. A view supported by HRIM officer 1 who stated that:

> *"Medical records are useful because they serve as corporate memory for the hospitals and also instrumental assets necessary research purposes, legal purposes, and billing purposes for treatment received."*

Further, out of the respondents interviewed, all 52 said that they used MR daily in the execution of their work and 46 said monthly mostly for reports. As shown below in Table 4.8.

Table 4.11: Frequency of Use and Satisfaction

	Daily	**Weekly**	**Monthly**
	No.	**No.**	**No.**
Doctors	7	4	7
C\ Officers	8	4	8
Nurses	23	10	23
HRIM	3	2	3
System Admin.	1	1	1
Admission Clerks	10	5	4

Source: Research Data

However, only a small number indicated that the current medical records management program at KTRH served them to their satisfaction.

For example, N1 stated that:

> *"Sometimes files took longer to reach the wards especially at night when the medical repository is closed and as such it is often difficult to deliver required services*."

While, doctor 2 indicated that:

> *"There have been instances where we were unable to completely access a medical record because they were either misplaced or could not be traced and therefore forced to restart care from scratch."*

4.5 Policies and Procedural Frameworks Governing Management

This study acknowledges that in order for medical records at KTRH to retain their evidential values, the medical records management program must be supported by procedures and guidelines (Mnjama and Wamukoya, 2004), hence the importance of the 2nd research question on whether medical records are kept and managed in accordance with the policy directives and procedural framework.

4.5.1 Policies Governing Management of Medical Records

As a standard for best practices in records management section 6.1 of ISO 15489-1 (2016) specifies that organization should establish document, maintain and promulgate policies and procedures to guarantee that its business need for evidence and accountability and information about activities is met. KTRH should, therefore, ensure that such policies are implemented and maintained at all levels, and document MR objectives.

4.5.1.1 Availability of Medical Records Management Policy

There were differences in opinion across the category of respondents. A high proportion of respondents from the admission and clinical departments, 50 of the 52 respondents interviewed, said that they were not aware of a written MRM policy set by the hospital in their line of work.

For example,D3 stated that:

> *"In my line of work (shaking the head), I have never heard or seen a medical records management policy, but we have been working under instructions from their HRIM officers and system administrator*."

While AC 4 indicated that:

> *"We rely on experienced staff for advice on some aspects of medical records. and sometimes we have to create our policy when need be in the course of managing their medical records."*

Contrary, the opinion of the 1 HRIM officer and System Administrator acknowledged the absence of such a policy but indicated that there was a draft but it was not functional. The observation revealed that a specific policy addressing MRM issues was not available. Evidence from a response by HRIM officer 1 who stated that:

> *"Well (shaking the head) we truly don't have a policy, but there is a draft that will be presented to the management soon for approval*."

4.5.1.2 Policy Adoption at Top Management Level

When respondents were asked about policy adoption at the top management level, all 52, including the 2 respondents who said the policy was in place, stated that the draft policy had not been adopted at the top management because it was still a proposal.For a policy to be effective, it has to be endorsed and implemented by the head of the HRIM department as well as the hospital's top management team (Wamukoya, 2007).

4.5.1.3 Documented Medical Records Objectives

When respondents were asked about objectives, all 52 respondents indicated the objectives were not speltout since there was no policy. However,HRIO In-charge was of the opinion that it had a medical records management objective defined in the service chatter.

According to SA:

> *"We have a service chatter that states the roles and core objectives of each department including the HRIM and ICT departments*."

4.5.2 Availability of Medical Records Management Procedures

The finding showed that a high proportion of respondents 38 including nurses, medical officers, and doctors from the clinical department confirmed that the hospital had not yet developed procedures for titling, indexing, classifying, and describing MR. Similarly, respondents from the admission department 10 showed a similar pattern of saying that they were not aware of documented MRM procedures in their line of work.

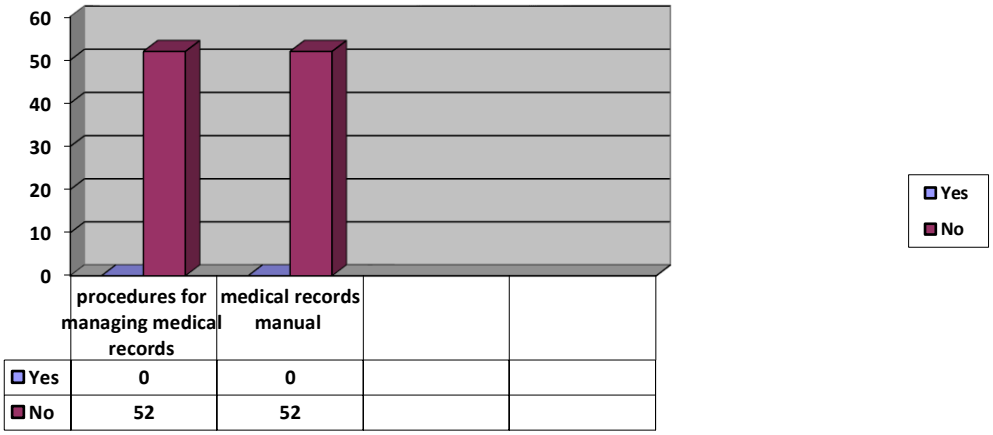


Figure 4.4: Procedures to Manage Medical Records (Source: Research Data)

AC5said:

> *"No one has told me of a standard or procedures for medical records management."*

However, 4 of the respondents from HRIM and ICT departments gave a different opinion indicating that there were aware of what the MRM procedures entail, but they all confessed that these procedures are not documented. The International Standard on Records Management ISO 15489-1 (2016) as one of the international benchmarks on medical records management encourages hospitals to document MRM procedures; promotes compliance to these procedures; and develop tools such as the MRM procedure manual.

4.5.2.1 Availability of Medical Records Management Procedural Manual

The MRM manual provides information on who, what, when, where, and how the MRM systems operate for those who may use the service (Kennedy & Schauder 1998). A MRM manual is therefore necessary. When the researcher interviewed respondents about the availability of a procedure manual, 2 of the respondents stated that it was available, 46 said it was not available and 4 did not respond to the question. However, the 2 who indicated the presence of the manual further indicated that the manual was not documented but was in the process of being documented. From the responses, it was clear that KTRH has not developed, documented, and distributed a MRM procedural manual to help in standardizing procedures, establishing responsibility, assisting in employee training, and providing updates for policies and procedures for physical MR as well as e-records (ISO 15489-1, 2016) throughout the hospital's sections.

It has been established that lack of MRM policy and procedural frameworks has negative implications for health care service delivery. According to Kemoni (2007) without a MRM policy for instance, it is difficult to establish efficient MRM systems that supports decision-making. Kemoni further posits that the absence of a MRM policy has the ability to obstruct the role of health care service providers. Thus the lack of a MRM procedures manual would have implications such as MRM personnel not having the necessary guidelines for MRM during the continuum of activities that would make the MRM throughout their life-cycle easier.

4.6 Knowledge, Skills and Training of Staff in Management of Medical Records

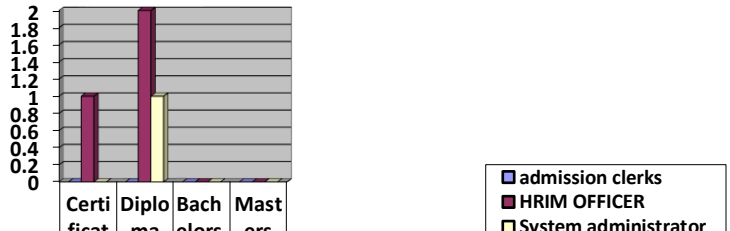
Study question (3) sought to find out the knowledge, skills, and training needed in the management of medical records at KTRH. The RC Model promotes the integration of

MR and archives management practices and hence leverages patient information and MR in a manner that fits modern healthcare organizations (McKemmish, 2001).

In addition, authorities in MRM propound that a sound education at the point of entry to the profession, competency-based training for continuing professional development, and involvement in research-based inquiry and knowledge creation all have essential roles in developing and sustaining well rounded medical records professionals, to the greater benefit of the profession as a whole (Anderson, 2010; Kalusopa, 2011; Kemoni, 2007).

4.6.1 Medical Record Management Related Professional Training at KTRH

The researcher sought to know the professional levels of the creators and managers of MR at the KTRH. Figure 4.6 below shows knowledge and skills of staff in management of medical records. Professional training is a prerequisite for an effective MRM service. The success of any MRM program depends on the professional capacity and status of the staff responsible for the use, creation, and maintenance of MR (Kalusopa, 2011; Kemoni, 2007).



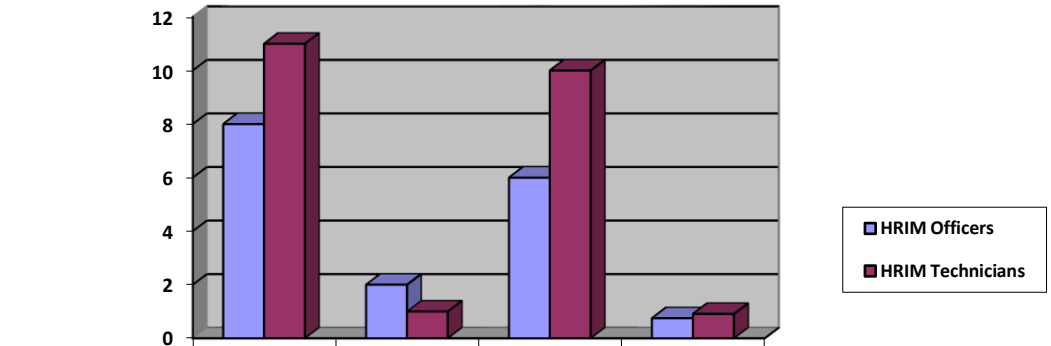
	Certificate	Diploma	Bachelors Degree	Masters
admission clerks	0	0	0	0
HRIM OFFICER	1	2	0	0
System administrator	0	1	0	0

Figure 4.5: Knowledge and Skills of Staff in MRM (Source: Research Data)

The study revealed (see Figure 4.6) that a fraction of the personnel have professional training. All the admission clerks interviewed who create and generate MR, 10 indicated that they had not received any education in MRM. Further, the response given by the 10 admission clerks interviewed indicated that they had received certificates as their highest level of professional education but not in MRM. In addition, for those who manage MR, 2 respondents stated that they had diplomas medical records and information management and 1 indicated a certificate in the same. None held a university degree or masters in medical records management or related courses. The ISO 15489 (2016) standards require organizations to set up programs for training on medical record management. On basic training basic in medical records for clinical staff that use medical records in practice at KTRH, 36 of the respondents interviewed indicated that they had not received basic training on medical records management policies and procedures, while a response of 45 indicated that they had been trained in basics of electronic MRM.

4.6.2 Number of Skilled Personnel in Medical Records at KTRH

Every health organization needs a medical records department that is organized and staffed to provide adequate information (Perspective health information management, 2006). Figure 4.7 below shows the number of skilled personnel in medical records at KTRH.



	Required	Available	Defecit	percentage Deficit
HRIM Officers	8	2	6	75%
HRIM Technicians	11	1	10	91%

Figure 4.6: Number of Skilled Personnel in MRM (Source: Research Data)

Out of the 52 respondents interviewed, a total of 3 respondents indicated they work in the HRIM department (See 4.7 above). Out of the 3 working in the department, 2 indicated that they worked as HRIM Officers and 1 as HRIM Technician. According to the Second National Health Strategic Plan of Kenya 2011/2012, a referral hospital should have at least 8 HRIM Officers and at least 11 HRIM Technicians. This means that the hospital has a deficit of 6 HRI Officers and 10 HRI Technicians. This translates to a 16 (89%) staff deficit in the HRIM department, compromising on the quality and quantity of data in the hospital. Research on records management and service delivery in Kenya by Kemoni's (2007) revealed that that most of the records management personnel in the public sector, including the healthcare sector, were under trained. Therefore, health care organizations need to demonstrate good faith intentions by following best practices consistently and accurately (ISO 15489, 2016).

4.7 The Use of ICT in MRM to Support Evidence-based Practices

Study question (4) sought to explore the level of ICTs preparedness in the management of medical records in supporting evidence-based practices at KTRH. RC

model provides a useful framework for the integration of ICT in MRM. The model thinking regards that medical records should be continuously managed within time/space construction (McKemmish, 2001).

4.7.1 ICT Infrastructure in Management of Medical Records at KTRH

An increasing number of hospitals are adopting ICT and evidence-based applications as a tool for providing effective healthcare services (Unadkat et al., 2020; Issa, & Wamukoya, 2018; Nzoka & Ananda, 2014). The findings showed that KTRH has embraced the use of ICTs as indicated by the presence and use of a number of hardware and software. Figure 4.8 below indicate the use of ICT at KTRH.

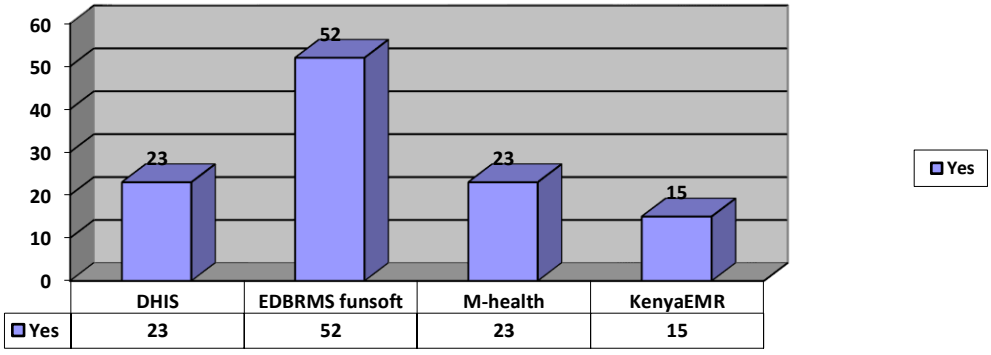


Figure 4.7: Use of ICT in Managing Medical Records (Source: Research Data)

Out of the 52 respondents interviewed, 34 respondents indicated that they used ICT for out-patient/inpatient admissions, sharing of information within the hospital departments were 42 respondents; coordinating and facilitating efficient service delivery within the hospital were 38 respondents, and clerking of patients were 45 respondents(See Figure 4.8 above).Further, in the course of their work 32 of the respondents said they used DHIS whereas, 23 respondents mentioned mobile health (M-health) systems, another 15 respondents cited Kenya EMR system, and all the 52mentioned that they used EDRMS by Funsoft networked through different

departments. However, the use of a fully computerized system may improve the effectiveness but only where the basic manual procedures are already in place and well organized (WHO, 2012).

4.7.2 Challenges in the Adoption of ICTS

Using a multi response list, the challenges in the use and adoption of ICTs were identified by respondents as including inadequacy of financial resources, lack of training on the ICT use, inadequate security measures, shortage of knowledge of software, and inadequate standard procedures. As indicated by HRIM officer 2:

> *"We have minimal training in the management of electronic records. But we are just fine with the use of computers even infrastructure is in place. But we really need training on electronic medical records for us to support well."*

This study acknowledges that the adoption of ICTs involves considerable costs and requires special management skills; however, it is worth noting that there is a need to improve the way computers are acquired, deployed, and used. This comes in light of the fact that there is a shortage of computers in KTRH especially in the HRIM unit where 3 indicated that they didn't have computers. All the respondents interviewed (52) acknowledged that the adoption of ICT requires special MRM and skills. However, it is worth noting that there is a need to improve the way computer applications are deployed and used in the management of MR (Waithera et al., 2017). This comes in light of the fact that KTRH continues to adopt computer-based applications and evidence-based applications without due considerations to medical records management and the impact they have on health care delivery (Ondieki, 2017).

4.8 The Strategies to improve on MRM to Supporting Evidence-based Practices

Research question (5) sought to find out what the possible strategies to improve medical records management at Kisii Teaching and Referral Hospital are. MRM scholars and models indicate that MRM is a business process that is required to support healthcare activities in hospitals. It, therefore, comes as no surprise that KTRH should adopt effective strategies that will ensure the best medical records practices.

4.8.1 Challenges Associated with Management of Medical Records at KTRH

Findings from interviews revealed that there were existing problems that hindered KTRH from providing MRM services effectively. For instance, all the 3 HRIM officers interviewed identified factors contributing to the current MRM situation at the hospital as including lack of resources and equipment but more specifically shortage of skilled personnel. The major problem affecting MRM at the KTRH, as indicated by the majority of the respondents, includes lack of standard, policy and procedural framework, inadequate fund, lack space for the increasing number of MR. For electronic MR, there were challenges identified by the 52 respondents interviewed. Further, respondents identified inadequacy of financial resources, inadequate training on the ICT use; inadequate security measures, system failure, and some inadequate standard procedures.

Robinson (2008) explains one demerit of electronic MR by noting: “Unlike paper, loss of electronic records is guaranteed unless actively managed”. This means that there is need to always keep up to date with the new technologies to make sure that the patient information available in the current formats can be accessed even in future when technology has changed. The problem of inefficient MR is not new.

In Kenya, Kang'a et al. (2017) reveled that public sector records management program, including those in the health sector, are plagued by various problems due to the inability of registries to play their roles effectively. To improve the hospital's ability to deliver quality health care services, all 52 of the respondents however were of the view that the program needed improvement. Since medical record is a permanent documentation of the history and progress of a patient's medical care used for continuity of a patient's care, outlining the course of a patient's medical care (Pickett and Wilkinson, 2015), its management is crucial.

4.8.2 Proposed Strategies to Improve Medical Records Management at KTRH

The 52 respondents interviewed indicated that KTRH should develop operational policies and procedural frameworks for MRM, provide knowledge and skill to staff, improve on ICT infrastructure, and adopt the recommendations and best-practice strategies to improve MRM. However, cautious treatment should be afforded to both manual and electronic MR in terms of capture and overall management so as to provide verifiable evidence needed to support quality patient care, fulfill hospital's policy and objectives, and protect fundamental value on which health care is built (World Health Organization, 2002).

In that regard, there was need for thorough assessment of MRM at KTRH in order to ascertain whether a strong underlying MR and information management infrastructure and if functionalities are in place and effectively implemented (Marutha, 2016; Nzoka & Ananda, 2014).This study acknowledged medical records management as vital in supporting evidence-based practices at KTRH. However, the study revealed that the current state of medical records management at KTRH is likely to impede provision of quality health care and therefore requires urgent attention.

The study therefore concluded that, for the medical records management program at KTRH to succeed, the hospital should integrate medical records management functional, structural and infrastructural records management aspects into the hospital's HIS and business process and continuously manage these records in line with the Records Continuum Model and best-practice strategies proposed by this study

4.9 Chapter Summary

This chapter has presented data in accordance with the research objectives and research questions. It has provided a summary of the research findings. Data is presented in the form of descriptive narratives, and where possible, figures, tables, and charts are used to highlight issues. The findings established that: the general status of medical records management was inadequately positioned to support evidence-based practices; the hospital lacks comprehensive medical records management policies and procedural frameworks; basic medical record management skills among staff were inadequate; there are initiatives undertaken to adopt the use of information and communication technology in managing medical records but require improvement; and there exist several challenges in the management of medical records that impact on the provision of health care based on reliable evidence.

CHAPTER FIVE

INTERPRETATION AND DISCUSSION OF FINDINGS

5.1 Introduction

This chapter presents an interpretation and discussion of findings obtained from the qualitative data presented in chapter four (4). Data interpretation and discussion was essential for this study because it links the findings to existing knowledge on the subject as well as incorporating the literature and views from other researchers (Nengomasha, 2009), which in turn helps in identifying the proper place of the research within the existing universe of knowledge and draw accurate conclusions (Ngulube 2015; Silverman 2011; Babbie & Mouton 2010). Interpretation begins with an attempt to explain the research findings within the context of the theoretical framework and prior empirical knowledge. In agreement, Kothari (2004) states that interpretation and discussion of findings provide a theoretical basis for further research. LoBiondo-Wood and Haber (2014) concur with Kothari (2004) by asserting that by deducing and discussing the results, the researcher brings data to life.

The aim of this study was to assess MRM in supporting evidence-based medical practices at KTRH with a view of proposing strategies to improve MRM in the hospital. Through critical analysis, the chapter addresses whether each research objective and question have been met and answered respectively. The interpretation of the research findings has been done according to the themes in line with research questions restated as follows:

1. How are medical records created and managed, their use, and their role in supporting evidence-based practices at Kisii Teaching and Referral Hospital?

2. Are medical records kept and managed in accordance with the policy directives and procedural framework?

3. What knowledge, skills, and training are needed to create and manage medical records at Kisii Teaching and Referral Hospital?

4. What is the level of ICT preparedness in the management of medical records in supporting evidence-based practices at Kisii Teaching and Referral Hospital?

5. What are the possible strategies to improve medical records management at Kisii Teaching and Referral Hospital?

The respondents comprised of 52 participants drawn from the four departments namely: clinical, admissions, HRIM, and ICT department. The study was underpinned by the RC model (Upward, 2001) and The JHNEBP model (Dang and Dearholt, 2017). Additionally, a qualitative research paradigm was adopted in order to acquire an in-depth insight into MRM and evidence-based practices situation at KTRH. The approach enabled the researcher to collect qualitative data from the admission clerks; doctors, nurses, and clinical officers; HRIM officers, and a system administrator. Participants were selected because of their roles in creation, use of MR in practice, and managing MR and therefore represent a demographically diverse group. Ambira (2016) adopted a similar approach in a study on a framework for the management of electronic records in support of e-government in Kenya.

5.2 Response Rate

In qualitative researches, sample sizes may or may not be fixed prior to data collection and there are no rules for sample size. On the contrary, American

Association for Public Opinion Research (AAPOR)(2017) stresses that in qualitative studies the response rate is fixed prior to research and is usually expressed in the form of percentages. However, when it comes to giving responses, different studies will obtain different response depending on the prevailing conditions. For example, Morse (2015) points out that an appropriate response is one that adequately answers the research question and is therefore determined on the basis of theoretical saturation. In the same breath, Krishnaswami and Ranganathan (2010) provide that when the population to be studied is relatively small, the investigator may decide to study the entire population. From the foregoing, it is clear that there is no rule in qualitative research about what constitutes an acceptable response in a qualitative research. Along similar lines, Denscombe (2007) propounds the view that the aim of good research is to keep non-responses to a minimum and to achieve the highest response rate that is possible in relation to the kind of research being conducted.

In the case of this study, for admission clerks, doctors, clinical officers, and nurses, the researcher stopped seeking responses when new categories, themes, and explanations stopped emerging (Fusch & Ness 2015; Mack et al, 2005). As argued by Saunders et al. (2018) saturation is used in qualitative research as a criterion for discontinuing data collection and/or analysis. Meanwhile, for the ICT and HRIM departments, it was possible to interview all the staff members (census). This was because the HRIM officer in charge was so enthusiastic and supportive, and the fact that the number of staff in these departments was small. Within KTRH the scheduled number of interviews for participants was encouraging, with the exception that accessing a few respondents was problematic especially the doctors due to their busy schedules coupled with other bureaucratic constraints.

This implies that the doctors delayed the data collection process for the researcher. To address this challenge, the researcher booked appointments with such officers in good time, and eventually, all the participants were interviewed in the circumstances. Nevertheless, other cadres in the clinical department including nurses and clinical officers were found willing and available to be interviewed. It can be seen in the analysis that the ideas from Glaser and Strauss's (2017) grounded theory on theoretical saturation in qualitative research (Mack et al., 2005) and census by Krishnaswami and Ranganathan (2010) are predominantly offered up as an as explanations for the response rate in this study. It is, therefore, concluded that the response rate for this study was adequate to make conclusions for the study.

5.3 Background Information of Respondents

This set of data was intended to describe demographic variables of the sample, and assess for any influence on the research findings. The demographic data consisted of age, gender, sections, qualifications, and years of experience. The RC model (Upward, 2001) and the JHNEBP model (Dang and Dearholt, 2017) that are used to underpin this study illuminate on the background of the respondents by focusing on the functional, structural and infrastructural aspects of MRM. These theories are tools developed to help healthcare organizations in growing their capability in areas such as policy and procedural frameworks; human capacity; the use of ICT in the MRM; and provide strategies in managing MR as evidential resources.

5.3.1 Distribution of Respondents by Age Group

The findings revealed that the majority of the respondents (56%) were in the age group 25 to 45 years. This implies that the majority of respondents were in the active working class of the population, which is expected in the formal public sector.

Whereas 26 were aged between 25 to 35 years, 16 of the respondent were aged between 36 to 45 years, a probable pointer to the emerging younger labour force now at various levels of employment. This is an indication that respondents were fairly distributed in terms of their age. A Kenya Health Workforce Report on the status of healthcare professionals in Kenya proposed the development of training programs to cover for staff turnover that may arise as a result of retirements and other factors (Ministry of Health, 2015).

5.3.2 Distribution of Respondents by Gender

The findings revealed that interview participants were predominantly female than male in a ratio of 2:1, mirroring the demographics of KTRH staff. These results suggest that significant proportions of the respondents were covered, and the study did not suffer from gender bias.

5.3.3 Distribution of Respondents by Sections

Respondents were drawn from the four (4) departments namely clinical, admissions, HRIM, and ICT at KTRH. The study focused on these departments because of their role in the creation, use, and management of MR. The results revealed that the majority (38) of the respondents reported that they work in the clinical department in line with the hospital's mission of providing quality healthcare services (KTRH). There were 23 nurses, 8 clinical officers, and 7 doctors who responded to the interview questions from the clinical department. 10 respondents stated that they work in admissions, 3 in the HRIM department, and 1 reported that he works in the ICT department as a systems administrator. This result is in tandem with the assertion of Ondieki (2017) and Waithera et al. (2017) who pointed out that although KTRH is a

clinical intensive institution, it needs another pool of staff to support in attaining its core mandate.

5.3.4 Distribution of Respondents by Qualifications

Out of the 52 respondents interviewed, a large number of the respondents (22) indicated Diploma as their highest qualification. The results revealed that 15 of the respondents were bachelor's degree holders, 4 were masters' degree holders, and 11 indicated certificate as their highest qualifications. However, it is interesting to note that although MR are critical to healthcare provision, the 3 employees working in the HRIM department indicated a diploma as their highest qualification. These findings are in line with earlier studies by Nasieuku, et. al. (2011), Maseh(2015), and Were (2013) on MRM, who indicated a shortage of qualified staff in the public sector in Kenya.

5.3.5 Distribution of Respondents According to Job Experience

Whereas majority of the respondents (20) reported that they had been in the hospital for a period of 6 to 10 years, 6 of the respondents indicated less than 1 year. It is important to note that, the majority of the respondents had a specialty in their area of work hence deemed qualified to give a response regarding their area of specialization. It also implies that respondents have interacted with the MR system for a long period to give credible information relating to this study.

5.4 Status of Medical Records in Supporting Evidence-based Practices at KTRH

One of the underpinning models for the study was the Records Continuum Model which as described in chapter 2 is a consistent and coherent regime of management processes from the time of the creation of records through to the preservation and use of records as archives (Upward, 2001).

The dimensions of create, capture, and organize in the RC Model recognize the need to manage MR wholistically (Upward, 2001; Standards Australia, 1996). While, in line with the JHNEBP model, the first step to improving a process is to inquire and analyze it in order to understand the activities, their relationships and the values of relevant metrics (Dang and Dearholt, 2017).

For this study, an insightful look into the current status of MR at KTRH was found to be more helpful in understanding if the MRM processes are restructured in parallel with business processes and whether the MRM requirements are built into the KTRH business processes (ISO 15489-1, 2016; Ondieki, 2017). In support, Erima and Wamukoya (2012) and Ambira (2016) hold the view that understanding of business activities is a pre-requisite since it served to establish the relationship between sound records management and quality service provision.

Findings from interviews found out that there were existing problems that hindered KTRH from providing MRM services effectively. The respondents were asked to give their views on the status of MRM with regards to the provision of healthcare and supporting evidence-based practices at KTRH. The majority of those that were interviewed depicted an average or fair management of MR. The respondents, however, opined that compared to how MR were managed in the past, there was an improvement especially after the promulgation of the Constitution 2010 of Kenya and the launch of an institution-wide EDRMS to manage health information in the hospital. Furthermore, the majority of the respondent explained MRM at KTRH still needed to be improved.

This analysis has identified a number of sub-themes adapted from the first research question: How are medical records created and managed, their use, and their role in supporting evidence-based practices at Kisii Teaching and Referral Hospital?

5.4.1Medical Records Management from Creation to Disposition

As indicated in the preceding sections, MRM is a business process that is required to support the business activity of a hospital. It, therefore, comes as no surprise that hospitals should adopt regulatory frameworks that will ensure the best in MRM practices. In support, Wamukoya (2000) holds the view that if records are to maintain their evidential weight, their management must cover the whole extent of their existence i.e. from creation to disposition through to their use as archives. In tandem with the provisions of the RC Model, MR should therefore be well managed right from the time they are created to their ultimate disposition to ensure their continuous availability. The discussion of findings on the theme of MRM within KTRH is, therefore, discussed under the following headings in line with best medical records management practices (ISO 15489-1, 2016):

5.4.1.1 The Creation and Capturing of Medical Records

Creation and capture are key dimensions in the RC model and major processes for the management of medical records identified by the ISO 15489-1 (2016) standards. Dimension one (1) and Dimension two (2) of the RC model require that MR systems capture, manage, and maintain medical records with sound evidential characteristics (McKemmish, 2001).

5.4.1.1.1 How Medical Records are Generated and Captured at KTRH

To understand how MR are generated or created, respondents were asked to state their responsibilities and activities that generate MR. Equally, scholars in MRM theory and

practice agree that in principle, MR should be created and captured for every hospital activity involving more than one party or that each process that generates MR should be identified, recorded, and incorporated into the MRM system (Bearman, 1994; Reed, 2005; Shepherd & Yeo, 2006). The in-depth interviews revealed that clinical and non-clinical staff performed duties that were directed towards the provision of healthcare, and they depended entirely on MR to perform their roles in line with the hospital's core mandate (KTRH). This was supported by responses from all the 52 interviewees who unanimously indicated that both clinical and non-clinical activities such as registration and clerking of patients, sending of radiological and laboratory requests, sending of drug prescriptions, raising of departmental internal requisitions, and communication to other healthcare providers led naturally to the creation of MR.

The general view of the above is that the main source of the MR is the hospital itself. MR are created when a clinician is attending to the patient, or it's done by an admission clerk or an HRIM officer. In other words, MR provides credible and authoritative evidence to support healthcare provision, hence the need to maintain an effective and efficient MRM program at KTRH. This finding was in agreement with the assertion of Ondieki (2017) and Waithera et al. (2017) in their study on the impact of electronic MR on healthcare delivery in KTRH. These scholars reported that the hospital is centered on clinical services and non-clinical services that depend on the availability of accurate, authentic, and reliable patient information presented on time, and for this reason, there is a need for a top notch MRM program to support the mandate of KTRH.

5.4.1.1.2 Metadata Associated with an Individual Medical Record

The capture dimension in the RC model state that a document should be communicated or connected through relationships with other documents, with sequences of action. Metadata plays an important role just like printed guidelines to achieve effective MRM. ISO 15489-1 (2016) and WHO (2006) agree that at the point of capture, the metadata documentation of a MR context should be fixed to, embedded in, or attached to the specific MR regardless of format. All 52 of the respondents said they are not aware of such procedures and guidelines. In that regard, the study concluded that KTRH's MRM system does not document metadata and the allocation of explicit metadata documenting MR context was still problematic.

The researcher is of the view that for MR to be authentic and complete, there is a need for metadata which gives individual MR their context within the business process that generated them, and it links the MR together so that they can serve their purpose in documenting individual cases. In agreement, IRMT (2008) indicates that ICT systems must have the capability to generate or capture the required metadata that document the circumstances of their creation of MR. The absence of MRM guidelines on metadata at KTRH, therefore, suggested that MRM was ineffective. This may undermine the capture of records as evidential resources which may impede the provision of healthcare delivery. As already been shown earlier, Wamukoya (2000) pointed out that records represent a major source of information and are almost the only reliable and legally verifiable data source that can serve as evidence of decisions, actions, and transactions in the public service. This will allow MR to be captured as evidence of transactions and can be distributed, accessed, and understood by others involved in the business transactions (ISO 15489-1, 2016).

5.4.1.1.3Type and Formats of Medical Record at KTRH

Shepherd and Yeo (2003) are of the view that an effective RM program should encompass the management of all records regardless of their formats. MR are in different types and formats, as stated by Were (2013) and Pat (2010), depending on the size and activities of a hospital. Each one has a different type of content that requires a different type of formatting standards. Contrary to this, Erlandsson (1997) argues that MRM systems in the electronic, as well as in the paper are designed for the use of operational staff in current office operations, and not for or by archivists or for external researchers. However, findings from the study indicated otherwise.

All respondents interviewed confirmed the existence of massive MR within their departments. These MR arose from duties performed towards the provision of healthcare, which is the hospital's core business (Waithera et al., 2017). The system administrator and the 3 HRIM officers affirmed that these activities led to the generation and/or receipt of MR both in paper and electronic formats. The most common types of MR that provide evidence essential for healthcare provision., cited by different individuals within the distinct departments, include patient case notes, x-rays, pathological specimens and preparations, patient indexes and registers, pharmacy and drug records, nursing, and ward records among others. Findings from the study also revealed that the hospital has an EDRMS system in place. The fundamental function of the EDRMS system is to collect information on the clinical history of patients during hospitalization—acting as a tool to support the multidisciplinary communication between professionals, operations management, and decisions. The majority of the respondents further indicated that 70% of the MR were still in paper format despite the recent automation of the hospital's healthcare services.

Using an observation checklist, the study discovered that both electronic and paper-based formats were used and produced at KTRH. Although paper was a common medium of transmission and storage of patient information in hospitals, e-records are slowly becoming more common. Of the 52 respondents interviewed, the majority used paper for inpatient whereas, most of the respondents acknowledged the use of e-record for outpatient. An indication that paper format is dominant for inpatient, while the electronic format is dominant in outpatient for most respondents. As also indicated by the system administrator, as a requirement, all outpatients must be checked into the EDRMS fun soft system before a review, while all inpatients must have a physical file before admission into the wards (KTRH).

Previous research has also established that paper-based records are the most dominant in most government organizations (Kalusopa, 2011; Kootshabe, 2011; Ramokate& Moatlhodi, 2014).However, Koech et al. (2017) and Were (2013) confirmed the absence of documentation on MR type and formats in public hospitals in Kenya. Based on the findings, the study concluded that the information about current MR types and formats in most sections of the hospital was incomplete. It is, therefore, important for ISO-compliant records management programs to record the types and formats of MR that hospitals create and maintain. A MR inventory is the foundation of sound MRM and is often the first step in establishing a MRM program (North Territory National Archives services, 2006). Thus, this study reiterates his point of view that KTRH needs to conduct MR survey regularly to establish the formats of MR created and assess how adequately the MRM requirements of the organization are being met. Other researchers have focused on the issues of MR surveys and have also emphasized the need for regular MR surveys to identify and list the type of MR (Kemoni 2007; Ramokate & Moatlhodi, 2010).

5.4.1.1.4Flow of Patient Information at KTRH

From an MRM functional viewpoint, the study revealed that activities from patient registration, clinical and MR systems are the three main levels that influence the quality of evidence, and are the major source of MR at KTRH. The majority of staff interviewed indicated that in core clinical operation which rely on evidential information, these findings imply that MRM should be at the core of KTRH to safeguard evidential information from MR. The significance of these findings is an indication of the sensitive nature of healthcare service, which affirms the critical role of MRM in health care provision. It also means that MRM, therefore, is of primary importance to supporting evidence-based practices as observed by Dang and Dearholt, (2017) and Carter (2015). This view is supported by the majority of the respondents interviewed. The figure 5.1 below shows the flow of patients' information, activities at different service points that generate medical records, and the MRM functionalities at KTRH.

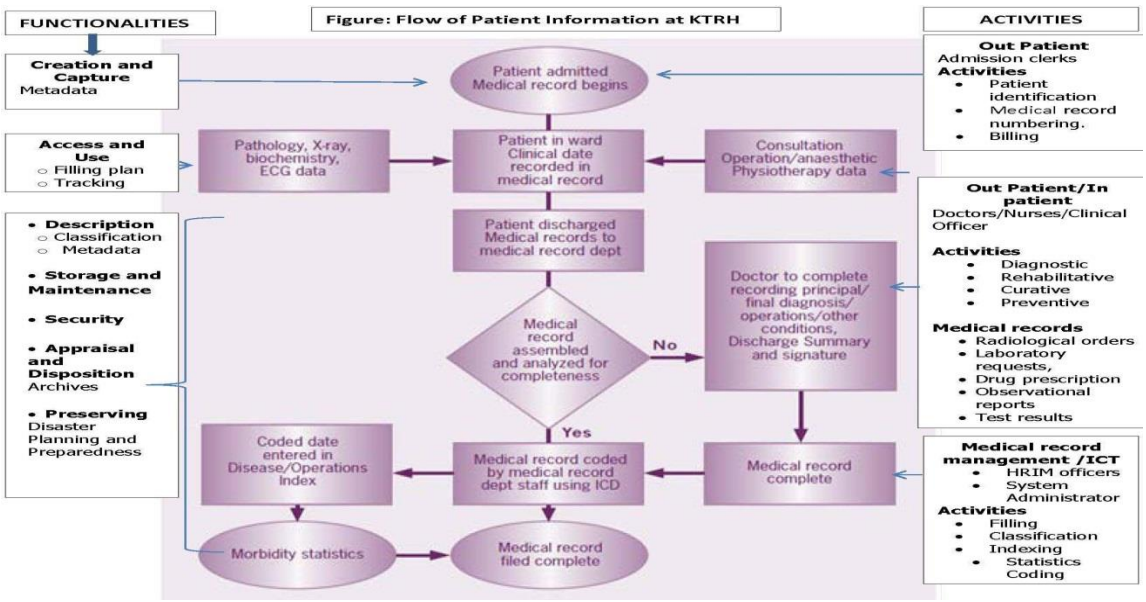


Figure 5.1: Flow of Patient Information at KTRH (Source: Research Data)

As seen in figure 5.1 above the admissions section carries out critical activities related to patient identification and MR numbering, which is usually considered the first stage of the MR. These findings are in agreement with the assertion of WHO (2010) stating that medical records must contain sufficient data to identify the patient, support the diagnosis, justify the treatment, and accurately document the results of that treatment. Thus, the source and the process of patient identification and creation of the MR are vital since the two determine the value of that MR and its usability.

The second key area that generates MR at KTRH identified by the study are the clinical sections. Locatelli et al. (2010) point out that clinical information flows to support care and act as a unique point of reference for clinical decisions. The corresponding responses by the majority of the respondents from the clinical department indicated that they provide direct clinical service and performed activities relating to diagnosis, and treatment of patients and discharge procedure. These activities are ideally responsible for the growth and expansion of a MR. These findings agree with those of other scholars who also acknowledged the occurrence of this situation in the healthcare environment (Mogli, 2009; Pickett & Wilkinson, 2015; WHO, 2006). Ondieki (2017) postulated that entries are made in all inpatient, outpatient, and service treatment by the healthcare provider who provides care so that previous medical information is available when the patient returns to the healthcare facility.

Although the overall findings indicated that clinical systems are critical to the growth of MR in the hospital, the majority of the respondents further revealed that it is also the most challenging area in terms of management, due on the one side to the involvement of critical patient data, and on the other side, provision of healthcare.

Lastly, supporting the main aforementioned areas, generation of MR, and the flow of patient information at KTRH is also influenced by other non- clinical services and activities such as ICT and HRIM. These activities provide instructions designating how a MR is to be organized, identified, accessed, and preserved for as long as it is required. As Upward (2000) points out that MRM professionals are required to establish a master plan to manage each record until its disposal. Meaning, activities from these sections not only impact of operational functions of the hospital but also the management of MR in both paper and electronic formats.

5.4.1.1.5 Procedures on the Creation and Capture of Medical Records

The data yielded from interviews provided convincing evidence that there was an absence of documented procedures for the creation and capture of electronic and paper MR at KTRH. Out of the total 52 respondents interviewed, the majority of the respondents reported that were unaware of such procedures for the creation and capture of MR. These findings corroborated those of Kemoni's (2007) in a study on records management practice and public service delivery in Kenya which decreed the absence of instructions in registries in Kenya. Kemoni concluded that this had implications for service delivery. Nevertheless, staff charged with the statutory responsibility of creating the MR demonstrated a thorough knowledge of the requirements for MR creation. Dimension one (1) of the RC model emphasizes the need for MRM professionals to establish a master plan to manage each record until its disposal. This implies, therefore, that procedures on the creation and capture of MR should be put in place.

5.4.1.1.6 Policy Stipulating the Requirements for Creation and Capture

Medical records professionals are required to establish a master plan to ensure each MR is well managed right from the time they are created to their ultimate disposition to ensure their continuous availability (Upward, 2000). More importantly, ISO 15489-1 (2016), supported by Shepherd and Yeo (2003), point out that a well-defined policy stipulating the requirements for the description or creating and capture of MR is utterly necessary. This, therefore, means that the creation and capture of MR is facilitated by the availability of a policy oncreation. The data yielded from interviews provide convincing evidence that MR at KTRH are being created without any form of documented policies or guidelines. The majority of the respondents reported that they were unaware of such procedures and guidelines for the creation and capture of MR in their line of work. Observations confirmed that the hospital has not documented, implemented, or circulated a well-defined guideline stipulating the requirements for the creation of MR. The absence of policies on the creation and capture of MR in the hospital meant that MR were created without a proper plan as to how they were to be effectively managed.

These findings suggested that the creation and capture of MR at KTRH had a problem because of the absence of laid down procedures which undermine the management of essential evidence that may inhibit effective and efficient healthcare delivery. However, documenting, implementing, and circulating policies would enhance MRM and streamline the creation and capture of MR and ensure patient information is captured as evidence (Shepherd and Yeo, 2003).These findings corroborated those of Kemoni's (2007) study on records management practice and public service delivery in Kenya which decreed the absence of instructions in registries in Kenya. Kemoni found out that 8 (56%) of records management units did not have a records creation

policy, with 107 (68%) admitting they did not have a list of activities that constituted the basis for record creation. Kemoni then bemoaned the negative effects in the creation of authentic, reliable, complete, unaltered medical records. In yet another study on assessment of medical records management in support of service delivery in Kenya, Koech et al. (2017) found that there were no established procedures for controlling records creation. The situation in KTRH cannot be far from this as well.

Consequently, Koech et al. (2017) concludes that the absence of a creation policy could have a lot of negative consequences for the hospital and service delivery in general. The findings were however different from those of Sichalwe (2010) in a study on the significance of records management to fostering accountability in the public service reform programme of Tanzania. Sichalwe's results revealed the existence of a registry procedures manual and desk instructions for registry staff and records users. Such a manual according to Sichalwe provided guidelines and procedures for managing records from their creation to eventual disposition. In addition, it outlined the management responsibilities in the registries. The Association of Commonwealth Archivists and Records Managers (ACARM, 2010) argues that MR are created when there is a need to remember the details of an event, decision, or action such that anyone needing recourse to the facts, whether or not they were party to the original matter, can rely on it. The National Archives of Australia (2010) opines that: a record is created when you need to show what happened; what was decided or recommended; what advice or instruction was given; when it happened; who was involved; and the order of events and/or decisions.

Therefore, the keyword in creation is evidence. Most healthcare providers require evidence and it would be in their interest to ensure that there is confidence in the

authenticity of MR created or captured for current and future use. According to Kennedy and Schauder (1998), the purpose of registration is to provide proof that a MR has been created or captured in a MRM system. Further, Shepherd and Yeo (2006) are of the view that in the assessment of the need for creating and capturing MR, it may be essential to consider: the requirements of particular sections for which MR provide evidence for operational use; the requirements for evidence that can support accountability; and the cost of creating, capturing and maintaining the MR that are required, and the risk to the hospital if it does not have such records. In conclusion, the creation and capture dimensions are crucial to the rest of the dimensions. If it is not well planned, the rest of the dimensions would be compromised. MRM system should, therefore, contain a complete documentation of all transactions that occur concerning a particular medical record. These include processes associated with an individual record. Such documentation should be documented as part of the metadata in, attached, and associated with a particular MR (ISO 15489-1, 2016). To help KTRH conform to its core objectives, procedures, and guidelines on the creation and capture of MR are utterly important (Beastall, 1998).

5.4.1.2Organization and Classification of the Medical Record Collection

Timely and accurate retrieval of MRs depends largely on how well organized and classified the records are (ISO 15489-1, 2016; Ngoepe, 2008). The organize dimension of the RC Model promotes that MR should be managed in a manner that would enhance patient information sharing for both current and future purposes, and that they should be available over time (Upward, 2001).In agreement, the National Archives of Australia (2010) state that once records have been created, it is necessary to have a logical system to store the records in order to retrieve them when the need arises. Thus, the interpretation of research findings, therefore, focused on the

organization and classification of MR collections, with a keen interest in the classification system and the inclusion of a register or index, file plan in the MRM program at KTRH.

5.4.1.2.1 Procedures for Medical Records Classification at KTRH

Classification refers to the logical arrangement or grouping of MR into common characteristics to facilitate description, storage, search, and retrieval (ISO 15489-1, 2016). Ngoepe (2008) states that classification involves assigning a code, number, or index term; assigning a disposal authority; and assigning a security classification code to determine who may access the records, and under what conditions. It is the basis for any organization's MRM system. While, WHO (2006) states that it involves categorization of diseases, injuries, conditions, and procedures according to established criteria, it also enable storage, retrieval, and analysis and comparison of data. The interviews and observations revealed that most of the staff in different sections at KTRH, especially MR users and creators, are not aware of the procedures for classifying MR.

However, contrary to this statement, some of the respondents indicated that the hospital classified its MR. This is evidenced by a statement by HRIM officer 2, who stated that after the completion of the discharge procedure, MR goes through classification and clinical coding and the collection of healthcare statistics before the MR is ready to be filed. This confirmed the presence of some form of a classification system that guides classification. Lack of awareness on the classification of MR could be attributed to the fact that the classification process was done by qualified HRIM officers at the hospital's MR main repository. Classification helps to determine the relationship between MR and establish hierarchies that facilitate better storage of and

faster access to information. This is important in enhancing the effectiveness of business operations. Kennedy and Schauder (1998) have also pointed out that classification allows for certain actions such as grouping, naming, user permission, security protection, and retrieval of records to be done with ease. Systems for MRM must enable the classification of MR at all levels of aggregation (ICA, 2008).

5.4.1.2.2 Availability of Medical Record Classification Scheme

Shepherd and Yeo (2003) and Kemoni (2007) posit that every MR should have a known classification scheme. A simple classification tool can facilitate and enhance the capacity of the organization to share patient information and knowledge. The entire 3 HRIM officers who indicated that there was a classification system, stated that at present KTRH uses the International Statistical Classification of Diseases and Related Health Problems, 10th revision (ICD-10). Thus from the response, the study confirmed the presence of a documented well-defined organization-wide classification scheme (ICD 10) used in the translation of diseases and procedural concepts from text to alphabetic/numeric codes (WHO, 2006).

5.4.1.2.3 Existence of File Plans at KTRH

The filling of MR is of uttermost importance. The general findings revealed that KTRH had a filing system that worked fairly well, as was also indicated by the majority of the respondents. Kennedy and Schauder (1998) have pointed out that the ability to effectively locate and retrieve MR required in the course of a business is a key component of any MRM program. While another existing opinion is this of IRMT (2004) that concur that there is a need for a comprehensive file plan and vocabulary control tools to ensure consistency and easier retrieval of MR. In terms of the physical arrangement, the current study also established that in the main repository MR were arranged numerically, a computerized index had been developed, and the shelves were labeled.

However, there were no catalogs that showed the current position of each file created and maintained. Such a catalogue helps facilitate the retrieval of these files. Outside the main repository, all the 38 respondents from the clinical department concurred that there was no specific filling order for active MR at KTRH work stations. Furthermore, some respondents indicated that they filed their MR alphabetically, others chronologically while others said no specific order. To avoid shortcomings arising from not having a file plan, KTRH needs a compressive homegrown MR filling system for all sections in the hospital (Koech et al. 2017; Reed 2005).

5.4.1.3 Access and Use of Medical Records

According to the access dimension of the RC model and the inquiry construct of the JHNEBP model, access to these MR should be facilitated so that the MR can be of use to the hospital for immediate business. Access involves monitoring of user permissions and functional job responsibilities including privacy and security. It also involves tracking of movements and use of MR as a requirement to identify outstanding action, enables MR retrieval, prevents loss of MR, monitors use, and maintain an auditable trail (ISO 15489-1, 2016; WHO, 2012). Further, an effective retrieval system should, therefore, reflect different levels of aggregation and use of Metadata at all levels (Shepherd and Yeo 2003).

5.4.1.3.1 Systems for Tracking Medical Records

Section 9 of the ISO 15489-1 (2016) states that tracking mechanisms can record the item identifier, the title, the person, the unit that has the item, and the time or date of the movement. When asked to state if there were any systems for tracking paper MR, the majority of the respondents drawn from different sections indicated they are not aware of any tracking system. Those who indicated are aware of the tracking system said they used registers, tracking cards, and physical checking of files on shelves as a

tool to track MR use. However, all the respondents unanimously indicated that the hospital does not have a computerized system to complement the manual registers.

The MR tracking situation in Kenya is not new. In a study in the public sector in Kenya, Kemoni (2007) found that, for paper records, 127 (80.9%) respondents indicated that they did not have procedures for tracking files. However, 120 (76%) respondents indicated that file tracking registers were tools that they used widely to track records, whilst the remaining 37(23.6%) indicated that they used file- tracking registers and checked files physically. Kemoni's study further revealed absence of strategies that document the movement of MR so that the organization knows where the records are at any given time, don't monitor the use of record, and they don't maintain an audit trail of MRM process. Therefore, the MR system should track the issue, transfer between persons, and the return of MR to their storage, as well as their disposal or transfer to any other unauthorized external organization, including an archive. Another existing opinion is of Ngoepe (2008) who further reveals that tracking is essential to monitor MR use, identify the operational origins of individual MR where systems may have been amalgamated or migrated, and maintain an auditable trail of records transactions to identify illegal activities and misbehavior by users.

5.4.1.3.2 Policies and Guidelines for Access of Medical Records

When the researcher checked with respondents about the availability of formal guidelines regulating access to MR, all 52 of the respondents reported that KTRH had not documented any formal guidelines or policy regulating as to who is permitted access to MR. Garaba (2010) observed that access to records should be facilitated by a relevant policy. However, observations revealed that access to MR at the workstations

was not controlled; creating an opportunity for some action offices to temper or steal MR contains valuable information (Kemoni, 2007). As an ISO 15489-1 (2016) requirement, hospitals should have formal guidelines as to who is permitted access to MR to guard their integrity and authenticity and in maintaining an audit trail as proof that MR were effectively protected from unauthorized use, alteration, or destruction. Therefore, access to some of the MR which are very sensitive requires authorization from those who have access rights because these MR are under a prescribed set of conditions. An effective MRM retrieval system would enable authorized users to access MR whenever they need them while maintaining their authenticity.

5.4.1.4 Storing and Preserving Medical Records

The ISO 15489-1 (2016) agrees with the organize dimension of the RC model that MR require storage conditions and handling processes that take into account their physical and chemical properties. Findings from the study indicated that MR storage at KTRH, especially for current records at different work stations and archives, was fragmentary. Since the hospital still operated a hybrid system, information meant for long-term preservation was captured in a paper-based format and piled together in a manner that compromised storage and preservation metrics. The findings further revealed a serious space problem in the main repository as MR were sometimes filed on top of shelves since there was no space for storing, impeding their ease of retrieval. With regard to the adequacy of the equipment, majority of the respondents reported that they used equipment that did not sufficiently cater for MR storage. In their respective sections, some respondents revealed that the hospital used medicine cupboards while some indicated that files were kept on the floor. The responses given concerning storage are contrary to the section 9.6 of the ISO standards ISO 15489-1 (2016) which requires MR to be stored in a media that will ensure their authenticity,

reliability and usability. This confirmed their relevance and hence the conclusion drawn that addressing these issues identified could mitigate long-term storage and preservation challenges.

Further, the problems of preservation are also not new in Kenya. Were(2013) revealed that inadequate storage of current and semi-current records has the capability to delay speed in decision making as records retrieval would take long. He further points out that inadequate record storage equipment could increase the deterioration of records and thus affect their access and use. Similarly, a recent study by Tsabedze, Mutula and Jacobs (2012) on records management in the government of Swaziland, revealed a rather poor state of records storage. In another study by Nengomasha (2009) on managing public sector records in Namibia, the findings showed that there was a shortage of storage space for records in the selected ministries resulting in congestion and inappropriate storage for records consequently affecting service delivery in the ministries.

However, there are a few exceptions as indicated in a study by Ngoepe (2008) on records management trends in the South Africa public sector where findings revealed that the South African legal framework required government offices to have registries that are spacious enough to accommodate the growth in documentation. Scholars (Iwhiwhu, 2011; Kemoni, 2007; Shepherd & Yeo, 2006)of MRM models and practice agree that storage is a vital aspect of every MRM program, and MR should be in a format that ensures their preservation for as long as they are required. ISO 15489 (2016) demand that MR, regardless of format or media, should be stored in a way that protects them from unauthorized access, change, loss, or destruction, including theft and disaster. Whereas, dimension 3 (organize) of the RC model hold the same view

that hospitals should organize MR in a manner that would enhance sharing and also ensure long-term preservation. For electronic MR, computerized MRM systems should be tested regularly to determine recovery in case of system malfunctions.

5.4.1.5 Appraising, Retaining and Disposal of Medical Records

MRM does emphasize that organizations need well-coordinated procedures for MRM related issues, such as appraisal, retention, and disposal (Ndenje-Sichalwe, Ngulube and Stilwell, 2011; Shepherd & Yeo 2003). While, as an ISO records management standard requirement, disposition processes should be carried out in conformance with rules in authorized and current disposition authorities (ISO 15489-1, 2016). The overall results of the current study on appraisal and disposition revealed that KTRH did not have a well-coordinated program for the appraisal and disposition of its MR. Further, confirms the absence of documented policies and procedures that guide appraisal, retention, and disposal of MR in hospitals.

5.4.1.5.1 Medical Records Appraisal

A medical records appraisal is the first step in establishing MR with enduring value (Kemoni 2007). Findings from the study revealed that KTRH didn't conduct an appraisal, and there were no documented appraisal guidelines and procedures. This was also confirmed by all the 3 HRIM. Follow up observation also showed that the hospital had not conduct an appraisal. These results clearly reflect the limits to which the RC model framework is used at KTRH. This also contravenes the ISO records management standard recommendations that appraisal and disposition of records should be done on a systematic and routine basis in the course of normal business activity (ISO 15489-1, 2016).The findings of the current study are similar to those of a study by Ngoepe (2008) in the Department of Provincial and Local Government in

South Africa which revealed that the appraisal and disposition program was not effective. In another study by Chachage and Ngulube (2006), it was observed that only three (3) companies in the Iringa region of Tanzania appraised records at the end of the records life-cycle whereas six (6) did it on an ad hoc basis and another six (6) did not appraise their records at all.

In Were (2013) view, the absence of a MR appraisal in the hospital registries would have a negative effect on the effective management of MR as a strategic resource and the implementation of reform objectives. For instance, it would be difficult to know the volume of MR created, their location, preservation status, and problems faced in providing access. It would be difficult to establish their status, that is, those MR in the current, semi-current, and non-current status, and identify those that were due for appraisal and disposition (Kemoni, 2007). There is a need, therefore, for hospitals to appraise their MR in order to determine their administrative, legal, and fiscal value, and long-term research value (Craig, 2004).

5.4.1.5.2Procedures for Retention and Disposal

Kemoni (2007) states that disposition may encompass physical destruction, retention for a further period within the business unit, transfer to an appropriate storage area, or transfer to archives. The current study findings further established the absence of elaborate procedure for MR disposal at KTRH. The majority of the respondents indicated that they have never seen a disposal schedule and they did not have a clear grasp of what such a program entailed. Furthermore, 51 of the respondents said there were no guidelines governing physical destruction. Despite this, there was a difference in opinion from 1 HRIM officers and 1 system administrator who reported that the procedures and guidelines on appraising, retaining, and disposal of MR were

still at the draft stage. Data from observations confirmed the absence of a retention schedule, a clear procedure for appraising, retaining, and disposal. These responses imply that in the absence of retention and disposal guidelines MR users used experience and long-standing procedures to determine how long MR were required and as a result, the MR storage area was clogged.

However, previous researches in public records management have underlined challenges concerning appraising, retaining, and disposal of MR in the public sector. A study by Kang'a et al. (2017) and Koech et al. (2017) confirms the absence of retention and disposal policies in hospitals in Kenya. The researcher felt that KTRH needed a MRM system that is capable of facilitating and implementing decisions on the retention or disposition of MR in all formats. This is in line with the ideals of the RC model which recommends that organizations should have appraisal and disposition program to ensure consistency and systematic approaches to the appraisal and disposition exercise. These processes are fundamental to efficient and effective MRM as they help the organization to control the growth of records; demonstrate compliance to disposition laws, and reduce financial losses that may arise from missing files (Iwhiwhu, 2011). In support, Nye (2010) MRM systems should be capable of facilitating and implementing decisions on the retention or disposition of MR in all formats. Generally, the activities related to MRM at KTRH were concentrated at dimension 1(creation) of the RC model and there was lack of a holistic view. Primarily, the focus was largely on the management of current active medical which excluded a long-term preservation (archival) perspective and exclusion of the archival expertise from MRM. The archival expertise is a necessity when it comes to issues of retention, appraisal, preservation and the legal framework that

governs information. The RC model promotes MRM in the continuum and in practice (Iwhiwhu, 2011; Kemoni, 2007; Shepherd & Yeo, 2003) this was overlooked.

5.4.2 Use of Medical Records in Supporting Evidence-based Practices

The second step as indicated in the JHNEBP model involves integrating the best available evidence for clinical decision making to produce high-quality healthcare. Healthcare is an information-intensive industry (Rodrigues, 2010), in which reliable and timely patient information is a critical resource for the planning and provision of healthcare at all levels. This is in agreement with Pickett & Wilkinson (2015) who noted that a MR is a permanent documentation of the history and progress of a patient's medical care, and it is used for continuity of a patient's care, outlining the course of care, support diagnosis and justify the treatment. In line with Pickett & Wilkinson's sentiments, the majority of respondents interviewed revealed that they depended entirely on MR to perform their duties, and they recognized that MR are vital to support the provision of healthcare based on evidence.

All the 52 respondents interviewed indicated that they used MR daily, weekly, and monthly in the execution of their work and reports. Respondents further indicated that MR served as corporate memory and used for research, legal purposes, and billing purposes. However, out of the 52 respondents interviewed, only 24 indicated that the current MRM program at KTRH served them to their satisfaction. Respondents stated that because of automation, the current program facilitated the free flow of patients' information, and aided in retrieval and access to MR, especially in electronic format. The other 28 respondents were of the view that the current MRM program undermined service delivery because of the inadequacy in providing access, use, and preserve MR by the MRM program. Thus, this means that service delivery could be

affected. Dikopoulou and Mihiotis (2010) observed that information created during the activities of an organization is a critical resource not only to the organization but also for the society the organization operates in, in essence, MR should be managed in an effective and efficient way by use of well-designed program.

Medical records, therefore, play an important role in hospitals with statutory responsibility for the provision of healthcare for a number of reasons (Mogli, 2009; IRMT, 2009): they provide evidence for decision making, documentation, reference, and for use in the conduct of current business. They are also a critical factor in success in areas like billing, compensation, and backup. Wamukoya (2000) pointed out that records represent a major source of information and are almost the only reliable and legally verifiable data source that can serve as evidence. Therefore, the importance of MRM at KTRH cannot be overlooked.

5.5 Policies and Procedural Frameworks for Management of Medical Records

The pluralize dimension (4) of the RC model is the broader social environment in which records operate; the legal and regulatory environment represents the capacity of a record/records to exist beyond the boundaries of a single creating entity (Reed, 2005). The government of Kenya recognizes the need for MRM for the public in line with the public archives and documentation service act, chapter 19 (2003). In this respect, there is a need to develop policy and procedural frameworks for MRM, both national and facility level, that provide the basis for which all functions and activities on MRM are anchored upon (ISO 15489-1:2016; Kenya National e-Health Policy: 2016-2030; Ondieki, 2017).The commitment to managing records can be gauged by the existence or non-existence of records management policies, plans and guidelines (Mnjama and Wamukoya, 2007).Thus answering the second research question.

5.5.1 Existing Policies Governing Management of Medical Records

The study sought to establish whether there was a policy framework governing the management of medical records at KTRH. The findings of the study showed that the hospital did not have a MRM policy. This was indicated by all 52 respondents interviewed who revealed the absence of an internal policy framework to anchor MRM activities in their respective sections. Some indicated that they had to formulate their own policy in the course of duty. The observed scenario contravenes the RC model (Upward, 2001) and the provisions of section 6.2 of ISO 15489-1 (2016)standards. Unlike in previous studies by IRMT (2011), Kemoni (2009), and Mnjama and Wamukoya (2004), where it was not clear on the government initiatives on the issue of policy and regulatory framework, the present study revealed that there were some efforts towards developing policy and regulatory framework to support MRM at KTRH. The majority (43) of the interview respondents acknowledged that they have been working under instructions from their HRIM officers. This was also confirmed through an interview by the HRIM officer 1 who indicated that there was a draft but not a functional policy. Another respondent reported to rely on some internal guidelines like circulars that were issued on an adhoc basis to provide guidance on managing of MR.

However, the risk of having such arrangements is that the hospital does not have the required standard guidelines for this critical evidential resource. The absence of a MRM policy framework leaves an opportunity for lack of management ownership, poor adherence, staff are not aware of their roles and responsibilities, and lack of accountability for MRM among users (Marutha, 2016).MRM provides a reliable, legally verifiable source of evidence for decisions and actions (Paton and Muinga,

2018) necessary for effective healthcare provision without which healthcare delivery is illusive.

In line with the ISO 15489-1(2016) standard, healthcare organizations need to identify the regulatory environment that impacts on their activities and the need to document such activities at all levels. As a standard for best practices in records management, the protocol specify that organization should document, maintain and promulgate policies to guarantee that its business need for evidence and accountability and information about activities is met. This Policy should be derived from business objectives and supported by business rules or procedures for MRM.

5.5.1.1 Policy Adoption at Top Management Level

Policies should be authorized and endorsed at an appropriate decision-making level and should be promulgated internally and externally as appropriate (ISO 15489-1, 2016). Mjama and Wamukoya (2007) concur with the ISO 15489-1 (2016) Standard that for the policy to be effective, it has to be endorsed and implemented by the head of the HRIM department as well as the hospital's top management team. When respondents were asked about policy adoption at top management level, all 52 including the 2 respondents who said the policy was in place, stated that the policy had not been adopted at the top management because it was still a draft proposal.

5.5.1.2 Documented Medical Records Objectives

The objective in issuing and implementing policies on MRM should be the creation, capture and management of authentic, reliable and useable records that possess integrity and support and enable business activity for as long as they are required and responsibility for policies and for ensuring compliance with policies should be assigned (ISO 15489-1, 2016). Furthermore, to enforce accountability for MRM,

Kalusopa (2011) affirms that that all employees should be given responsibility for MRM through the policy and specific leadership responsibility for MRM should be assigned to a person with appropriate authority. When respondents were asked about objectives, all 52 respondents indicated that objectives were not clearly spelt in the policy since there was no policy. However, HRIO In-charge and system administrator were of the opinion that it had a MRM objective defined in the service chatter.

5.5.2 Availability of Medical Records Management Documented Procedures

Mnjama and Wamukoya (2004) argue that MRM must be supported by procedures and guidelines if they are to retain their evidential values. While, Beastall (1998) concurs that procedures and guidelines for MRM helps a lot in conformity with the hospital's set policies. The finding showed that a high proportion of respondents from the clinical departments confirmed that the hospital had not yet developed procedures for MRM. Similarly, respondents from the admission department10 showed a similar pattern of saying that they were not aware of MRM in their line of work. However, 4 of the respondents from HRIM and ICT departments gave a different opinion indicating that there were aware of MRM procedures but they are not documented. Therefore, the absence of documented procedures significantly affected the provision of healthcare service (Mnjama &Wamukoya, 2004).

5.5.2.1 Availability of Medical Records Management Manual

Policies should be supported by procedures that provide more specific instructions on the creation, capture and MRM. Scholars and authorities (IRMT, 2004; Kennedy & Schauder 1998; ISO 15489-1, 2016) in records management encourage hospitals to document MRM procedures and have a manual. This document provides information on who, what, when, where and how the MRM systems operates for those who may

use the service (Kennedy & Schauder 1998).The availability of the manual was therefore a predominant feature of the study. When the researcher checked about the availability of the procedure manual, respondents gave mixed responses. Majority stated that although the manual is utterly necessary, KTRH had not documented a MRM manual. On the contrary, one respondent stated that the manual was in the process of being created, but has not yet been made available and implemented fully. A few did not respond to the question. As also revealed from observation and document review that KTRH has not developed, documented and distributed a MRM procedural manual to help in standardizing procedures, establishing responsibility, assisting in employee training and providing for updates for policies and procedures for physical records as well as e-records(ISO 15489-1, 2016) throughout the hospital's sections.

Thus, the absence of a MRM procedures manual would have implications such as MRM personnel not having the necessary guidelines for managing MR during the continuum of activities. In this regard, an observation by Kang'a et al. (2017) consent that there is lack of capacity within the public healthcare service in Kenya, especially in developing MRM guidelines. Lack of awareness and poor monitoring of the implementation of the procedures and tools is also found to be another contributing factor to the average compliance levels. This has been confirmed by other studies in the ESARBICA region Mampe (2013), Ramokate & Moatlhodi (2014) and Nengomasha (2009). Some of these tools include classification schemes, retention and disposal schedules and records policy. The intended benefits of these guidelines get compromised since they are not put to full use in hospitals. This was also confirmed by Mnjama & Wamukoya (2006) and Were (2015). KTRH should ensure that such policies are implemented and maintained at all levels, and document MR objectives.

For these reasons, this study supported by Mnjama and Wamukoya (2004), acknowledges that for MR at KTRH to retain their evidential values, the MRM program must be supported by policy and procedural frameworks. Meanwhile, IRMT (2007) posits that it is imperative that hospitals establish policies for MR and information based on the organizational structure, culture and resources to provide a compliance framework to ensure that MRM requirements are met and in line with the available national policy in place especially with the advent of the county governments. In support, the Ministry of Health (2014)and the WHO (2012) state that there is need for policies in county hospitals that are in line with national policies.

Furthermore, The Kenya Constitution (2010) (Government of Kenya) recognizes the need for record-keeping for the public in line with the public archives and documentation service act, chapter 19 (2003). As a result, the health information was identified as a key investment area in the Kenya Health Sector Strategic and Investment Plan (2014-2018). In response, the Kenya Health Information Policy 2014- 2030 and Kenya National e-Health Policy 2016-2030 were developed to provide for a national health information system that is responsive to the aspirations of National Health Sector Strategic Plan (Ministry of Health, 2010) and the second Medium Term Plan 2013-2017.In regard to medical records, in 2010, the Government of Kenya published the Standards and Guidelines for Electronic Medical Records (EMR) Systems in Kenya (Ministry of Health, 2014). However, a MR policy covering both electronic and paper records could have benefited the profession. Despite their importance, a number of studies have raised concerns about the current MRM policy situation especially at the county and at the facility levels (Were, 2013; WHO, 2012). These studies established that a number of problems hampering the provision of healthcare include among others high dependency on donor support, outdated policies

and an inadequate legal framework that are localized to the context of use and in line with national policies in place. The situation was also revealed at KTRH. Furthermore, County governments and hospitals have not been able to effectively develop current MR policies and standard operating procedures in line with the available national policies (Kenya Health Information System Strategic Plan, 2009-2014; Paton & Muinga, 2018).The absence of policies in many public sector organizations especially in developing countries has been revealed by other related studies (Ondieki, 2017;Maseh, 2015; Were, 2013).

A study on records management practices and public service delivery in Kenya undertaken by Kemoni (2007) showed absence of records management policies in government ministries. Similarly ,the findings of the study by Maseh (2015) showed that the Kenyan judiciary did not have a records management policy and was impacting negatively the ongoing transformation in the judiciary. However, the absence of comprehensive policies is not unique to Kenyan organizations. A recent study on records management as a means to fight corruption in Botswana by Keorapete and Keakopa (2012) revealed that there was an absence of proper records management policies, procedures and other guidelines. Yet another study by Kargbo (2009) on good governance and record keeping in Sierra Leone established that lack of a records management policy was an impediment to good governance.As a result, there is lack of commitment on management of evidential resources.

In conclusion, Mnjama and Wamukoya (2007) echoed the same sentiments that a hospital's level of commitment to MRM can be gauged by the existence or non-existence of such things as policies and procedures. Hence the need for document MRM policies so as to provide a framework for MRM.

5.6 Knowledge and Skills of Staff in Management of Medical Records

The JHNEBP model recognizes that individuals acquire proficiency and judgment through training, experience, and best practice in the provision of effective care (Dang and Dearholt, 2017). While, the RC Model promotes the integration of MR and archives management practices and hence leverages MR in a manner that fits modern healthcare organizations (McKemmish, 2001).The findings of this current study found that KTRH is adopting new interventions that are based on ICT as well as evidence. KTRH has established an institution-wide EDRMS as part of it's HIS management strategy and its providing a faster and more efficient solution that impacts the management of patient information. Certainly, people need technology but most importantly technology needs people. For these initiatives to be sustained, the need for staff with sound knowledge and skills in MRM was recognized as critical. Research question (3) sought to find out the knowledge, skills, and training needed in the management of medical records and the number of skilled personnel at KTRH.

5.6.1 Knowledge and Skills available on Management of Medical Records

The findings indicated that the majority of the respondents had a specialty in their area of work hence deemed qualified in their area of specialization. Concerning knowledge and skills in MRM, the majority of staff did not possess adequate knowledge and skills required. Furthermore, responses and observation revealed that out of the 3 staff working in the department, 2 indicated that they worked as HRIM Officers and 1 as HRIM Technicians. According to the Second National Health Strategic Plan of Kenya 2011/2012, a referral hospital should have at least 8 HRIM officers and at least 11 HRIM technicians. It means that the hospital has a deficit of 6 HRIM officers and 10 HRI technicians. The absence of capacity on MRM at KTRH is

confirmed by the finding that KTRH has a 16 (89%) staff deficit in the HRIM department. This compromises the quality of evidence in the hospital.

However, there seems to be a gap in terms of staff numbers and competence on MRM in Kenya, as other scholars like (Were, 2015; IRMT, 2011; Kemoni, 2007) have revealed in their studies. An earlier study by Kemoni (2007) on the MRM indicated a shortage of qualified staff in the public sector in Kenya. These findings of the current study seem to confirm those of a study done by IRMT (2011) on managing records as reliable evidence for ICT / e-government in Kenyan which showed that out of an establishment of 66 staff in the whole country's judicial system only 40 had been employed and posted. In a related study on the management of e-records at Moi University Kenya, Nasieuku, Kemoni and Otike (2011) established that only 10.6% of the respondents had knowledge and skills in records management. Wato (2006) commenting on records management in the ESARBICA region observed that absence of skills was considered a challenge. The findings are nonetheless significant because they demonstrated that the challenge of expertise in the public sector remains alive as had been raised in previous studies by Mahmood and Ayub (2010), Were (2013), and Noor et al., (2009). In effect, as also shown by Kemoni (2007), most of the MRM personnel in the public sector lacked the relevant knowledge and skills and lacked training opportunities particularly on managing e-records in the wake of the ongoing transitions. Healthcare organizations need to demonstrate good faith intentions by following best practices consistently and accurately. Studies by Were (2013) and Paton and Muinga (2018) in their discussions about MRM revealed that healthcare organizations should maintain enough MRM conscious staff with relevant skills and knowledge. While Kang'a et al. (2017) are of the view that hospitals must try to employ officers who are trained in MRM.

5.6.2 Medical Record Management Related Professional Training at KTRH

The respondents noted that training on the MRM was needed. A study by Nasieuku, Kemoni and Otike (2011)pointed out that effective management of records was dependent on staff receiving adequate training to effectively deal with specialized areas such as e-records, appraisal and disposition of records. The professional and technical capabilities on MRM for those interviewed were found to be inadequate. The interview findings revealed that just a fraction of the personnel have professional training. For example, all the admission clerks interviewed who create and generate MR 10 had not received any education in MRM. Further, findings from the study showed that the clerks had received certificates as their highest level of professional education but not in MRM. Whilst, for those who manage MR, 2 had diplomas and 1 had a certificate in MRM. None held a university degree or masters in MRM or related courses. 45 of the respondents indicated that they had not been trained in the basics of electronic MRM, despite the need for new skills and expertise in ICT. As a result of absence of professionalism in MRM, service delivery was affected (Mutiti, 2002). IRMT (2004) and Mampe (2013) concur that the absence of qualified staff may result in failure for the hospital to achieve its goals in as far as MR is concerned. Similar findings were established by Shepherd & Yeo (2003) and Kemoni (2007) who state that professional training at all levels is a prerequisite for an effective MRM service.

Other related studies also seemed to indicate similar results across the continent. In Tanzania for example, Sichalwe (2010) observed that though the government ministries had records management courses to offer, only 45.8% of the respondents had attended the courses while 54.2% had not attended any of such courses. Another study by Tsabedzeet.al.(2012) on records management in the government of

Swaziland revealed that staff appointed to the position of records officer were not fully trained in records management and could therefore not be entrusted with managing government records during their entire lifecycle. Contrary to these findings, Maseh (2015) on her study on records management in the judiciary in Kenya reported that the judiciary was in a relatively better position since three (3) records staff were pursuing records management training at Masters Level and others at Bachelors and Diplomas levels. While, Ngoepe and Van der Walt (2009) indicated that in the South African public sector, records management training was offered. Owing to the fact that South Africa has records management policies that give effect to principles of records management, public sector organizations in the country offer training during the induction of new employees, refresher courses and staff had scheduled training whenever the need arose.

Thus, the success of any MRM program, as argued by Kalusopa (2011) and Waithera et al., (2017) depends on the professional capacity and status of the staff responsible for the use, creation, and maintenance of MR. Professional capacity denoted familiarity with theory and practice whereas technical capacity meant technical hands-on skills on tools and techniques used to manage MR in all formats. The foregoing discussion demonstrates that the availability of human resources is one of the key success factors in the implementation of a MRM program. Qualified MRM staff with relevant knowledge and skills are required for effective implementation of records management policies in any given organization (IRMT, 2004).Other authorities in MRM propound that a sound education at the point of entry to the profession, competency-based training for continuing professional development, and involvement in research-based inquiry and knowledge creation all have essential roles in developing and sustaining well rounded MR professionals, to the greater benefit of the

profession as a whole (Anderson, 2010; Kalusopa, 2011; Kemoni, 2007). According to ISO 15489-1 (2016) section 6.5, organizations should establish ongoing programs for MRM training, and competence should be regularly evaluated. Therefore, as suggested by Wamukoya and Mutula (2005), KTRH needs continuing professional development for MR professionals; development of a database of experts and resources; and establishment of a secretariat to coordinate training and hiring of a champion to be responsible for implementing the regional capacity building plans and projects among others.

5.7The Use of ICT in MRM in Supporting Evidence-based Practices

Records Continuum (RC) model implicates medical records should be continuously managed within time/space construction (McKemmish, 2001). Therefore, RC model provides a useful framework for the integration of ICT in the management of medical records in this study. Research question (4) sought to explore the level of ICTs preparedness in the management of medical records in supporting evidence-based practices at KTRH.

5.7.1 ICT Infrastructure in Management of Medical records at KTRH

Globally, the provision of high-quality healthcare services based on evidence is dominating the agenda of modern healthcare organizations. The application of ICTs greatly facilitates medical records, information management activities and improves the quality of patient information (OECD, 2013; Unadkat et al., 2020; Waithera et al., 2017). Consequently, hospitals across Kenya are adopting ICT and evidence-based applications such as DHIS, EDRMS, and mobile health systems as a tool for providing effective healthcare services and ensuring decisions that affect the care of

patients are taken with due weight accorded to all valid and reliable evidence (Dang and Dearholt, 2017; Carter, 2015). KTRH is no exception.

Findings from the study revealed that as part of it's HIS management strategy, KTRH has instituted an institution-wide EDRMS as indicated by the presence and use of a number of hardware and software such as EDRMS (KTRH). In the course of their work, the majority of the respondents indicated that they used DHIS, mobile health (M-health) systems, Kenya EMR system, and EDRMS by Funsoft networked through different departments. 34 of the respondents indicated that they used ICT for out-patient/In-patient admissions, 42 of the respondents indicated that ICT is used for sharing information within the hospital departments, while 38 of the respondents revealed that they use ICT for coordinating and facilitating efficient service delivery within the hospital. Only 45 of the respondents used ICT for clerking of patients. All the 52 respondents interviewed, unanimously recognized that KTRH is making efforts to adopt ICT to manage health information with a view of ensuring the efficient provision of healthcare through an electronic solution as envisioned in its strategic plan.

5.7.2 Integration of Management of Medical Records Functionalities at KTRH

As the hospital continues to invest in ICT, the recognition that the system produces important evidential information was often lacking. Indeed, the MRM functionalities in EDRMS were partially automated. Some of the crucial MR procedures that have been computerized, as identified by the 52 respondents included disease and procedure index, patient identification, statistic collection and discharge summary system. A consensus view by IRMT (2004) and Kalusopa (2011) seems to concur that these ICTs are intended to provide the capability to capture, classify, store, retrieve

and track MR, regardless of the format. These findings implied that there was significant assimilation of ICT in KTRH business operations. The automation of these procedures has greatly improved service delivery. A similar study conducted by Nzoka and Ananda (2014) in health information systems in Kenya was in agreement with the findings of this study that there is need for proper management of patient information as evidential resources. Some of these ICTs seem to be common in many sectors as their use has been confirmed through other studies in Kenya by Nzoka & Ananda (2014), Kang'a et al. (2017), and Mackenzie (2014). However, findings from the study further revealed that this investment largely focuses on clinical and administrative management, notably clerking of patients and improving revenue collection. Full integration of electronic records elements is lacking since procedures such as MR tracking, and MR completion were not computerized.

According to WHO (2006), the use of a fully computerized system may improve the effectiveness but only where the basic procedures are already in place and well organized. From the above responses, it is evident that KTRH continues to adopt ICT applications without due considerations to basic procedures that govern MRM. Generally, findings from this study and other researches imply that there has been a significant change in MRM through the implementation of initiatives such as HMIS and the use of patient information as evidence (Unadkat et al., 2020; Gladwin et al., 2003; Dang and Dearholt, 2017). However, this does not lessen the importance of non-electronic technologies such as paper-based MR (WHO, 2006). WHO further states that the use of a fully computerized system may improve the effectiveness but only where the basic manual procedures are already in place and well organized.

The literature (Thurston, 1996; Gladwin et al., 2003; Lipchak, 2002) reviewed showed that implementation of ICT initiatives cannot be successful without effective MRM being addressed since much of the patients' information generated and maintained by hospitals is in the form of MR.In light of this, An, Sun & Zhang (2011) highlights that good MRM strengthens healthcare by supporting evidence-based decision making. A study by IRMT (2004) on evidence-based governance in the electronic age, concede that there is a need for effective strategies, tools, and techniques to help in transacting business in trustworthy electronic environments based on records that are authentic, reliable, understandable and usable evidence. Their findings are in agreement with that of this study. Therefore, this study proposes that ICT and evidence-based practices should therefore be aligned with MRM if the initiative is to succeed.

5.8 The Strategies to Improve on MRM to Supporting Evidence-Based Practices

The JHNEBP model second step suggest the integration of the best evidence with a clinician's expertise along with patients' preferences and values (Melnyk et al. ,2012; Dang and Dearholt, 2017). Research question (5) sought to find out what are the possible strategies to improve MRM at KTRH. MRM scholars and models indicate that MRM is a business process that is required to support healthcare activities in hospitals (Pickett & Wilkinson, 2015; World Bank, 2006). It, therefore, comes as no surprise that KTRH should adopt effective strategies that will ensure the best MR practices.

5.8.1 Benefits of MRM in Supporting Evidence-Based Practices

The majority of respondents interviewed revealed that proper MRM practices would improve the creation and capture of evidence and facilitate the free flow of

information. Further response from the 3 HRIOs interviewed indicated that proper MRM aided in retrieval and access to MR, especially in electronic format. Kanzi (2010) opines that sound MRM is the foundation for managing resources and the delivery of healthcare. The majority of the admission clerks interviewed pointed out that effective MRM is a critical factor in success in areas like billing, compensation, and backup (in the case of a legal challenge). According to the system administrator, KTRH needs to maintain systematic and planned MRM approaches that cover the MR from creation to final disposition or retention. An, Sun and Zhang (2011) acknowledges that good MRM strengthens healthcare services by supporting evidence-based decision making.

5.8.2 Challenges Encountered in the Management of Medical Records

The majority of those that were interviewed depicted an average or fair MRM in the hospital. Consequently, KTRH was not optimally benefiting from MRM. From the results presented in chapter four, numerous findings emerge. In fact, no respondent failed to identify at least one challenge with regard to MRM. The majority of the respondents interviewed revealed that one of the major problem affecting MRM at the KTRH was the absence of policy and procedural frameworks. One of the HRIM officers indicated that this hampers the functions and activities of MRM hence affecting the quality and quantity of evidential information. Another challenge identified by the respondents was the absence of qualified MRM staff with relevant knowledge and skills. Findings from an interview with HRIM officer 2 indicated that the hospital has a 16 (89%) staff deficit in the HRIM department, and a fraction of the personnel have professional training.

Further the available staffs strain in providing this essential service within the hospital. Response from admission clerks showed a similar pattern. Meaning there seems to be a gap in terms of staff numbers and competence in MRM at KTRH. Respondents also

identified ICT challenges likely to undermine processes at KTRH evidenced by a response by HRIM officer 2 who stated that KTRH Continues to face challenges despite the automation of healthcare services. Using a multi-response list, the majority of the respondents mentioned the absence of an e-records management policy and procedural frameworks, inadequate financial resources, lack of training on the use of ICT, and inadequate security measures. A similar situation has been observed by several records management scholars (Waithera et al., 2017; Ondieki, 2017; Wamukoya and Mutula, 2005) who have made proclamations that in an era where quality healthcare is high on the global agenda, effective MRM tends to be overlooked. In Kenya, evidence abounds of cases of neglect of MRM, and hospitals pay little attention to standardized MRM.

In an earlier study on records management practices and public service delivery in Kenya, Kemoni (2007) reported that most hospitals in the country continue to grapple with challenges in the processes of MRM in the form of evidence despite the adoption of ICT. Kemoni investigated 18 government ministries and attributed the poor state of records to failure by the management to establish acceptable records management goals and practices. Similarly, the findings of the current study on e-records management in the Kenyan judiciary revealed challenges such as lower literacy levels among court users; digital divide; security of classified information; inadequate equipment; absence of trained personnel; insufficient funding; and poor planning and prioritization (Maseh, 2015; Wamukoya & Mutula, 2005).

5.8.3 Recommendations to Mitigate the Challenges

The research not only focused on identifying challenges in MRM but also to propose strategies to improve the MRM. All the 52 respondents interviewed concurred that effective MRM is crucial to facilitate healthcare delivery and action was necessary. The majority of the respondents agreed that there must be must control in the

management of MR at KTRH for current, complete, and accurate patients' information so as to improve MRM situations and support patient treatment and care at the hospital. The HRIM officers interviewed further indicated that KTRH should develop operational policies and procedural frameworks for medical records management; recruitment of human resources with knowledge and skills in MRM as well training the existing staff is required; and having appropriate ICT infrastructure with MRM functionalities with capabilities for the creation, capture, and MRM. The literature reviewed also supports the respondents' views on effective management of MR in KTRH (Smartsheet, 2018; Pickett & Wilkinson, 2015; Ebrahim and Irani, 2005).

5.9 Chapter Summary

Chapter Five presented an interpretation and discussion of the research findings presented in Chapter 4. The interpretation and discussions followed the thematic areas in line with the study's objectives and underpinned by the RC model (Upward, 2001) and the JHNEBP model (Dang and Dearholt, 2017). The chapter, therefore, gives meaning and provides implications for the finding presented in chapter four. The research findings indicated the absence of internal policy and procedural frameworks to anchor MRM activities from creation to disposition. This was indicated by the absence of instructions; inadequate storage space and equipment; absence of an appraisal and disposition program; inadequate preservation of MR; and absence of a disaster preparedness plan. The observed scenario contravenes the ideals of the RC model (Upward, 2001) and to the provisions of section 6.2 of ISO 15489-1 (2016) records management standards.

Moreover, the finding established that there was a scarcity of staff with MRM knowledge and skills at KTRH. The absence of these staff suggests that the hospital has a long way to go in order to successfully evidence-based strategies. Further, the use of ICT in MRM at KTRH requires improvement. Findings from the study revealed that KTRH has instituted an institution-wide EDRMS. However, records management functionalities in EDRMS were partially automated. Overall, the findings established that the general status of MRM was inadequately positioned to support evidence-based practices. The apparent absence of sound MRM at KTRH provided a rationale for the study and the need for a functional MRM program that maintains records that are complete and authentic and can be relied on as evidence. The findings discussed in this chapter corroborates with the finding of Noor e.t al (2009), Kemoni (2007), Maseh (2015), Were (2013), Ondieki (2017), and Waithera et al. (2017).

It can be concluded that, as the hospital continues to adopt this ICT and evidence-based initiative, it is important that cautious treatment should be afforded to both manual and electronic MR in terms of capture and overall management so as to provide verifiable evidence needed to support quality patient care, fulfill hospital's policy and objectives, and protect fundamental value on which healthcare is built (Kanzi, 2010; World Health Organization, 2002). In that regard, there was a need for a thorough assessment of MRM at KTRH in order to ascertain whether a strong underlying MRM infrastructure and if functionalities are in place and effectively implemented (Lipchak, 2002; Nzoka & Ananda, 2014).

The next chapter (Chapter Six) provides summary of the findings, conclusion and recommendations.

CHAPTER SIX:

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

The purpose of this chapter is to draw together the threads of the research covered in the body of the thesis and to make proposed recommendations on MR Min support of evidence-based medical practices at KTRH.

The purpose of this study was to assess MRM in supporting evidence-based medical practices at KTRH with a view of proposing strategies to improve MRM in the hospital. The study was motivated by the fact that there has been an interest in the adoption of new interventions that are based on evidence, best practices, and ICT applications such as evidence-based healthcare and EDRMS at KTRH in line with its strategic plan. However, little is known about a framework that defines the creation, capture, and management of MR as a strategic evidence resource. The research questions of the study are used as the organizing framework for this chapter under the following subject headings: summary of the findings, conclusion, recommendations, and suggested studies for future research.

6.2 Summary of Findings

The summary of findings covers the status of MR in supporting evidence-based practices; policies and procedural frameworks governing MRM; Knowledge and skills of staff in MRM; use of ICT in MRM in supporting evidence-based practices; challenges and proposed strategies to improve on MRM at KTRH. The study was primarily underpinned by triangulation of the RC model (Upward, 2001) and The JHNEBP model (Dang and Dearholt, 2017) and complemented by the ISO 15489-1 (2016) records management standards.

6.2.1 Background Information of the Respondents

The findings revealed that the majority of respondents (56%)were in the age group 25 to 45 years. This implies that the majority of respondents were in the active working class of the populationhence the need for the hospital to develop training programs to cover for staff turnover that may arise as a result of retirements and other factors. The study revealed that19 of the respondents were male while 33 were female,mirroring the demographics of KTRH staff.This is an indication that both genders were involved in this study and thus the finding of the study did not suffer from gender bias. The findings further revealed that the majority of the respondents (38) were working in the clinical department,(10) were working in admissions, (3)in the HRIM department and only (1) worked in the ICT department. This is an indication that the study drew responses from all the targeted population that create and generate MR, use MR in practice, and manage MR.the study revealed that respondents had educational qualifications ranging from Certificate (11), Diploma holders (22), Bachelor's degree (15) and Master's degree were (4) (see section 4.3). Academic level affects their perceptions on ICTs, the way they seek access and use evidence in the provision of healthcare. The study also revealed that the majority of the respondents (20) reported that they had been in the hospital for a period of 6 to 10 years, and had interacted with the MR system for a long period to give credible information relating to this study.

6.2.2 Status of Medical Records in Supporting Evidence-Based Practices

This section summarizes findings on the first research question, which sought to find out how are MR managed, their use and role in supporting evidence-based practices at KTRH? The research question was addressed by the empirical part of the study with

data collected from doctors, nurses, clinical officers, admission clerks, HRIM officers, and system administrator. The findings presented under sections 6.2.2.1.1 to 6.2.2.1.5 respectively cover Creation and Capture of MR; MR Organization and Classification; Access and Use; Storing and Preserving MR; Appraising, Retaining and Disposal of MR.

6.2.2.1 The Creation and Capture of Medical Records

The findings of the study showed that the bulk of activities at KTRH are direct clinical services, and the hospital depended entirely upon MR to deliver healthcare services. From an MRM functional viewpoint, these activities led to the generation and/or receipt of MR both in paper and in electronic formats. However, Findings from the research provide convincing evidence that documented procedures were absent at the point of creation and capture of MR (Chapter 4 section 4.4.1.1). The findings further indicate that the allocation of explicit metadata documenting MR context was still problematic. The results generally suggested ineffective MRM, especially at the creation stage. This contravened the ideals of the RC model, especially dimension (1) create and dimension (2) capture, which emphasizes the need to establish a master plan to manage each MR from creation until its disposal.

6.2.2.2Organization and Classification of the Medical Record Collection

The interviews and observations revealed that most of the staff in different sections at KTRH are not aware of the procedures for classifying MR. The organize dimension of the RC model promotes that MR should be managed in a manner that would enhance patient information sharing for both current and future purposes and that they are available over time (National Archives of Australia, 2010; Upward, 2001). All the 3 HRIM officers indicated that KTRH uses the International Statistical Classification of

Diseases and Related Health Problems, 10th revision (ICD-10). The general findings revealed that KTRH had a filing system that worked fairly well, as was also indicated by the majority of the respondents. However, there were no catalogs that showed the current position of each file created and maintained.

6.2.2.3Access and Use of Medical Records

The findings of the study revealed that access and use of MR at KTRH was fairly well managed (see Chapter 4 section 4.4.1.3). Finding revealed the presence of the tracking system such as registers, tracking cards, and physical checking of files on shelves as a tool to track MR use. However, findings revealed that the hospital did not have a computerized system to complement the manual registers. There was an absence of formal guidelines or policy regulating as to who is permitted access to MR.

6.2.2.4Storing and Preserving Medical Records

Findings from the study indicated that MR storage at KTRH, especially current records, at different workstations, and archives, was fragmentary (see results presented in section 4.4.1.4). The findings further revealed that the hospital was grappling with the issue of space in the main repository as MR were sometimes filed on top of shelves, impeding ease of retrieval. Concerning the adequacy of the equipment, findings revealed that the equipment at KTRH did not sufficiently cater for MR storage. This problem affected the easy retrieval of MR as misfiling was common.

6.2.2.5 Appraising, Retaining and Disposal of Medical Records

Medical records appraisal, retention, and disposition at KTRH was not well coordinated, as required by the Records Disposal Act Cap 14 of the Laws of Kenya. Findings revealed

that KTRH didn't conduct an appraisal, and there were no documented guidelines and procedures on the appraising MR (Chapter 4 section 4.4.1.5). Findings further established that there was no elaborate procedure for MR retention and disposal at KTRH. The implication of this is that almost all MR created ended up being kept permanently contributing to the shortage of storage space for MR.

6.2.3 Policies and Procedural Frameworks for Medical Records Management

The findings revealed the absence of a comprehensive MRM policy that governs MRM at KTRH (Chapter 4 section 4.5.1). It is also evident, from the findings, that KTRH had not established MRM objectives. This means the hospital lacked established organization-wide principles that guide and assign responsibilities for MR creation, capture, and MRM. The absence of policies and procedural frameworks led to the lack of commitment, lack of management ownership, poor adherence, staff are not aware of their roles and responsibilities, and lack of accountability for MRM among users (IRMT, 2004). This contravenes the principles of the RC model (Upward, 2001) and the provisions of Section 6.2 of ISO 15489-1 (2016) standards.

The findings further revealed the absence of procedures for titling, indexing, classifying, and describing MR, and the hospital. A high proportion of respondents revealed that they are not aware of such procedures in their line of work. It's only a few (4) respondents drawn from HRIM and ICT departments indicated that they were aware of MRM procedures. However, they also confirmed that the procedures are not documented. The absence of documented procedures significantly affected the provision of healthcare services (Mnjama and Wamukoya, 2004).Regarding the availability of the MRM procedural manual, the findings showed that KTRH has not compiled and have complied established a MR procedural manual. This document is necessary since it provides vital information on who, what, when, where, and how the

MRM systems operate for those who may use the service (Kennedy and Schauder 1998). Thus, the absence of the MRM procedures manual indicates that MRM staff do not have guidelines for managing MR during the continuum of activities.

6.2.4 Knowledge and Skills of Staff in Management of Medical Records

The findings revealed that there is a gap in terms of training, staff numbers, and competence in medical records management hence, compromising the quality and quantity of MR at the hospital. The findings revealed that KTRH did not have adequate staff knowledgeable in MRM. Of those trained in MRM, only 3 indicated they work in the HRIM department and had to serve the whole hospital. The finding further revealed that the hospital had an 89% staff deficit meaning MRM staff is not adequate to manage both electronic and manual records. Consequently, the absence of these staff suggests that the hospital has a long way to go in order to successfully implement ICT and evidence-based strategies for the effective and efficient provision of healthcare. The World Bank (2006) also noted that proper medical records management requires trained staff adequate and continuous funding, appropriate environmental conditions, and physical security among others.

Concerning MRM training and awareness programs, the findings revealed that clinicians, admission clerks, and other staff handling and using MR, had not undertaken any awareness course, or training to enhance their knowledge and skill in MRM. With the implementation of EDRMS in the hospital, such training is deemed important, especially when handling electronic MR. It was also established that most staff and other healthcare professionals had acquired some MRM skills ‘on the job’ and in-house training, but there had never attended workshops, conferences, or seminars. Most skills gaps identified were in the MRM processes such as creation,

capture, and management of electronic records. Wamukoya (2015) noted that proper MRM requires trained staff for organizations to demonstrate accountability, transparency, and a commitment to root out corruption and malpractice.

6.2.5 The Use of ICT in MRM in Supporting Evidence-Based Practices

The findings revealed that KTRH is embracing initiatives such as ICT and evidence-based practices are aimed at enhancing healthcare provision. Furthermore, findings revealed that some ICT technologies and evidence-based initiatives such as evidence-based healthcare, EDRMS (funsoft), DHIS, Mobile health (M-health), and Kenya EMR system are being implemented in medical records management and general provision of healthcare at KTRH. In the course of their work, the majority of the respondents indicated that they used these technologies in the provision of healthcare and MRM. With regards to MRM functionalities, the findings showed that MRM functionalities in EDRMS were partially automated. Findings revealed that some of the procedures that have been computerized included disease and procedure index, patient identification, statistic, and discharge summary system. The use of a fully computerized system may improve the effectiveness but only where the basic manual procedures are already in place and well organized (WHO, 2006).Therefore, the adoption and use of ICT in MRM at the hospital require improvement.

6.2.6 The Strategies to improve on MRM to Support Evidence-based Practices

Overall, the findings of the study showed that proper MRM practices would improve the creation and capture of evidence, and facilitate the free flow of information. The findings revealed that proper MRM aided staff in retrieval and access to MR, especially in electronic format. Effective MRM was considered a critical factor in success in areas like billing, compensation, and backup in the case of a legal

challenge. With regards to challenges, findings revealed several challenges in the management of MR that impact the provision of healthcare based on reliable evidence and also the management of MR as a strategic evidence resource. The major problem affecting MRM at the KTRH as indicated by respondents include the absence of standard, policy, and procedural framework, staff deficit in the HRIM department, lack of space for the increasing number of MR, and lack of training on the ICT use, as a result, the quality of evidence is compromised. Several suggestions were given by respondents for enhancing MRM included: KTRH should develop operational medical records management policies and procedural frameworks; provide medical records management knowledge and skill to staff; improve on its ICT infrastructure and integration of MRM functionalities and adoption of the recommendations and best-practice strategies to improve MRM.

6.3 Conclusion

This section provided conclusions based on the major findings of the study. The conclusions were drawn in the order in which the research questions were stated in chapter one.

The overall findings revealed that there were existing weakness that hindered effective management of MR in a continuum from creation to disposition at KTRH. The study pointed out that MRM at the hospital was weak because of the absence of guidelines on the creation and capture; absence of documented procedures on access and security necessary for MR tracking the use; lack space for the increasing number of MR; absence of retention/disposal schedules; and absence of documented guidelines on electronic MR. The conclusion drawn from this finding is that though KTRH is currently undergoing reorganization and restructuring to enable it to provide

healthcare based on evidence much more is needed with regard to continuum management of MR as strategic evidential resources.

Findings further revealed the absence of MRM policies and procedural frameworks. Mnjama and Wamukoya (2007) noted that the management of records in all formats must be supported by clear policies, procedures and guidelines if they are to retain their evidentiary value for accountable and transparent governance. The findings seem to point to the need for KTRH to document and implement MRM policies and procedural frameworks at levels as a statutory responsibility in line with the public archives and documentation service act, chapter 19 (2003), ISO 15489-1 (2016), and the constitution of Kenya (2010). Without requisite MRM policy and procedural frameworks, the hospital would lack structures that give directions on the activities, functions and services of MRM.

The overall findings established that there was a gap in terms of staff numbers and competence on medical records management. It also emerged that there was a scarcity of medical records management knowledge and skill at the HRIM department. The absence of enough adequately trained MRM staff suggests that the hospital has a long way to go in order to successfully implement ICT and evidence-based strategies for the effective and efficient provision of healthcare. The implication for this is that medical records were not well managed in a continuum following the ideals of the RC Model. The IRMT E-Records Readiness Tool noted that qualified records management staff are required for effective implementation of records management policies in any given organization (IRMT, 2004).

The study findings revealed that KTRH was implementing EDRMS, as part of its health information system management strategy. The study showed that KTRH has

put in place ICT infrastructure including hardware and software, and computerized some of its healthcare services. The findings also seem to suggest that E-records management in the hospital was in its infancy stage of development, and MRM processes (functionalities) were partially automated. Although the hospital is embracing ICT and evidence-based initiatives that have improved the creation, capture, and management of evidence at KTRH, the current MRM program needed improvement.

Overall, the findings identified several challenges in the way MR were managed which included; absence of standard, policy, and procedural framework; staff deficit in the HRIM department; inadequate knowledge, skills and training on MRM; and lack of sufficient training on the ICT use. In this kind of environment, the accuracy, authenticity and integrity of evidence cannot be guaranteed, and therefore requires urgent attention. The study concluded that the general status of MRM at KTRH was weak and inadequately positioned to manage MR as a strategic evidence resource in a continuum from creation to disposition as envisaged by the RC model and the JHNEBP model.

In view of this study provided recommendations to ensure continuum management of MR as strategic evidential resources.

6.4 Recommendations

The study has discussed various issues on MRM at KTRH and established that the hospital is faced with numerous challenges related to MRM. Based on the findings of the study, the interpretation and conclusion adduced above, the study recommends the following strategies for consideration as proffered in section 6.4.1 to 6.4.5 below.

6.4.1 Status of Medical Records in Supporting Evidence-Based Practices

The study established that the effective MRM from creation to disposition at KTRH faced many challenges. These challenges were most likely going to impede MRM.

Recommendation 1: Creation and Capture of MR- KTRH top management should consider having procedures for creation and capture to assist staff to decide on what, when, and how information is to be captured. The HRIM officers and system administrator should carry out periodic inspections to assess progress and evaluate the efficacy of the MRM program. The system administrator should also consider integrating a unique patient characteristic and allow for cross-reference attributes into the system. The MRM system should have a completion procedure facilitated by HRIM officers to ensure correct and complete MR capture. The MRM system in place should allow for the allocation of explicit metadata, and the management should assign someone with appropriate skills to maintain metadata schema.

Recommendation 2: Organizing and Classifying MR- KTRH should establish procedures that outline how MR are to be classified, indexed, and organized. Each classification scheme should be linked to the retention and disposal authorities. The HRIM officers should plan the filling areas and organize for space for MR filling.

Recommendation 3: Access to MR and Security- HRIM officers, should ensure MR restrictions, security, and privacy strategies are identified and documented. Top management should develop policies governing system security and user access permissions. The system administrator should regularly review user access restrictions and other security controls to ensure they remain appropriate. With the help of the HRIM officers, the hospital should design and automate an effective file tracking system into all systems so that they can maintain a history of access to and use of MR.

Recommendation 4: Storage and Preservation of MR: HRIM officers should carry out a MR decongestion process to help in the creation of space for MR. Top management should establish comprehensive disaster preparedness and recovery strategies for all MR systems. The system administrator should regularly test the system to determine whether they can recover from system malfunctions. The hospital's management should develop a program for preserving MR in all formats that ensures their preservation and accessibility. The hospital's top management should also consider improving the work environment for the HRIM department including space, lighting, and safety. Hospital administration should enforce medical records regulations.

Recommendation 5: Appraisal, Retention, and Disposal of MR- The hospital should conduct an appraisal to select MR with enduring value for permanent storage in an archive, and managed according to the archival principles. The HRIM officers should ensure MR are destroyed or disposed of in accordance with the legislation and should be planned and undertaken regularly. The responsibility should be assigned to a qualified HRIM officer to guide MR disposal. Top management should develop policies to support the protection and security of MR throughout their existence.

6.4.2 Policies and Procedural Frameworks for MRM

The study revealed that KTRH did not have policies and procedural frameworks for medical records management.

Recommendation 6: Policy – The study therefore strongly recommends that KTRH should develop and document MRM objectives that should be translated into a high-level policy that stipulates the requirements for capturing, registering, classifying, retaining, storing, tracking, accessing records, and disposing of them. The policy

should develop strong foundations in which MRM in the hospital will be anchored as stipulated in the ISO 15489-1 (2016) standards and recommended by this study. The top management should endorse the policy, and the HRIM officers should create awareness and conduct training on the contents of the policy.

Recommendation 7: Procedures framework for MRM- It is recommended that the hospital should develop comprehensive MRM procedures that are based on RC model principles, and document them in a manual. The procedures should cover key recordkeeping functions such as the creation, capture, classification, access, storage, security, maintenance, transfer, disposal, and preservation of records, and aligned with the hospital's MRM policy.

6.4.3 Knowledge and Skills of Staff in MRM

The study findings revealed that the KTRH did not have adequate trained MRM staff. The HRIM department had a staff deficit (89%), and they did not have the opportunity to attend continuous training.

Recommendation 8: Human resource capability for MRM- the study recommends that KTRH should recruit personnel possessing relevant MRM knowledge and skills who will be responsible for the creation, capture, and management of MR across their continuum. Ambira (2016) and Kalusopa (2011) emphasize the need for maintaining enough MRM conscious staff with relevant skills and knowledge. Additionally, Shepherd & Yeo (2003) are of the view that hospitals must try to employ officers who are trained in MRM to demonstrate good faith intentions by following best practices consistently and accurately. This would ensure that MR receives the necessary attention right from the time they are created through to their disposal, thus meeting the requirements of the RC model.

Recommendation 9: Training on MRM – The study recommends continuous training of MRM staff through colleges, universities, seminars, workshops, and conferences. Alternatively, the admission clerks currently handling MR could be trained at diploma or degree levels in MRM. The study also recommends the establishment of MRM awareness programs headed by the HRIM officers, to enable MR users to understand the functions, activities, and benefits of MRM. Nasieuku, Kemoni and Otike (2011) pointed out that effective management of records was dependent on staff receiving adequate training to effectively deal with specialized areas such as e-records, Similarly, Sichalwe (2010) recommended the provision of a higher level of training in records management among the registry staff and the need for providing more training through short courses, workshops, and seminars in records management for them to update their knowledge and skills in records management.

6.4.4 The Use of ICT in MRM in Supporting Evidence-Based Practices

The study showed that KTRH has put in place ICT infrastructure including hardware and software, and computerized some of its healthcare services. E-records management in the hospital was in its infancy stage of development, and the hospital had not fully computerized MRM processes in the EDRMS instituted in the hospital. RC model propagates for the automation of the medical records functionalities such as creation and capture.

Recommendation 10: Automation of MRM functionalities- the study strongly recommends the incorporation of medical records management processes into both electronic business and office systems so that they can capture MR seamlessly and protect their integrity over time. The hospital's top management should also develop a policy that allows for the management of paper and electronic MR as integrated

wholes. The system administrator and the HRIM officers to train the staff on the use of the electronic MRM system in place

6.4.5 The Strategies to Improve on MRM to Supporting Evidence-Based Practices

The study findings revealed that KTRH is implementing ICT and evidence-based initiatives aimed at enhancing healthcare provision, and ensuring MR are is stored in a professional and standardized manner where they retain their evidential weight. However, findings from the study further reveal that, as the hospital continues to adopt these initiatives, several challenges in MRM are slowing down the provision of healthcare based on reliable evidence, and also negatively impacting on the management of MR as a strategic evidence resource contrary to requirements of the RC model and the JHNEBP model.

Recommendation 11: Proposed Model- This section presents the model proposed to integrate MRM to support evidence-based medical at KTRH using the RC model (Upward, 2001) and the JHNEBP Model (Dang and Dearholt, 2017) as a benchmark. For records management to be implemented properly and support organizational functions, it is highly dependent on the model used to manage the records (Murutha, 2016). The model presents proposals that underscore good MRM and enhance the strengthening of evidence to support healthcare provision using a functional, structural and infrastructural approach in line with the study objectives.

It is discussed in three key steps, which are functionalities including creation and capture, access and use, storage and maintenance, appraisal and disposition, and preservation; MRM Infrastructure of policy and procedural framework, information communication technology, and professional expertise; and lastly, integration of

evidence in decision making. These will allow the hospital to have a planned and systematic approach to the management of evidence and strengthen healthcare services by supporting evidence-based decision-making, policymaking, and clinical service in the hospital, and the adoption of the proposed model.

Figure 6.1 below presents the proposed model to MRM at KTRH.

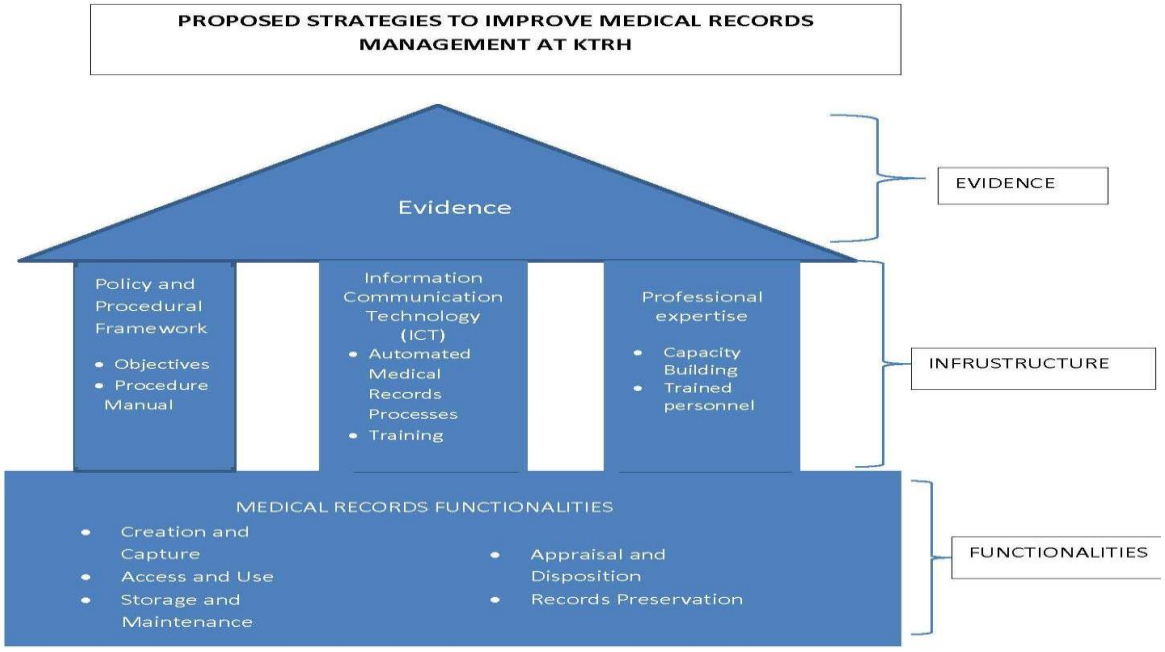


Figure 6.1: Proposed Model to Improve MRM at KTRH (Source: Research Data)

The proposed model to improve MRM at KTRH works like a building construction with a foundation, pillars, and roofing. The levels are discussed in the following three key steps:

A. Foundation

If the foundation is stable, it means the building is strong and reliable. As seen from the figure above, at the foundational level, the model roots for the integration of MRM functionalities from creation to disposal of MR, and structural aspects to manage MR across the continuum in line with the RC model (Upward, 2001).

- File creation and records capturing is the first step when the patient visits the hospital. The hospital's MRM system should have a completion procedure to ensure correct and complete MR; have procedures that guide on what, when, and how information is to be captured; and integration of a unique patient characteristic and allow for cross-referencing; allocation of explicit metadata and management of metadata schema.
- KTRH should establish procedures that outline how MR are to be classified, indexed, and organized. Each classification scheme should be linked to the retention and disposal authorities. Planning of filling areas and space for MR filling.
- On Access to MR and Security, KTRH should ensure MR restrictions, security, and privacy strategies are identified and documented; availability of policies governing system security and user access permissions; regular review of user access restrictions and other security controls; and automation of a tracking system so as to maintain a history of access to and use of MR.
- KTRH should develop a program for storage and preservation of MR in all formats. The hospital should carry out a MR decongestion process; develop comprehensive disaster preparedness and recovery strategies for all MR systems; conduct regular system tests to determine whether they can recover from system malfunctions. It should also consider improving the work environment for the HRIM department including space, lighting, and safety.
- KTRH should conduct an appraisal to select MR with enduring value; ensure MR are destroyed or disposed of in accordance with the legislation; and

develop policies to support the protection and security of MR throughout their existence.

B. Pillars: MRM Infrastructure

To support the MRM processes, the model further recommends MRM infrastructure including operational policies and procedural frameworks; Information communication and technology; and professional expertise.

- KTRH should develop and document MRM objectives that should be translated into a high-level policy that stipulates the requirements for capturing, registering, classifying, retaining, storing, tracking, accessing records, and disposing of them. The policy should develop strong foundations in which MRM in the hospital will be anchored as stipulated in the ISO 15489-1 (2016) standards. The hospital should also develop comprehensive MRM procedures that are based on RC model principles, document them in a manual, and aligned with the hospital's MRM policy.
- KTRH should recruit personnel possessing relevant MRM knowledge and skills who will be responsible for the creation, capture, and management of MR across their continuum in line with the requirements of the RC model. The study recommends continuous training of MRM staff through colleges, seminars and workshops. The study also recommends the establishment of MRM awareness programs to enable MR users to understand the functions, activities, and benefits of MRM.
- The study strongly recommends improvement on the hospital's ICT infrastructure and the incorporation of MRM processes into both electronic business and office systems so that they can capture MR seamlessly and

protect their integrity over time. The hospital should also develop a policy that allows for the management of paper and electronic MR as integrated wholes. Training on the use of the electronic MRM system in place should be conducted.

C. Roofing: Evidence

With a stable evidential foundation and support, KTRH should facilitate the integration of the best evidence from both researches and medical records with a clinician's expertise along with patients' preferences, and values as recommended by the JHNEBP model (Dang and Dearholt, 2017) as a benchmark.

6.5 Contributions and Originality of the Study

The concept of evidence-based practices in health care anticipates that decisions that affect the care of patients are taken with due weight according to the best available evidence. As a result, the best available evidence is widely used in literature to refer to clinically relevant internal (medical records) and external (research) evidence. However, evidence-based models and scholars have extensively focused on external evidence, often from basic sciences of medicine, especially from patient-centered clinical research (Dang and Dearholt, 2017; Grady, 2010). Consequently, existing literature and researches on evidence-based practices in healthcare tended to concentrate on clinical research with very little regard if any to medical records or medical records management processes. In reality, the provision of healthcare based on evidence cannot be effectively implemented without internal evidence (medical records) and sound MRM program (Waithera et al., 2017; Ondieki, 2017; Wamukoya, 2015).

The current study, therefore, attempted to look at evidence-based practices in healthcare from a medical records management perspective. The study recommended the integration of medical records management's functional, structural, and infrastructural aspects into the provisional of healthcare at KTRH. This was premised on the fact that medical records furnish documentary evidence and accurate evidence is a product of a functioning medical records management program hence the need for strategies to ensure medical records are created, captured, stored, and managed in a standardized manner where they retain evidential weight (Mogli, 2009). The current study therefore serves as a reference tool on medical decisions and for subsequent studies on medical records management (particularly managing medical as evidence) and, contributes towards the improvement of medical records management theory, practice, and methodology.

6.6 Suggestion for Further Research

The aim of this study was to assess MRM in supporting evidence-based practices at KTRH with a view of proposing strategies to improve MRM in the hospital. Although the study touched on policy and procedural frameworks; staff and ICT issues with regards to risk and disaster preparedness and management were not covered in detail. Therefore, based on the findings of the study, broadness, and importance of the subject under investigation, the study provides suggestions for further research in the following: MR and risk management in county governments hospitals in Kenya; integrating MRM in ICT systems in hospitals as a tool to support the provision of healthcare; disaster preparedness and management to ensure retention and recovery of evidence in case of a disaster.

Table 6.1: Summary of Findings Mapped to the Theoretical Models and the Research Questions

Research Qns (Themes)	Theoretical Model(s)	Summary of Findings
Status of Medical Records in Supporting Evidence-based Practices at KTRH 1. How MR are generated 2. Type and format 3. Flow of Patient Information 4. Use and role in supporting Evidence-based Practices 5. MRM from creation to Disposal • Creation and Capture • Organization and Classification • Access and Use • Storage and Preservation • Appraisal and Disposition	1. Records Continuum Model (Upward, 2001) •Dimension 1- Create •Dimension 2- Capture •Dimension 3- Organize 2. JHNEBP model (Dang and Dearholt, 2017). • Integration of evidence in the provision of health care 3. ISO 15489-1(2016) Standard	1. MRM was recognized as vital in supporting evidence-based practices at KTRH 2. The study established that the KTRH did not manage its MR well from creation to disposition as provided for by the RC model and evidenced by: • Absence of instructions or guidelines at the time of MR creation; • Absence of a policy on access and use of MR; • Inadequate storage space and equipment leading to poor storage of MR; • Absence of an appraisal and disposal program State of MRM at KTRH is likely to impede provision of quality health care
Policies and Procedural Frameworks Governing Medical Records Management • Objectives • Procedural manual	1. Records Continuum Model • Dimension 4- The pluralize 2. ISO 15489-1(2016) Standard	1. MRM policies and procedures were not available 2. There were intentions to create procedural manual but had not been implemented
Knowledge, skills and training of Staff in management of medical records at KTRH • Training • Recruitment	1. Records Continuum Model • Collaboration between archivists and medical records managers 2. JHNEBP model • Integration of professional expertise, experience and training.	1. Inadequate trained medical records staff 2. The hospital has a 16 (89%) staff deficit in the HRIM department.

Information Communication Technology preparedness in Managing Medical Records in Supporting Evidence-based Practices 1. ICT infrastructure 2. Medical Records functionalities	Records Continuum Model • Automation of the medical records functionalities such as creation and capture.	1. KTRH has putting in place ICT infrastructure including Hardware and software 2. KTRH has instituted an institution wide EDRMS as part of its HIM strategy 3. E-records management in the hospital was in its infancy stage of development. 4. KTRH has not computerized MRM processes. 5. Paper-based records still dominated **6.** No policy
Strategies to improve medical records management at KTRH	Records Continuum Model Recommends that medical MRM should be a practice that is continuously adopted JHNEBP model Hospital to have systems that facilitate the integration of the best evidence with a clinician's expertise along with patients' preferences and values.	Challenges such as inadequate equipment; lack of trained personnel; and poor planning and prioritization that required to be addressed. Recommendations that underscore good MRM: Develop operational policies and procedural frameworks for MRM; Provide MRM knowledge and skill to staff; Recruitment and training of MRM staff. Improve on its ICT infrastructure and automate MR functionalities/processes Adoption of the recommendations and best-practice strategies to improve MRM

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Appendix 1: Pre-Test Check List for Interview Schedule

1. Are word spelt incorrectly? YES [ ] NO [ ]

If YES, please indicate them in the interview schedule.

2. Is the font size used in the interview schedule legible? YES [ ] NO [ ]

If NO, please provide suggestions

……
……

3. Is the vocabulary used appropriate for respondents? YES [ ] NO [ ]

If NO, please give suggestions.

……
……

4. Are there any questions in the schedule that are not clear? YES [ ] NO [ ]

If YES, please mark them in the schedule and provide suggestions to improve clarity.

5. Is the sequence of questions flowing in the schedules? YES [ ] NO [ ]

If NO, please provide suggestions.

……
……

6. Are all objectives adequately covered in the interview schedule?

YES [ ] NO [ ]

If NO, please indicate the specific objective not adequately covered and give suggestions on the kind of questions to ask.

……
……

7. Kindly suggest any other ideas that will improve the quality of the interview schedule.

…….....
.....

Appendix 2: Interview Schedule for Admission Clerks

(Those who generate and create medical records**)**

Introduction:

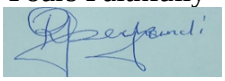
I am a MPhil student at Moi University, Kenya at the school of information sciences. I am conducting research as part of the requirements for the award of a Masters degree in Information Sciences. The topic of the research is "Medical Records Management to Support Evidence-Based Practices at Kisii Teaching and Referral Hospital."

The aim of this study was to assess medical records management (MRM) in supporting evidence-based practices at KTRH with a view of proposing strategies to improve MRM in the hospital. The research will gather data on the status of MR in supporting evidence-based practices; policies and procedural frameworks governing MRM; knowledge and skills of staff in the MRM; use of ICTs in MRM; strategies to improve MRM at the hospital

I kindly request your participation in this interview to enable me to collect data that will address the research problem under investigation. The answers to the questions and other information you provide will be held in strict confidence. Your answers will be completely anonymous, but your views, in combination with the others are extremely important in the above-named academic study.

Thanking you in advance for your time and cooperation.

Yours Faithfully



Robert Gisemba

E-mail: robbgis@gmail.com
Mobile No.: +254 704740152
Supervisor: Dr Emily Ng'eno Email: ngenojeruto@gmail.com
Dr Emily Bosire Email: emilykamboka@gmail.com

Section A: Demographics

The following questions are for analytical purposes only. They will not be used to identify any individual(s)

1. Department ……
2. Designation ……
3. Respondent age

   55 and above [ ] 45-54 [ ] 35-44 [ ] 25-34 [ ] 18-24 [ ]
4. Indicate your gender Male [ ] Female [ ]
5. Highest Academic Qualification

   PhD [] Masters [ ] Bachelors [ ] College Diploma [ ] Certificate [ ]
6. Years of Job Experience

   11 and above [ ] 6-10 [ ] 3-5 [ ] 1-2 [ ] below 1 [ ]

Section B

How are medical records generated, type of medical record, their use and role in supporting evidence-based practices at Kisii Teaching and Referral Hospital.

1. What are the core areas of responsibility for KTRH?
2. What services does your department offer?
3. What are the medical records created and used in provision of these services?
4. What is the flow of patient information in your area of service?
5. What do you understand by the phrase “Evidence-based Practices”?
6. Is there a relationship between medical records management and evidence-based practices? If YES, please explain.
7. Does medical records management support the provision of health care based on evidence?

   If YES, please explain.

Are medical records kept and managed in accordance with the policy directives and procedural framework?

1. Does your department have written policy that guides medical records management (MRM) functions? **YES** [ ] **NO** [ ]
2. If NO, what guides medical records management in the department?
3. If YES, is the policy clear, precise and easy to understand? Explain.

4. Does the policy (explain each):
    - Outlines the overall goals, vision and purpose of MRM?
    - Indicate the value the Hospital places on MRM and outlines its commitment to the sound management of medical records (MR)?
    - Outline the key MRM functions (i.e., creation, capture, classification, access, storage, security/maintenance, transfer and disposal/preservation)?
    - Acknowledge that all staff have a responsibility for recordkeeping?
    - Covers all of the department's operations and includes all record formats (paper and electronic)?
    - Require recordkeeping operational policies, procedures and systems to be compliant with legislation, standards and other requirements?

5. Is the MRM policy endorsed by the chief executive officer or equivalent?
6. Is the MRM policy reviewed and updated where required?
7. Are MRM obligations identified and acknowledged in other key policies?
8. Does the hospital have an information management framework that:
    - Outlines the long-term vision and goals for managing the hospital's information assets?
    - Recognize MR as a key component of information management?
    - Regularly identify the hospital's information needs and strategies to meet them?

What knowledge, skills and training needed in management of medical records at Kisii Teaching and Referral Hospital?

1. Is the number of HRIM department personnel enough to effectively perform the functions assigned to the department?
2. Does the director of the HRIM have formal training in MR or hospital administration?
3. Do the HRIM officers and technicians (if available) have formal training in MR?
4. Is there an orientation program for new personnel?
5. Is there a training program for MR personnel (on-the-job training and regular in-service education)?

6. Does the director of the HRIM department participate effectively in recruiting new personnel for the department**?**

What is the level of ICT preparedness in the management of medical records in supporting evidence-based practices at Kisii Teaching and Referral Hospital?

1. Does the hospital have ICT systems which keep medical records(ISO 15489-1 (2016) compliant system)?
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4. Are there standard processes for the copying, conversion or migration of records in the event of structural change, system change, upgrade or decommissioning?

What are the possible strategies to improve MRM at KTRH?

1. What are the MRM challenges you face in relation to health care provision?
2. Are these challenges recognized by HRIM department as the institution overseeing records management in the hospital?
3. If YES, what measures have been taken to address them?
4. How do you cope with these challenges?
5. What measures should be taken to overcome the challenges?
6. What are your views concerning Evidence-based Practice in relation to medical records management?
7. What are your recommendations on records management to ensure efficient provision of health care based on evidence?

Thank you for your time and cooperation

Appendix 3: Interview Schedule for Doctors, Clinical Officers and Nurses

(Those who use MR in practise**)**

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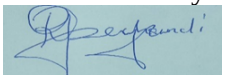

Robert Gisemba

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Mobile No.: +254 704740152
Supervisor: Dr Emily Ng'eno Email: ngenojeruto@gmail.com
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Section A: Demographics

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1. What are the core areas of responsibility for KTRH?
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   If YES, please explain.

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    - Acknowledge that all staff have a responsibility for recordkeeping?
    - Covers all of the department's operations and includes all record formats (paper and electronic)?
    - Require recordkeeping operational policies, procedures and systems to be compliant with legislation, standards and other requirements?

5. Is the MRM policy endorsed by the chief executive officer or equivalent?
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7. Are MRM obligations identified and acknowledged in other key policies?
8. Does the hospital have an information management framework that:
    - Outlines the long-term vision and goals for managing the hospital's information assets?
    - Recognize MR as a key component of information management?
    - Regularly identify the hospital's information needs and strategies to meet them?

What knowledge, skills and training needed in management of medical records at Kisii Teaching and Referral Hospital?

1. Is the number of HRIM department personnel enough to effectively perform the functions assigned to the department?
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Appendix 4: Interview Schedule for HRIM officers and System Administrator

(Those who manage medical records**)**

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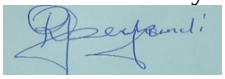

Robert Gisemba

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7. What are your recommendations on records management to ensure efficient provision of health care based on evidence?

Thank you for your time and cooperation

Appendix 5: Observational Checklist

Equipment Checklist

HRIM department equipment will be checked using equipment checklist.

1. Is there equipment in sufficient numbers and in good working condition to handle the department functions?
2. Does the type of filing cabinets or shelves used facilitate the efficient storage and retrieval of records?
3. Is the number of filing cabinets or shelves enough?
4. Could the filing cabinets or shelves be increased if the need arises?
5. If filing shelves are too high to be reached from the floor ,there a method provided to reach the files on the top shelves?
6. Does this method ensure the safety of the MHRI department personnel?

General

Check if there are operational recordkeeping procedures and practices established that:

1. Refer to recordkeeping requirements outlined in legislation, regulations and standards issued by professional bodies.
2. Align with the hospital's medical records management objectives and policy.
3. Cover key recordkeeping functions such as the creation, capture, classification, access, storage, security, maintenance, transfer, disposal and preservation of records.
4. Include all record formats (paper and electronic).
5. Apply to all of the hospital's operations
6. Identify which systems are to be used to capture and manage the hospital's records
7. Outline and assign responsibility for compliance with the procedures and practices.

Capture of Medical Records

1. Operational procedures exist to assist staff to decide what information to capture into the recordkeeping system/s, when the information is to be captured and how the information is captured. (for Hardcopy records, Digital

or electronic and Documents generated by the hospital's core medical business systems.

2. Vocabulary controls such as thesaurus, standard document and file titling are being used to aid record capture and retrieval.
3. Procedures have been established to ensure that medical records held by staff leaving the hospital are appropriately managed.

Metadata

1. Formal rules are in place to assist staff create appropriate metadata when records are created. This includes rules built into system design.
2. Metadata is assigned to the records when they are placed in any of the hospital's systems which keep medical records.
3. For digital medical records, the metadata is compliant with professional Standards.
4. A person/s with appropriate skills is responsible for determining the hospital's metadata requirements and for maintaining its metadata schema.

Classification

1. One or more comprehensive and current records classification schemes for grouping and retrieving records has been established.
2. Each classification scheme is based on an up-to-date analysis of major activities undertaken by the hospital.
3. Procedures or business rules have been established that outline how records are to be classified.
4. Each classification scheme is linked to the hospital's:
    a. Retention and disposal authorities
    b. Security and access regimes for the records system/s.

Access to records and security

1. Where access to hospital's medical records needs to be restricted for security, privacy, commercial or other reasons, this need is identified and documented.
2. Policies or business rules governing system security and user access permissions are in place.
3. Appropriate levels of access to medical records have been determined.
4. Physical and system restrictions have been implemented to control access based on the predetermined access levels.

5. Processes exist to prevent the deliberate destruction and theft of medical records and accidental damage caused by fire, flood, and vermin.
6. User access restrictions and other security controls are regularly reviewed to ensure they remain appropriate.
7. Mechanisms are in place to report breaches of security and inappropriate access to information to senior management for action.

Movement of and use of records

1. The location and movement of physical and electronic records are tracked and traceable.
2. The use of records subject to security restrictions is tracked and traceable.
3. Business rules and auditable processes are in place for the migration of records to near-line, offline and off-site storage.
4. Procedures for copying, conversion and migration of records (and their associated metadata) are implemented and monitored.

Storage of records

1. The storage of records is regularly appraised. When records are no longer needed for administrative purposes they are transferred to off-site storage.
2. Sentenced temporary and un sentenced records are stored in accordance with record management standards.
3. Records appraised as permanent are stored in accordance with records management standards.
4. Comprehensive and up-to-date disaster preparedness and recovery strategies and procedures for all systems that store records have been established.
5. Computer and other recordkeeping systems are regularly tested to determine whether they can recover appropriately from system malfunctions.
6. Medical records are in a format that ensures their preservation and accessibility for as long as they are required, in accordance with the retention and disposal authorities.

Disposal of records

1. A current records disposal authority is in place to cover the hospital's business functions.
2. Medical records are destroyed or otherwise disposed of in accordance with records management standards.

3. The disposal of records is planned and undertaken on a regular basis.
4. Responsibility for authorising the destruction of records has been assigned to an appropriate member of staff and the required approvals are obtained prior to the destruction of records.
5. Procedures are in place to ensure:
   a. Records identified for destruction have no further business need
   b. There is no reasonable risk of the information being recovered after records are destroyed
   c. The destruction of records is supervised by an authorised person.
   d. The level of control over the destruction of records is commensurate with the sensitivity of the information being destroyed.

Transfer of records

1. Procedures are in place to identify permanent records.
2. A program has been established to transfer permanent records on a regular basis
3. The transfer of permanent records is in accordance with appropriate laws and Standards

Records management systems and systems that keep electronic records

1. The hospital has established processes and procedures to ensure all systems that keep records are adequately maintained.
2. The hospital has established standard operating procedures and mechanisms for its systems that keep records and they provide for:
   a. The reporting of all system failures such as database corruption
   b. Specific actions to be taken when a system fails, including recovery and re execution of all processes underway
   c. Major changes to systems to be comprehensively documented.
3. There are standard processes for the copying, conversion or migration of records in the event of structural change (such as the restructure of government agencies and creation of new business units), system change, upgrade or decommissioning.
4. Where external parties manage agency information under contractual arrangements, the contract:

a. Recognizes the hospital's legal ownership of records held by the external party, and the information they contain
b. Enables the agency to have full and timely access to relevant records held
c. Requires the external party to comply with the agency's recordkeeping standards, policies, procedures and guidelines for as long as they hold the records.

Appendix 6: Research Permit

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: 020 400 7000,
0713 788787,0735 404245
Fax: +254-20-318245,318249
Email: dg@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

NACOSTI, Upper Kabete
Off Waiyaki Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref No. **NACOSTI/P/13/27549/1487** Date: **20th September 2014**

Robert Nyakundi Gisemba
Moi University
P.O. Box 3900 - 30100
ELDORET.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on *"The role of medical records in supporting evidence based practices at Kisii Level five hospital,"* I am pleased to inform you that you have been authorized to undertake research in **Kisii County** for the period ending **20th September 2014**.

You are advised to report to **the County Commissioner and the County Director of Education, Kisii County** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

GODFREY P. KALERWA MSc., MBA, MKIM
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Kisii County

The County Director of Education
Kisii County

Appendix 7: Introduction Letter from Moi University to carry out Research

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/MPHIL/93/11

9th December, 2013

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

RE: DATA COLLECTION – GISEMBA ROBERT (IS/MPHIL/93/11)

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 evidence based practices at Kisii level five hospital"*** under the supervision of Dr. Emily Bosire and Ms. Emily Ng'eno.

The purpose of writing is to request you kindly to allow Mr. Gisemba 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,

09 DEC 2013

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

DO/mn

Appendix 8: Authority from Ministry of Health to carry out Research

KISII COUNTY GOVERNMENT

MINISTRY OF HEALTH

Telegrams:
Telephone:
E mail: dhmtkisiicentral@gmail.com

DIRECTOR OF HEALTH
KISII COUNTY
P.O. BOX 92
KISII

Ref: KC/GEN./13(VOL.1)
Date: 17th February 2014

Approved 24/2/14.

ROBERT NYAKUNDI

RE: RESEARCH PROPOSAL: DATA COLLECTION AT KISII LEVEL 5 HOSPITAL

This is to inform you that Hospital Ethical and Research Committee has reviewed your proposal titled: **Examining the role of Medical records management in support of evidence based practice at Kisii Level 5 Hospital**. The following are our comments:

1. Your Research protocol is relevant, informative and timely.
2. You are authorized to proceed with data collection on payment of kshs.2000.

Please ensure final Study report is sent to us for information, retention and use

.....
Dr. CRISPUS NYONGESA MBChB (NRB), MPH(Moi), dip.STI (NRB)
Head, Research and continuing Education
Kisii Level 5 Hospital
CC: 1. Dr. Deborah Omeddoh;
2. Medical Superintendent, Kisii Level 5 Hospital

Noted
CHAIREG. AND INFORM DPT
K.L.5.H. KISII
BOX 92.