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Management of medical records for healthcare service delivery at the Victoria Public
Hospital in the Eastern Cape Province: South Africa

By

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Declaration

I hereby declare that this research study is my original work and has not been previously submitted to any other institution before. I also declare that all sources used in the study are acknowledged.

Signed.....

Date.....

Dedication

This piece of work is dedicated to my three children, Papama, Sango and Lumphumlo whom their motherly time was sacrificed for the completion of this work.

Acknowledgement

I firstly thank you my almighty God who protected me, gave me strength and made it possible for me to finish this study. I thank you my supervisor, Mr Khayundi for his support and guidance without which the completion of this work would have never be a success.

My special word of appreciation goes to Mrs Somngcuka and the late Mr Matsila who gave me the approval to conduct the research in the hospital. I would also like to show my appreciation to the hospital clerks and the senior staff for their participation and contribution in the collection of data for the completion of this study. Their contribution cannot go unnoticed.

Special thanks go to my husband Bonnie and my children, Papama, Sango and Luphumlo for their support and confidence showed to me. To my friends and my colleagues, thank you for your continuous support and motivation it made me to see the path I was going to.

I am who I am today because of my grandmother and the teachers who taught me in primary school,

Thank you all.

Abstract

The study sought to investigate the management of medical records for healthcare service at the Victoria Public Hospital in the Eastern Cape Province. The objectives of the study were to describe the present records management practices in Victoria Hospital; find out the existing infrastructure for the management of patient medical records at the Victoria Hospital; determine the compliance of patient medical records management in Victoria Hospital with relevant national legislative and regulatory framework; find out the security of patient medical records at the Victoria Hospital. Quantitative and qualitative approaches were employed. The sample was drawn from the service providers and from the healthcare service users. Questionnaires, interviews and observation were used to collect data. The findings showed that Victoria Hospital uses manual records management system in the creation, maintenance and usage of records. In the findings, there were challenges related to misfiling and missing patient folders which sometimes lead to the creation of new patient folders. Also, the study discovered that the time spent in the retrieval of patient folders could negatively affect the timely delivery of healthcare services. The study recommended the adoption of electronic records management system as most public healthcare institutions in the country are rapidly shifting to electronic records management system. The use of electronic records management system is believed to be efficiently and effectively promoting easy accessibility, retrieval of patient medical records and allows easy communication amongst the healthcare service institutions and healthcare practitioners.

Key words: records management, medical records, healthcare, service delivery, public hospital, Eastern Cape Province.

Table of Contents

Declaration.....	i
Dedication.....	ii
Acknowledgement.....	iii
Abstract.....	iv
.....	iv
LIST OF FIGURES	x
LIST OF ABBREVIATIONS AND ACRONYMS	xi
CHAPTER 1.....	1
Introduction and background of the study.....	1
1.1 Introduction	1
1.2 Medical Records	2
1.3 Management of medical records	2
1.4 Healthcare service delivery	4
1.5 Statement of the problem	6
1.6 Research Questions	7
1.7 Objectives of the study	7
1.8 Significance of the study	8
1.9 Scope and limitation of the study	9
1.10 Definition of terms	9
1.10.1 Medical Record:	9
1.10.2 Hospital:	10
1.10.3 Records Management Programme:.....	10
1.10.4 Service Delivery:	10
1.11 Chapter Outline	11
1.13 Summary	12
CHAPTER 2.....	13
Literature Review	13
2.1 Introduction	13
2.2 Theoretical Framework	13
2.2.1 The relationship of the theory to the study	17
2.3 Medical Records Management Practices	19
2.4 Infrastructure for the Management of Medical Records	25
2.4.1 Space.....	25
2.4.2 Storage equipment.....	26

2.4.2.1 File Covers	26
2.4.2.2 Filing Cabinets	27
2.5 Healthcare Service Delivery	28
2.6 Legal and Regulatory Framework	32
2.7 Security and Confidentiality of Medical Records	34
2.8 Challenges in the Management of Medical Records	39
2.9 Summary	42
CHAPTER 3.....	43
Research Methodology	43
3.1 Introduction	43
3.2 Brief description of the study area	43
3.3 Research Methodology	45
3.3.1 Qualitative Approach	45
3.3.2 Quantitative approach	46
3.4 Research design	47
3.4.1 Population	48
3.4.2 Sampling procedure	48
3.4.3 Sample size	50
3.5 Data collection methods	50
3.5.1 Questionnaires	50
3.5.2 Interviews	52
3.5.3 Observation.....	53
3.6 Validity and reliability of the study	54
3.7 Data analysis	54
3.8 Ethical considerations	55
3.9 Summary	56
CHAPTER 4.....	57
Data analysis and presentation	57
4.1 Introduction	57
4.2 Section A: Demographic Characteristics of the Study Participants	57
4.2.1 Profile of Participants	57
4.2.2 Gender of Service Providers	58
4.2.3 Gender Distribution of Service Users	59
4.2.4 Age Distribution of the study participants.....	59
4.2.5 Level of education of the service providers.....	60
4.2.6 Training received.....	61

4.3 Section B: Medical Records Management Practices	62
4.3.1 Record Creation	62
4.3.2 Rate of medical records creation	64
4.3.3 Retrieval of medical records	65
4.3.4 Missing medical records	66
4.3.5 Replacement of missing folders	67
4.3.6 The effect of new folders on patient healthcare	68
4.3.7 Length of retrieval time	69
4.3.8 Waiting Period for Service	70
4.3.9 Collection of medical records	71
4.3.10 Frequency of records collection	72
4.3.11 Filing of in-patient and out-patient folders	73
4.4 Section C: Infrastructure for the management of medical records	74
4.4.1 Registration of patients	74
4.4.2 Equipment used for patient folders	75
4.4.3 Storage place of medical records	76
4.4.4 Medium of medical records	78
4.4.5 Registration Space	79
4.5 Section D: Legal and regulatory framework	81
4.5.1 Policy awareness	81
4.5.2 Availability of records management policy	82
4.5.3 National Legislations for medical records management	83
4.5.4 Records management programme	84
4.5.5 Compliance with medical records management policy	84
4.5.6 Responsibility for medical records management	85
4.5.7 Compliance with relevant legislation and regulations	86
4.5.8 Rules for accessing medical records	87
4.5.9 Disposal of medical records	88
4.6 Section D: Security of records	88
4.6.1 Security of medical records	89
4.6.2 Authenticity of medical records	90
4.6.3 Movement of patient folders	91
4.6.4 Tracking and tracing of medical records	91
5. Summary	93
CHAPTER 5	95
Discussion of the findings	95

5.1 Introduction	95
5.2 Respondents' characteristics	95
5.3 Section A: Current medical records management practices	96
5.3.1 Medical record creation	97
5.3.2 Records management systems	99
5.3.3 Retrieval of medical records	101
5.3.4 Replacement of missing folders.....	103
5.3.5 Length of retrieval time.....	104
5.4 Section B: Infrastructure for the management of medical records	105
5.4.1 Registration and outpatient space	106
5.4.2 Equipment used for patient folders	107
5.4.3 Collection of medical records	108
5.4.4 Filing and storage of medical records	109
5.4.5 Medium of medical records	110
5.5 Section C: Legal and regulatory requirements	112
5.5.1 Proof of patient registration	113
5.5.2 Compliance with existing legislation and regulations	115
5.5.3 Rules for accessing medical records	116
5.5.4 Availability of records management policy	117
5.5.5 Policy awareness	118
5.5.6 Disposal of medical records	119
5.6 Section D: Security	120
5.6.1 Physical security of medical records	120
5.6.2 Authenticity of medical records.....	121
5.6.3 Tracking and tracing of medical records	123
5.6.4 Patient Identification	124
5.7 Summary	125
CHAPTER 6.....	126
Conclusions and recommendations	126
6.1 Introduction	126
6.2 Summary of the findings	126
6.2.1 Creation and management of medical records	127
6.2.2. Infrastructure for the management of medical records.....	127
6.2.3 Legal and regulatory requirements	128
6.2.4 Security of medical records	128
6.3 Conclusions	129

6.4 Recommendations	130
6.4.1 Records management system	131
6.4.2 Infrastructure	131
6.4.3 Security of medical records	132
6.5 Area of further research	132
List of References	134
Appendix A: Questionnaire for healthcare service professionals	137
Appendix B: Questionnaire for healthcare service users	144
Appendix C: Observation Schedule.....	148
Appendix D: Interview Schedule	149
Appendix E: Request Letter	150
Appendix F: Introductory Letter	151
Appendix G: Approval Letter	152
Appendix H: Policy and Procedure.....	153
Appendix I: Copy of a signed consent form	154

LIST OF FIGURES

Figure 3. 1: Road map to Victoria.....	44
Figure 4.1: Categories of Participants	58
Figure 4.2: Gender of Service Providers	58
Figure 4.3: Gender Distribution of Service Users	59
Figure 4.4: Age Distribution of Participants	60
Figure 4.5: Education Qualifications.....	61
Figure 4.6: Training Received	62
Figure 4.7: Medical Record Creation.....	63
Figure 4.8: Daily Medical Records Creation	64
Figure 4.9: Medical Record Retrieval	66
Figure 4.10: Alternatives for Missing Folders	67
Figure 4.11: Recreation of Misfiled Folders	68
Figure 4.12: Retrieval.....	70
Figure 4.13: Waiting for Service	70
Figure 4.14: Collection of Medical Records	72
Figure 4.15: Collection Frequency of Medical Records	73
Figure 4.16: In-patients and Out-patients Folders	74
Figure 4.17: Storage Equipment	76
Figure 4.18: Medical Records Organisation	77
Figure 4.19: Medical Records Filing	77
Figure 4.20: Medical Records Medium.....	79
Figure 4.21: Registration Space.....	80
Figure 4.22: Policy Awareness.....	82
Figure 4.23: Availability of Records Management Policy	83
Figure 4.24: Knowledge of Health Information Legislations	84
Figure 4.25: Person Responsible for Medical Records.....	86
Figure 4.26: Rules for Unauthorised Access	87
Figure 4.27: Medical Records Disposal.....	88
Figure 4.28: Security of Medical Records.....	89
Figure 4.29: Medical Records Storage	90
Figure 4.30: Tracking and Tracing of Medical Records	92

LIST OF ABBREVIATIONS AND ACRONYMS

AIMA	-	American Information Management Association
EMR	-	Electronic Medical Records
FHR	-	Facility Health Record
HIPAA	-	Health Insurance Portability and Accountability Act
HPCSA	-	Health Professional Council of South Africa
ICT	-	Information Communications Technology
IRMT	-	International Records Management Trust
ISO	-	International Standards Organization
MDG	-	Millennium Development Goals
OPD	-	Out Patient Department
PHR	-	Patient Held Record
SA	-	South Africa
UK	-	United Kingdom
UN	-	United Nations
USA	-	United States of America
WHO	-	World Health Organizations

CHAPTER 1

Introduction and background of the study

1. 1 Introduction

Hospitals, both public and private, create, receive and maintain records as evidence of their functions, activities and transactions. Any information documented as a result of processes and activities of a particular business is a vital asset of an organization as any other vital assets including finance and human resources. Moreover, records in an organization are a unique and irreplaceable source of information about its work, achievements, and continuity. Record serves as a reliable and an authentic source of information which must retain its originality throughout its use. Dikopoulou et al., (2010) pointed out that organizations keep their records to promote accountability and also are important in the planning and decision making processes. Kemoni and Ngulube (2007) opine that an effective records management programme is a key component of any public sector for efficient and enhanced service delivery.

Service delivery is important to both public and private organizations. Arries , Ebin and Newman (2008) assert that service delivery has become an increasingly important concern of public healthcare services. The authors maintain that healthcare service delivery can be measured by reliability, responsiveness, courtesy, customer orientation, confidentiality, and caring. To promote efficient healthcare service delivery, healthcare facilities need to create people driven services that are

characterized by quality, equity, timeousness and a strong code of ethics (Arries , Ebin and Newman, 2008). Records management is vital to service delivery by any institution or organization. Kemoni and Ngulube (2007) pointed out that misfiled and lost records are likely to delay the service delivery and hence dent the image of any service provider.

1.2 Medical Records

A medical record is an important document that is used by healthcare institutions and practitioners to record patient history, illness, and treatment (Mogli, 2009). A medical record is created as evidence of an interaction between a patient and healthcare personnel during a patient's visit to a healthcare facility. The interaction may involve, among other things, the recording of information about a patient's biographic data as well as temperature, blood pressure, and diagnostic test results. It also may document operations and other forms of treatment. Steward (2005) points out that medical records form an integral part of healthcare service delivery as they contain critical information whose primary purpose is to facilitate continuum of care and treatment of patients.

1.3 Management of medical records

The management of medical records has a long history. For a long time medical records have been in paper format. However expansion in the healthcare service delivery has seen paper format becoming more problematic. In the United States of America (USA), for example, the amount of patient information on paper and the lack

of a central storage system led to large volumes of medical records being stored in various locations. It was also noticed that the storage often had fragmented, inaccurate, incomplete, duplicative, and poorly documented information (Steward, 2005). According to Syed-Mohamad et al. (2010) in Malaysia the paper-based records had problems in communicating essential information necessary for quality and efficient patient care. The filing system created problems in retrieving medical records. The paper records lacked uniformity across departments and patient information was captured differently. Similar problems were experienced in Kuwait where in the study by Al-azmi et al., (2009) it was revealed that records officers took time in locating records. In Hong Kong the paper based medical records posed some challenges of retrieval and sharing of patient medical information due to lost and misplaced records (Ting et al., 2011a). To overcome problems associated with paper based records many countries, especially in the developed world, adopted the use of information technology for better and effective use of medical information to improve healthcare service delivery (Al-azmi et al., 2009).

Admittedly, in developing countries the management of medical records has not been taken as a priority and is generally inadequately supported and poorly managed (Wong and Bradley, 2009). In Ethiopia, for example, medical records were commonly missing, incomplete and inaccessible while in Ghana the management of medical records faced many obstacles including ineffective filing and retrieving due to poor or unsuitable storage facilities (Williams & Boren 2008).

1.4 Healthcare service delivery

Healthcare service delivery is not a new phenomenon but can be traced back to ancient civilization. According to Eike-Henner, (2001) the healthcare service delivery was a contact between a healthcare provider and the healthcare consumer. According to the author, the physicians or healthcare service provider obtained vital data from patient and retained it for future references. Before the invention of paper and eventually communication technologies such data were stored on various media including clay or wax tablets and animal skins. Inarguably healthcare service revolved around a patient's record as it still does at present.

1.5 Background

In South Africa, healthcare services are categorized into three levels; the Primary care level, District Hospitals and the Tertiary level Hospitals. Victoria Hospital falls under the second level, District Hospitals. The common entry point to healthcare service is at the primary care level which comprises of clinics and other healthcare services. Consumers of healthcare services at primary healthcare level may be referred or transferred to the next level of healthcare services (Cullinan, 2006). Local clinics of the surrounding communities under Nkonkobe Municipality refer their patients to Victoria Hospital. Arries and Newman (2008) aver that healthcare service delivery to the public has been made a constitutional right. The importance and quality of the healthcare service delivery is guided by the principles of *Batho Pele*. (South Africa, 2007). Unarguably, the provision of quality healthcare service cannot be delinked from, among other things, sound records management programmes. Kemoni and Ngulube (2008) opine that there is a direct link between effective

records management and enhanced service delivery, hence good record keeping is the key to enhanced public healthcare service delivery. This then suggest that for the organization to render quality and efficient service to its users need to have good record keeping system. Hospitals just like any other organization has to adopt the effective records management system for the quality healthcare service delivery as the medical records have a direct link to the delivery of healthcare services. According to Aries and Newman (2008) health consumers are placed at the centre of healthcare service delivery. In tandem with the principles of Bath Pele, the healthcare service delivery should be driven by the vision of transparency, efficiency, effectiveness, accountability and responsiveness to the needs of patients. Jager and Plooy (2007) assert that in public hospitals, the state is the primary provider of the healthcare service delivery and therefore quality healthcare service is expected by the consumers.

Marszalek (2006) opines that the management of medical records in South Africa differs among public healthcare service institutions. According to this author some hospitals use electronic records systems while others use both manual and electronic records systems. Tp and Sa (2006) pointed out that good and accurate record keeping as well as the communication of clinical information between health practitioners is essential for good and quality healthcare practice.

In South Africa there are two types of widely used records, the Facility Held Record (FHR) and the Patient Held Record (PHR). According to Marszalek (2006), the FHR is kept in the facility and remains the product of that facility while the PHR is kept by the patient and can be used at any healthcare facility to provide the continuum of healthcare. The FHR is widely used by the hospitals whilst the PHR is widely used by the local clinics. Consumers of healthcare are always advised to carry their PHR

whenever they visit any other healthcare facility as this record contains history patient health information.

1.5 Statement of the problem

A medical records management programme ensures the creation, maintenance, confidentiality, security, preservation and easy retrieval of patient medical records. Medical records are integral to the continuity, quality and efficient healthcare service delivery. Poorly managed medical records may lead to hospital staff spending more time to locate and retrieve patient medical records. This could have adverse consequences to those in critical health condition since it is difficult for the medical personnel to render effective healthcare services without relevant medical records.

In some South African public hospitals the apparent lack of efficient management of medical records has led to a situation where many medical personnel and patients prefer the use of patient held medical records to ensure the continuity of care and the delivery of healthcare service as well as reducing the time for waiting (Maratha 2011). Moreover in the recent past, there have been reports in the local media of patient records that have been tampered with at public hospitals (*Eastern Province Herald* 2007, *Daily Dispatch*). Instances of lost files or patients waiting for long for files to be retrieved have also been reported (Maratha 2011). Admittedly, this is a grave violation of the confidentiality and security of medical records and contrary to the stipulations by the South African National Health Act no.61 of 2003 and National Archives and Records Service Act, 1996. This equally impacts the nature of healthcare service delivery.

The extent to which records management programmes in public hospitals, in the Eastern Cape Province, influence healthcare service delivery has not been widely documented. This study sought to investigate medical records management practices in public hospitals in the Eastern Cape Province using the Victoria public hospital as a study case. This is considered important in view of the value the government currently attaches to efficient and effective healthcare service delivery to the South African public.

1.6 Research Questions

The study was guided by the following research questions:

- ❖ How are patient medical records managed at Victoria Hospital?
- ❖ What infrastructure is in place for the management of medical records at Victoria Hospital?
- ❖ Does the management of medical records comply with the relevant legal and regulatory framework?
- ❖ What is the nature of security for the medical records at the Victoria Hospital?

1.7 Objectives of the study

The main objective of the study is to investigate the role of medical records management programmes on the delivery of healthcare services by public hospitals in the Eastern Cape Province.

The specific objectives of the study are as to:

- ❖ Describe the present records management practices at the Victoria Hospital.
- ❖ Find out the existing infrastructure for the management of patient medical records at the Victoria Hospital.
- ❖ Determine the compliance of medical records management at the Victoria Hospital with the relevant legal and regulatory framework.
- ❖ Find out the security of medical records at the Victoria Hospital.

1.8 Significance of the study

Healthcare service delivery is strategic to any country's development. Among the achievements of the Millennium Development Goals (MDGs) is the provision of healthcare for all by 2015. Unarguably records management plays an important role in healthcare service delivery since a patient's medical record is key to decision making by healthcare workers on the nature of healthcare required. This study explored the extent to which the medical records management programmes affect the healthcare delivery services by the Victoria public hospital in the Eastern Cape Province. A comparable study had been undertaken in the Limpopo Province (Maratha, 2011). Much as the findings of the study in Limpopo were important to this study it can be argued that they could not be generalized to the Eastern Cape Province public hospitals due to various reasons relating to variation in the geographical location, as well as the social, cultural, political, and economic conditions.

There is a dearth of literature on the role of records management programmes on the healthcare delivery by public hospitals in the Eastern Cape Province. There is no doubt that the findings of this study will form the foundation of future studies in this area. Moreover although the findings of this study, like the one conducted in Limpopo, may be limited to the areas studied they will make an important contribution to knowledge pertaining to the impact of medical records management programmes on healthcare service delivery in South Africa in general and the Eastern Cape in particular.

The findings of the study will undoubtedly provide decision makers, health managers and workers in Victoria Hospital with information that may be key to improving or reviewing the existing medical records management programmes with a view to improving or strengthening the quality of healthcare delivery service to users.

1.9 Scope and limitation of the study

This study covers the management of medical records at the Victoria Hospital in the Eastern Cape Province. The study does not cover other records created, received and maintained by the hospital.

1.10 Definition of terms

1.10.1 Medical Record:

Mogli (2009) defines medical record as an orderly written report of the patient that contains the history of illness, progress notes and radiology findings and when complete it should have included sufficient data about the diagnosis treatment and length of hospital stay.

1.10.2 Hospital:

A hospital as defined by McWay (2008) is a healthcare facility that has a governing body, an organized medical staff and professional staff and inpatient facilities and provides medical, nursing and related services for ill and injured patients 24 hours per day, seven days per week.

1.10.3 Records Management Programme:

Records Management Programme as described by Shepherd and Yeo (2003) is a strategic function that is effective in setting, monitoring policies and standards for records management by designing and implementing records management system used to unify set of resources, responsibilities, procedures and equipment to maintain and provide easy access to records.

1.10.4 Service Delivery:

Arries and Newman, (2008) describes service delivery as a multiphase interactive action which coincide with the dimensions of excellence, assurance of competence, attentiveness, dissemination of information by staff and flexible helpfulness that add valuable meaning to the users.

1.11 Chapter Outline

Chapter 1: Introduction

This chapter gives the introduction and background to the study, the problem statement and research questions and objectives that guided the study, the significance of the study, and definition of the terms.

Chapter 2: Literature review

The chapter reviews the relevant literature to the study and the theoretical frameworks that underpinned the study.

Chapter 3: Research Methodology

In this chapter the research methodology, research design, data collection methods and research instruments, and data analysis used in the study are explained. Ethical considerations are also outlined.

Chapter 4: Data presentation and analysis

This chapter presents data analysis and interpretation using graphs and tables.

Chapter 5 : Discussion of the research findings

This chapter discusses the findings of the study based on the literature reviewed and the specific objectives that guided the study.

Chapter 6 : Conclusions and recommendations

This chapter deals with the conclusions to the study and the recommendations based on the findings.

1.13 Summary

The chapter introduced the area of the study and gave a background to medical records management programmes in healthcare service delivery. The chapter also states the problem of the study, research questions, the research objectives, significance, and scope of the study. Key terms used in the study are also defined. The next chapter reviews the available literature and the relevant theories pertaining to medical records management programmes for healthcare service delivery.

CHAPTER 2

Literature Review

2.1 Introduction

The previous chapter introduced the reader to the concept of medical records, the production of medical records, the uses of medical records and the effect of medical records on the delivery of healthcare services in public hospitals. This chapter provides an overview of the related literature on medical records management programmes and their role in healthcare delivery. The chapter also covers theoretical framework in which the study is anchored.

The review of literature exposes the researcher to available literature and offers new ideas, perspectives and approaches to the topic. According to Leedy and Ormrod (2005) the review of literature is necessary to describe theoretical perspectives and previous research findings regarding the research problem at hand. Rubin and Babbie (2011) aver that a literature review reduces the chances of selecting irrelevant and/or outdated research question. Through literature review a researcher acquires what has already been covered in the chosen research area and is enabled to problematize the study's implications on future research.

2.2 Theoretical Framework

The International Records Management Trust (2000) identifies three key principles that govern the care of records. The first principle states that records must be kept together according to the office responsible for their creation or accumulation. They

have to be kept in the original order established at the time of their creation. The second principle is that records should follow a life cycle. According to this principle, records must pass through three phases, namely, the current phase, semi-current phase and the non-current phase, before they are disposed of.

The processes of records management practice focuses on the control of records from their creation, processing, distribution, organizing, storage and retrieval to their ultimate disposition (Ngulube and Tafor 2006). Their view is that records management processes are vital to the effective and efficient management of recorded information. The primary aim of records management is to preserve and make the records available in the right format, to the right people, at the right time for as long as they still have continuing utility. For instance, since hospitals deal with the life and health of patients, it is imperative for them to have good records management practices for the quick retrieval of medical records to facilitate quality healthcare service delivery. Good records management practices will assist the hospital to retrieve the right medical records on time to the right person. The IRMT (1999) maintains that good records management practices promote good medical care. Without accurate, complete and accessible medical records, the healthcare professionals may not offer the best treatment. Subsequently, they may misdiagnose the condition which may have adverse consequences. The records life cycle model was developed in the 1930's by the National Archives of the United States of America. The different developmental stages of the records' life cycle indicate that records are managed as objects and only focus on the container of information. The medium of information became the prominent feature of the model. However, the

emergence of technology has brought about some new focus on the management of records.

Bantin (2008) argues that the life cycle model was heavily criticised and was unable to handle the electronic records hence the development of the continuum model that will accommodate both the paper and the electronic records. Contrary to the paper based records, electronic records do not focus on the container or carrier of information since the record is both hardware and software dependent. The widespread use of technology in organisations and hospitals has resulted in the creation of computer generated records. The continuum records management model accommodates the preservation of both the paper and the electronic records.

IRMT (2000:17) suggested that the care of records and archives should be managed through a coherent and consistent continuum of actions from the development of record keeping system through creation and preservation of records to their use as archives. The continuum model focuses on four actions that continue throughout the life of a record: the identification of a record, intellectual control, provision of access, and physical control. The proponents of this model view it as suitable for the management of electronic records. IRMT (1999) argues that each hospital should aim at developing a structured and effective records management programme to cover all types of records whether electronic or paper based as long as they are the carrier of information.

Flynn (2001) defines the records continuum theory as a model with a consistent and coherent regime of management processes from the time of creation to the preservation and use of records as archives. McKemmish (1997:10) refers to the records continuum model as 'holistic and multidimensional like a band of light that can be separated out into its constituent layers'. Medical records are delicate records

which contains health information of a patient. Physicians depend on the patient health information to make informed decisions as how to diagnose and treat the sickness. This implies that patient health information should always be available whenever is needed. The continuum model allows the preservation of all types of records because a record is created for a purpose. McKemmish (1997) argues that the records continuum model explores the continuum of responsibilities that relate to recordkeeping regimes that capture, manage, preserve and represent records as evidence of social and business activities of an organization for as long as they are of value, whether for a short or a long period. Hospitals creates a medical record of a patient for a purpose of diagnosing and administering the treatment, the same document serves as an evidence that a certain patient once visited a hospital for a certain sickness. In that document, one is able to see what diseases are curable and which disease gives challenges. According to Shepherd and Yeo (2003), the records continuum model was developed in the 1980s and 1990s as a critique of the records life cycle model. One of the criticisms of the life cycle model is its inability to accommodate digital records which are becoming prevalent due to the emergence of information and communication technologies.

The records continuum concept connects records management processes to the concept of accountability in its broadest sense which encompasses corporate, social, cultural and historical accountability. Amongst those key areas, there is the function of records as source of value added information in which records can be exploited as assets with new records being created in the process. Upward and McKemmish (2006) argue that the records continuum model consists of four dimensions, namely; creation, capture, organisation and pluralisation. The pluralization dimension fits well with the post usage of medical records especially for research or study purposes.

The rationale behind the use of the continuum model is to address the fundamental questions as to why medical records are produced, preserved or destroyed, and how these records are accessible to the public for research or study purposes.

2.2.1 The relationship of the theory to the study

This study employs the continuum model as a framework for the management of medical records. This is due to the processes of continuum model which operates through time and not a time-bound management type of record keeping practice. Unlike its predecessor, a continuum model is a continuum of activities designed to ensure that meaning, context, accessibility and evidence of a record are captured and maintained through time. The continuum model recognises that from the time of creation, a record serves multiple purposes. In the medical situation, for instance, a medical record is used to administer patient treatment but can also be used for the advancement of medical research in the field of medicine. The rationale for choosing the continuum model is its consistent and coherent regime of management processes from the time of record creation to its preservation and therefore is a continuous series of elements passing into each other MckKemish (1997).

Medical records are preserved to communicate clinical information amongst healthcare professionals while ensuring an efficient and effective delivery of healthcare services. Medical records are the most important information resource for decision makers to base their decisions on future plans. They are a unique and irreplaceable source of information. Moreover, they are expensive to produce, for example, X-Rays and other laboratory examinations. The continuum model

management processes ensure that delicate records are always available in one's medical file. According to the IRMT (1999), all hospitals deal with the life and health of their patients and, amongst other things, the patient's medical care relies on good record keeping. The accessibility and availability of medical records is of great importance since it is impossible for healthcare professionals to offer the best treatment without the medical record or they may misdiagnose the condition. The model offers a holistic and conceptual framework to study the role of medical records management programmes in the delivery of healthcare services. Gilliland and McKemmish (2004) posit that the records continuum model connects the records management processes to the concept of accountability in its broader perspective. Connected to the concept of accountability, the IRMT (1999) maintains that medical records play a pivotal role in providing evidence of hospitals' accountability for their actions. Through the consistent and coherent management processes of the continuum model, hospitals are able to defend themselves against any possible litigation that might be posed to them.

Gilliland and McKemmish (2004) further state that records are a source of value added information. Continuum model allows exploitation of records as assets of organizations and enables new records to be created in the processes and activities of an organisation. This is in line with the dimension of pluralisation as mentioned by Upward (2000) in which proper preservation of medical records helps the society and those who pursue their research studies towards the field of medicine to be able to use medical records in their research. The availability of such records enables researchers to trace the trends of certain illnesses and their diagnostic treatments.

2.3 Medical Records Management Practices

Literature reveals that healthcare must be dynamic in response to the rapid increasing complex environment. Globally, countries are concerned with the effective and efficient delivery of healthcare services to the public. This is also in response to the health-related Millennium Development Goals (MDGs) urging all nations to improve access to affordable healthcare services. The MDGs requires series of interventions that can contribute to the achievement of health-related MDGs' targets. For the purpose of this study, mention should be made of two interventions by Wagstaff and Claeson (2004), namely, improving healthcare service delivery and strengthening core public health functions. For instance, in the United States of America, accessibility and affordability of healthcare services by all was declared a national priority. The only way to achieve this is through an in-depth knowledge of patient health information history that is captured in the medical records. The patient health information is normally gathered when the patient visits the healthcare facility. Ting et al. (2011a) aver that decision making by healthcare professionals rely heavily on the knowledge and availability of patient medical history.

The continuity of healthcare services relies on the availability of accurate, complete and comprehensive patient health information. According to Green (2011), a medical record is a record that documents a patient's past medical history. Services like diagnoses, treatments and procedures performed are also spelt out. A medical record can be described as a multifunctional document used to record critical health information about patient medical condition which is used by healthcare professionals to administer patient treatment (Wong and Bradley, 2009). These two authors assert that a medical record is the cornerstone in the delivery of quality

health care service and efficiency of patient care during the hospitalization and subsequent follow up visits. Steward (2005) maintains that medical records are an integral part of healthcare as they hold critical information of a patient.

Adesina et al. (2011), point out that a medical record can be in a paper or an electronic format. Healthcare professionals rely on the availability of complete, accurate and comprehensive patient health information that is contained in the medical record to administer diagnosis and treatment. The IRMT (1999) asserts that the common practice in hospitals is to keep medical notes together in one file bearing the patient's name and other personal details. Included in the file are the referral letters from the local healthcare centres and other documents relating to the patient's health condition. The IRMT recommends that each patient should have a single file as it is crucial for the quality of healthcare service delivery and continuity of patient care.

Ting et al. (2011) note that in Hong Kong most healthcare institutions use paper based medical records. According to these authors, the paper based medical records pose challenges in medical practices. The first challenge is the huge collection of these records which makes it difficult to retrieve them and some records get lost or go missing. The misplaced or lost medical records make it difficult for any healthcare professional to provide required standard of healthcare. The authors further argue that with the paper based medical records the sharing of patient medical information is impossible. It is common practice that people visit more than one medical institution in their lifetime and so they cannot be expected to recall all the previous medical history during each hospital visit. This is prone to cause undesirable medical decisions due to inaccurate information supplied to the

attending healthcare professional. In the Greater Tzaneen Municipality of Limpopo, for instance, the patients' booklets were introduced to improve the continuity of care for patients (Norden et al. 2004). The idea and the use of patient held records (PHR) originated from the unexpected experiences of patients when visiting the healthcare facilities and the original patient folder with the previous consultations became unavailable. This is common in the facility held records (FHR) where the hospital clerks will spend more time searching for a misplaced or a missing patient folder.

The shift to keeping medical records in an electronic form has led to a reduction of hurdles like misdiagnoses, missing or lost medical records, service delays, and staff shortages, which can occur due to incomplete or disintegrated information. In the rapid developing information and communication technologies (ICTs) environment, the healthcare industry, like other sectors, is adopting information and communication technologies in the creation, maintenance, use, and storage of health information. In the ICT environment, medical records, charts and paper files are digitally stored and become available in the doctors' offices. The storage of medical records in digital form certainly has benefits in the healthcare industry in many ways. For example, the use of ICT makes it easy to retrieve and access medical records; it consumes less space compared to the paper based records; and enables the sharing of health information amongst healthcare providers.

The use of ICT in hospitals allows real time access to healthcare records irrespective of the user's location. Adesina et al. (2011), opine that the integration of ICT in hospitals provides healthcare professionals with a quick access to patient health information. They further observed that sharing health information amongst

healthcare professionals facilitates the coordination of healthcare service delivery in healthcare facilities.

Norway is a developed country that has legally allowed patients to access and read their medical records using information technology. According to Wibe et al. (2011), access to medical records is expected to reduce power imbalance between the patient and the healthcare professional. Patients in Norwegian hospitals request their copies of medical records to secure a smooth transmission of information between health personnel inside the hospital and between different hospitals. In such systems, patients are taking full responsibility of their health and keep themselves informed about what is contained in their medical records. The current practice in Norway is expected to reduce documentation errors which sometimes arise from the records being mixed up. In addition to the technologically driven patient care, Wibe et al. (2011) assert that in Norway there is an initiative to implement the use of patient held record system (PHR), which will also be based on electronic applications. The initiative of PHR system is aiming at making medical information available online for easy access by patients.

Mogli (2009) points out that the traditional paper-based medical records are undergoing a major transformation. However, in the developing world, transformation remains low due to a general lack of the necessary resources. In the study conducted at the Gulf Cooperative Council (GCC) in Kuwait, Qatar, Bahrain, Oman, Saudi Arabia and United Arab Emirates (UAE), it was established that there were problems regarding medical record management programmes. Records in some hospitals in these countries had their medical records poorly organised and

sometimes resulting in some of the diagnostic tests to be lost. The unavailability of diagnostic tests usually results in the repetition of tests which are mostly expensive to reproduce.

In Ethiopia, Wong and Bradley (2009) found out that there were reports of frequent missing and incomplete medical records. The study by these two authors revealed that in the hospital in Ethiopia, there were four distinct points of patients' registration. It was indicated that each point of registration uses its independent patient registration log book. The patient information is recorded in the log book and a medical record number is assigned. There was no central medical record storage system. They reported that some medical records were kept in the clinics or in physicians' offices. It was also possible that more than one patient could share the same medical record number making it difficult for medical staff to use previous patient health information and follow the chronology of diagnostic treatments administered to each patient. This normally results in the returning patients being assigned new medical record numbers due to missing records (Wong and Bradley 2009). Shonubi et al. (2005) have shown that in Lesotho the paper based medical record system was still prevalent. The patients normally retain their medical records obtained from the healthcare institution from the first visit. This kind of medical record is in the form of a small book which is presented at any healthcare institution and is used for quick reference to the patient's medical history.

In South Africa (PHR) is normally used by the clinics at a Primary level of healthcare facilities. Patients are advised to bring their small books whenever visiting the clinics and even the hospital to enable the attending health professional to follow the patient health information history by consulting the small booklet used by the clinics.

The National Health Act of 2003 stipulates that all South African citizens may access state funded hospitals at no cost (South Africa, 2003). This is consistent with the MDGs on health which require all countries to provide primary healthcare and work towards the reduction of child mortalities while improving on maternal health. This has resulted into an increase of the utilization of the public healthcare facilities. As more people become users of state funded health facilities, the number of medical records created has been on the increase thereby exerting pressure on the records management programmes in hospitals. Maratha (2011) established that, in the Limpopo Province, public hospitals are using manual records management systems which were reported to be hectic and tended to negatively impact the record retrieval process. The study conducted in Limpopo Province indicated that the major retrieval problems of medical records were due to misfiling, missing files, untidy filing, and high records demand and staff shortages. What is experienced in Limpopo province is likely to be the same in other provinces as well.

South African public healthcare institutions use different health records management systems which do not easily integrate with each other (Kerry, 2006). Marszalek and De Villiers (2006) contend that some hospitals in South Africa use computerized or electronic records keeping systems; others use both paper based and electronic systems whilst others may not keep records at all. As indicated above that in greater Tzaneen patients are advised to carry their small books when visiting healthcare facilities.

According to Kerry (2006) there are two basic types of ambulatory medical records that are used in South African public healthcare facilities, namely, the patient held

medical record and the facility held medical record. The facility held medical records are kept and filed at the healthcare facility or hospital whilst the patient held medical record is in the custody of the patient and may be used at any healthcare facility in the country.

2.4 Infrastructure for the Management of Medical Records

Hospitals, like other organizations, produce medical records daily either in paper or electronic format. Green (2011) contends that for an effective storage and retrieval of such vital records, it is essential that a well-organized numbering and filing system be put in place. Like other records, medical records require space and filing equipment for storage purposes. This is important for facilitating location and retrieval of records efficiently and timeously. Filing equipment can also contribute positively to safe keeping of records.

2.4.1 Space

Green (2011) aver that healthcare facilities that use paper based medical records need to acquire filing equipment to store the records and when selecting such material they should consider the location of records. It is recommended that before purchasing any equipment for medical records management, there should be prior identification of appropriate space where the equipment will be located. This help in calculating enough space to fit the equipment for records storage, facilities for staff

and patient registration. This is not only unique to hospitals but all organizations that create records on their daily operations whether uses centralized or decentralized system of records management, they do need enough space for the storage of their records. Green (2011) argues that healthcare facilities should keep and retain medical records to ensure easy retrieval. The IRMT (1999) asserts that a waiting area for registration must be large enough and if possible there must be a spacious counter for possible patient interviews. It is recommended that the patient registration areas and medical records storage should be in close proximity to allow quick retrieval of patient folders.

The space should be big enough to accommodate a reception area for patients and a secure area for records and staff. Staff involved in patient registration must sit behind the counter, and behind them should be located a master patient index and patient folder shelving. Green (2011) posit that the file area should be organized to constitute more space for filing equipment and allow for possible file expansion. Marutha (2011) observes that a lack of filing space was the major cause of misfiling, missing records and damage to records.

2.4.2 Storage equipment

2.4.2.1 File Covers

The International Records Management Trust (1999) recommends that the design of file covers used for patients should contain a hospital name printed or stamped on the cover. Some hospitals may also prefer to print the word 'confidential' on it as well. The patient's name, number and the last date of hospital attendance are also

critical information to be included on the file cover. In countries where A4 size paper is used, the file cover should be slightly bigger than the paper size to allow proper protection of the medical notes. In that way, the medical records inside the file cover will not be folded and get damaged. Inside the file cover, the medical records should be secured with plastic fasteners to reduce the risk of becoming detached or disorganized.

2.4.2.2 Filing Cabinets

The commonly used storage equipment for paper records are vertical file cabinets, lateral file cabinets, shelf files and movable or compressible files.

- i.* **Vertical File Cabinets:** According to Kallaus (1987) these are conventional storage cabinets consisting of one to five drawer sizes in which records are stored in drawers. They are considered as advantageous for storing larger materials like X-ray records in hospitals.
- ii.* **Visible File:** According to Green (2011), the visible file system allows the user to easily view the content of the drawer. In hospitals, the manual master patient index cards for inpatients are often stored in these files until the time of discharge.
- iii.* **Lateral File Cabinet:** These are known to have drawers that open from the long side and look like a chest of drawers or a shelf unit with retractable doors. These cabinets consist of roll-back drawer fronts which allow for a

quick retrieval of patient folders. Lateral file cabinets are designed to consume lesser space and are suitable for narrow spaces (Green, 2011).

- iv. Shelf Files:* These are simple shelves with a filing space like a standard drawer cabinet. Mostly, the shelves may be open style arranged like a stationery book shelf. In using this type of storage, the staff may use a step stool to access patient folders that are stored on top of the shelf (Green, 2011).
- v. Movable Files:* Green (2011) argues that these types of files are available on manual and those that are controlled by power. The manual movable files are mounted on tracks that are secured on the floor and are moved through the use of a handle. The power movable files move when a clerk touches a button. Public hospitals in the Limpopo Province were found to have good filing cabinets, filing boxes and file covers (Maratha, 2011).

2.5 Healthcare Service Delivery

In the United Kingdom, there were regular reports and negative stories about service delivery including patient deaths in hospitals. In Hong Kong, it was discovered that there were difficulties in accessing and retrieving medical records due to huge collections of paper based records (Ting et al. 2011). It was noted that there were challenges of misplaced records, difficulties in sharing the patient health information and medical errors due to invisible medical processes.

To improve the quality of healthcare service delivery, most countries are increasingly implementing the use of information and communication technologies (ICTs) for their records management programmes. Syed- Mohamad, Ali and Mat-Husin (2010) aver that the use of ICTs in healthcare delivery has potential for reducing adverse incidents which can occur due to medical errors, incomplete and disintegrated information. The integration of ICTs in healthcare service delivery requires the whole hospital system to have a robust ICT infrastructure including hardware, software and maintenance. The most cited problem in the integration and use of ICTs in the healthcare delivery sector is attributed to a lack of qualified personnel who are able to utilise the infrastructure to achieve efficiency and effectiveness in healthcare service delivery.

According to Williams and Boren (2009), the African continent is plagued by many challenges such as a lack of a robust healthcare infrastructure to ensure the continuity of patient healthcare services and access to healthcare facilities, which remain a concern. In the study conducted in Ghana, it was established that there was a dearth of resources such as personnel, finance and infrastructure.

Wong and Bradley (2009a) contend that an efficient medical records management is often lacking in most of the developing world as compared to most developed countries where the medical records management is always supported by a stable infrastructure. A lack of requisite infrastructure in most developing countries impacts negatively on healthcare service delivery. In Lesotho, Shonubi et al. (2005) found that accessing healthcare services was difficult due to infrastructure related challenges such as improper physical facilities, unavailability of equipment as well as trained personnel. Lesotho is a mountainous region which frustrates healthcare

service delivery due to impassable roads. As a result, the government has established a Lesotho Flying Doctors Service unit to serve remote clinics which are inaccessible by road. Due to infrastructure problems, for communication processes the healthcare staff and clinics, uses one way radio facility to reach the areas where telephone services are not available.

South Africa is not immune from this problem especially the rural parts of the Eastern Cape Province. Distances travelled by those who seek healthcare services are indicated as one of the major barriers to healthcare use especially where the healthcare facilities are located far away from a large number of residences. According to the study by Tsawe and Susuman (2014) the residents in the rural areas of Eastern Cape travel long distances to access healthcare services and often have to wait in long queues before actually getting the healthcare services. Apart from the long distances that patients have to travel in the rural areas, healthcare staff shortage and the long waiting time for service reduces service satisfaction and impact negatively on the quality of healthcare service delivered.

South Africa, like other developing countries, is struggling to achieve requisite healthcare service delivery due to scarcity of trained personnel and insufficient infrastructure (Van Rensburg – Bonthyzen, 2012). The ultimate aim of the government of South Africa is to develop a unified national healthcare system capable of delivering quality healthcare services to all its citizens (M'kumbuzi et al., 2004). The constant shortage of healthcare professionals affects the quality of medical records management programmes in both urban and rural hospitals (Marszalek and De Villiers, 2006). South Africa is facing a challenge of producing, recruiting and retaining a qualified health service workforce. Wadee and Khan (2007)

opine that the shortage of healthcare workforce in many places is one of the major constraints in achieving the three health-related Millennium Development Goals (MDGs).

In rural areas of South Africa, Gaede and Versteeg (2011) write that there are instances where the primary healthcare level and the district hospitals packages are more limited. This is sometimes due to the fact that the public healthcare is the only health service in the area. The district hospitals form part of a larger referral system based on the availability of services. The referral system has its own obstacles especially for patients from rural areas who sometimes need to be referred to tertiary services. Amongst the major obstacles to effective healthcare service delivery include the inadequate infrastructure and incomplete or irregular documented medical records. In some of the public hospitals, the structures lack proper ventilation and have a poorly planned physical layout.

The study conducted in the Western Cape Province established that the paradigm shift to information technology has enabled a decrease of hurdles caused by the traditional paper based systems (Adesina et al., 2011). The authors assert that prior to the adoption of ICTs in healthcare service delivery, there were challenges of incorrect recordings of diagnosis, unavailability of patient information, delays in retrieval of medical records, inadequate space for records storage and insufficient personnel.

The acceptance of internet as a useful tool in the health industry has promoted the development of websites by medical organisations. These websites enable the patients' global access to their medical Information. On the other hand, the internet

has also facilitated the use of sensor networks for remote patient monitoring and allows easy access of health information by healthcare professionals. Public hospitals in the Limpopo Province have internet access but some officials like records managers are not connected due to a shortage of resources (Maratha, 2011).

2.6 Legal and Regulatory Framework

The International Standards Organisation (ISO) (2001) recommends that organisations should establish policies that define the implementation of records management programmes as a basis against which to set out their organisational intentions.

Hospitals and other healthcare organisations are subject to health care legislation regulated by the country concerned. The legal status of medical records will differ from country to country. In countries where the hospitals are controlled by the central government, the legal position of medical records is likely to be the same as the other governments' records. The IRMT (1999) states that all medical records are the property of the creator, therefore, medical records created by state funded hospitals will form part of the records of the national government. Most countries have legislations that govern the creation, preservation and recordkeeping of state records. Green (2011) alluded that medical records are legal business records and as such they must be controlled according to accreditation standards, legal principles, professional practice standards, requirements and regulations. In the United States of America for example, The Public Archives Act of New Zealand (2005), for example, requires that offices of the central and local government must

ensure that accurate and full records are created and maintained as evidence of the government's accountability. The government of New Zealand regulates the systematic creation and preservation of public archives and local authority archives to promote the accessibility of records. The use of information technology in the health sector raised fears especially on issues concerning the confidentiality and security of electronic medical records. In the United States of America (USA), the Health Insurance Portability and Accountability Act (HIPAA) was passed in 1996. The Act mandated administrative simplification of regulations that govern the privacy, security and electronic transactions standards for healthcare information (Green, 2011). The United Kingdom (UK) passed the Data Protection Act in 1984 that required healthcare service institutions to take appropriate security measures when handling personal health information (Huston (2001). In addition to the legislations are rules, standards and requirements set out by professional bodies and associations.

In the health sector, professional associations and the national health legislations are responsible for setting standards and requirements on issues relating to the profession. For instance, in the USA, the American Health Information Management Association (AHIMA) developed general guidelines for the content and structure of medical records (McWay, 2008). The AHIMA established clear characteristics that constitute an adequate medical record. Such characteristics consist of sufficient information to identify the patient clearly, to justify the diagnosis and treatment, patient needs assessments, reports on treatment and clinical findings. Mcway (2008) avers that if an event was not recorded in a medical record, it is concluded that it did not occur.

According to the Constitution of South Africa, 1996, all citizens of the country have the right to access healthcare facilities and no one may be refused medical treatment. In terms of records keeping, healthcare institutions are required to adhere to the stipulations of the relevant sections of the Republic of South African Constitution of 1996, the National Archives and Records Service Act of 1996 as amended, the Promotion of Access to Information Act of 2000, the National Health Act of 2003, and the Protection of Information Bill of 2010. The South African National Health Act of 2003 requires that a medical record containing an individual's information be created and maintained. Confidentiality of medical records is taken into consideration by ensuring that any information concerning an individual's health status is not disclosed. The custodian of such records should ensure the protection of medical records and set up control measures to prevent unauthorised access. According to the Health Professionals Council of South Africa (2007), the medical record should be complete, concise and consistent. The HPCSA also sets out the standards and requirements, ethics and rules for the healthcare profession pertaining to the use of records.

2.7 Security and Confidentiality of Medical Records

When records are created they should be accessible or made available to designated people only. Shepherd and Yeo (2003) assert that formal access controls need to be in place to protect confidentiality and security of records. Green (2011) maintain that any information communicated by a patient to a healthcare professional is considered privileged and therefore confidential. Green (2011) argue that patients have the right to confidentiality hence information divulged by a patient

to a healthcare professional should be kept secret. Any information in a medical record is the intellectual property of the patient and healthcare professional treating that individual patient (IRMT, 1999). Disclosing such information to other people who do not have a right to access the information is considered a breach of contract. The records must be protected against loss, damage, unauthorised access, Modification or disclosure. According IRMT (1999), the staff at the medical records office should sign a written undertaking to observe strict confidentiality of medical records. Eike-Henner (2001) maintains that persons working with patient records have a responsibility for maintaining privacy and confidentiality.

Huston (2001) points out that the United Kingdom established the Data Protection Act of 1984 to enforce security measures concerning personal health information. In the 1970s and 1990s, countries like the United Kingdom, Australia, Canada and the United States of America began to introduce bodies of legislations dealing with aspects of data protection and freedom of information. Lederman (2005) argues that the concerns over the increasing importance of data privacy and confidentiality led the United Kingdom to pass the Data Protection Act of 1998 that superseded the one of 1984.

Lederman (2005) states that in 1995 the European Union developed Data Privacy Directive, which sets out eight data privacy principles as follows:

- The data must be processed fairly and lawfully
- It must be held for the lawful purpose originally collected for
- It must be used for health and lawful purposes and disclosed to recognised persons

- Its use must be adequate, relevant and not excessive
- It should be accurate and up-to-dated
- It should be held no longer than is necessary
- It must be accessible to the individual concerned who has a right to have information corrected or erased
- It should be secured.

In 1994, the United States of America passed the Fair Health Information Practices Act that was designed to restrict the use of personal health information. The emergence of electronic medical records raised fears about the privacy, security and confidentiality of medical records. The act was passed to insure privacy protection, security and confidentiality of patient health information.

In the study conducted in Ghana by Williams and Boren in 2008, it was established that there were uncertainties with the integration of Information and Communication Technology into the healthcare sector. There were levels of fear and resistance to change hence the suggestions that patient health information be securely protected by use of password and data encryption to restrict access by unauthorised users. Other common data security methods that are used in protecting the context of health information are cryptography, digital watermarking and steganography. According to Adesina et al.(2011), the data security comprises three basic elements, namely, confidentiality, integrity and availability.

The South African National Health Act of 2003 requires that confidentiality, privacy and security of patient health information be observed. The Act further states that the medical records should be protected and the person in charge of such records should restrict access by unauthorized use. Aligned to the Act is the professional body, HPCSA, which is concerned with the profession's ethics, standards and requirements. Above all these is the Constitution of the Republic of South Africa of 1996, which gives everyone a right to privacy. The United Nations encourages all states to enact the laws that will accord personal information a proper measure of protection (Adesina et al. 2011). The privacy of communication is based on the trust and relationship between the patient and healthcare professional. The South African National Health Act (2003) requires that all the information concerning patients and their health status or stay in a health facility should be treated as confidential.

All the South African hospitals are obliged to operate within this framework but in the recent past there have been some reports by the local press about irregularities resulting to poor control of medical records in some public hospitals in the Eastern Cape Province. Despite the requirements set by the National Health Act of 2003 on the confidentiality of medical records, there were reported cases of poor control of these records. There have been instances in which the information about patient's health has been leaked (*Daily Dispatch*, 2007). This is a clear breach of security and confidentiality of medical records. Ellis (2011) reported that there was an alarming rate of the disappearance of medical records in a Port Elizabeth Hospital Complex. The communication that takes place in the private chambers during a patient and a doctor or healthcare professional should not be violated. The Patients' Charter, as set out by the HPCSA, states that any information concerning one's health and treatment should be treated with confidentiality and privacy.

The protection of the integrity of data ensures the authenticity of the recorded information and it should not be corrupted in anyway. According to the HPCSA (2007), there should be no removal of information from or entry into the medical record. As a means of protecting medical records, the National Health Act no. 63 (South Africa, 2003) does not allow anyone to falsify, add, delete or change any information from a medical record. Moreover, patient health information in the custody of the health facility should keep its originality and authenticity for future use. The Medical Protection Society (South Africa, 2012) states any corrections to be made in a medical record should be done by drawing a single black line to cross out the error and adding the amendments. This should also include the date and the reasons for the late entry. This is to ensure that medical records keep their originality and authenticity.

Lack of security in the management of medical records may expose the records to several dangers including unauthorized access. This is against the confidentiality, privacy, protection and security of medical records rules and guidelines as set out by the Health Act (Act no. 63 of 2003) and the Patients Charter (HPCSA, 2007). The foregoing Act requires that any person who is in charge of a health establishment in possession of a user's medical information must set up control measures to prevent unauthorized access to those records.

2.8 Challenges in the Management of Medical Records

Cramp and Carson (2001) observe that healthcare service delivery is faced with several challenges. They argue that the pressing challenge for the developing countries is the acute shortage of trained personnel against the ever increasing expectations of patients using healthcare facilities. South Africa as a developing country is not immune in this plaque of staff shortages especially in the healthcare sector. In the United States of America, for instance, the amount of patient information on paper medical records caused increase of paper files and that contributed to a lack of central storage system in the hospitals. Medical records were often found in various locations. So, lost or missing medical records make it difficult to offer quality service and the required standard of care. Consequently, healthcare professionals will not have the knowledge about reported drug allergies, previous diagnosis and treatment. This is likely to be costly to the organisation since there is a need to repeat the examination tests and treatment. Further, sharing a patient's medical information in a paper based system is difficult and time-consuming. In essence, patients face difficulties, especially, when they have to visit a different healthcare facility. It is always difficult for any patient to recall all the details of their past medical history or previous medication yet it would be easy with an alternative electronic medical record system. Inaccurate patient health information can adversely impact on the quality of medical decisions and administering of treatment.

Healthcare systems in developing countries have many challenges due to limited resources, double burden of disease and political instability, which adversely affect healthcare service delivery (Ranasinghe et al. 2009). In Ghana, paper files for

medical records consume a lot of space and are costly. Williams and Boren (2008 : 505) concludes that “if a medical record is checked out for another hospital department, another department cannot access a chart” from that medical record. The challenges of this nature cause problems and difficulties to quality healthcare services. The traditional paper medical record system is restrictive as far as the sharing of patient health information is concerned. Paper based medical records are said to be cumbersome, costly, and are easy to misplace. South Africa is a developing country experiencing the same challenges that obtain in Africa as a whole. It has to contend with a shortage of personnel, an uncondusive work environment and tight financial resources. As Minister of Health, Tshabalala-Msimang (2005) avered that the need of financing healthcare and strengthening healthcare system should be seen as an investment rather than a mere expenditure. She identified two interventions that can contribute towards the achievement of the Millennium Development Goals, which are central to strengthening the health system.

A strong national healthcare system is critical in the delivery of healthcare services and continuity of quality healthcare. She also pointed out that the staffing and facility upgrades were important to meeting health needs of the citizens. Marszalek (2006) contends that in developing countries, like South Africa, the major challenge facing the quality of medical records is the constant personnel shortages in both rural and urban hospitals. Thorough documentation is critical in providing an invaluable database on which medical researchers and physicians can base their clinical decision making for diagnostic and treatment purposes. The study further uncovers

that financial constraints and a lack of infrastructural support pose the greatest challenge in some of the South African public health sectors.

The unavailability of proper medical record management systems can lead to adverse outcomes including mortalities that could have been prevented. For instance, in a study conducted at Umthatha in the Eastern Cape, it was found that there were records with certain diagnoses missing. In the Eastern Cape Province there were reports of missing medical records and alterations of medical records in some of the public hospitals (Eastern Province Herald, 2007). These actions on the medical records suggest poor control of medical records management in some of the public hospitals in the Province. The apparent lack of control of medical records in some South African hospitals raises concerns about the security, privacy and confidentiality of health information of an individual patient. In the study conducted in the Limpopo Province, the records management system in the health sector was in a poor state with no proper filing system, insufficient filing space and many files were lost (Maratha, 2011). The Health Act (Act no. 63 of 2003) states that the health information of an individual should be kept confidential and the health status of that individual should be treated as such. As enshrined in the Bill of Rights of the South African Constitution, everyone has a right to privacy.

2.9 Summary

In summary, this chapter gave an overview of the literature in relation to the management of medical records. The literature discussed was in relation to the role of medical records management in the delivery of healthcare services in public hospitals. The records management models were discussed and the study was aligned to records continuum model. All the literature discussed in the chapter was based on the objectives of the study. In the first objective, the focus was in the normal and the best practices on the management of medical records in the state funded hospitals. Globally, hospitals are moving from the manual records management system to an electronic records management system. The preferred electronic records management system is cost effective, efficient and economically for the state especially when looking at the diagnostic tests which are expensive to produce. The chapter examined the infrastructure used by hospitals, for manual and electronic records management system. The legal and regulatory framework that governs and controls the creation, uses, maintenance and preservation of medical records were discussed. Examples of the regulatory framework that controls health institutions in some parts of the world were discussed. The legal framework requires the hospital to operate within the stipulated standards especially in the maintenance of medical records as they are the delicate records that contains confidential information about the state of health of an individual patient. Issues about the security and confidentiality of medical records were reviewed as they are protecting the rights of the citizens as well as to protect the hospitals against any litigation. Lastly, the chapter discussed the challenges encountered as a result of poor medical records management and its impact on the quality of healthcare service delivery.

CHAPTER 3

Research Methodology

3.1 Introduction

The previous chapter covered the related studies that are available on the pertaining to medical records management programmes in healthcare service delivery. This chapter discusses the methodology that was used to carry out a study on medical records management at Victoria Hospital. It provides the methodological approaches adopted by the study. It also describes the research design with details on the study population sampling procedures, and data collection methods. Data analysis procedures are also outlined.

3.2 Brief description of the study area

The Victoria Hospital is one of the public Hospitals in the Nkonkobe Municipality in the Eastern Cape Province. The hospital is situated in Alice town which is 56 kilometres on R63 from King Williamstown. Victoria hospital is an old historically disadvantaged hospital. Hospitals of this category were previously known for their poor service delivery due to the lack of the necessary resources. The lack of resources ranged from inadequate staffing, finances, and physical infrastructure.

Under the new democratic dispensation Victoria hospital is being refurbished. The old dilapidated buildings have been renovated while new building blocks have been built up. The availability of equipment and other important resources has been enhanced. The hospital services the growing population of Nkonkobe Municipality.

All the community clinics from the surrounding areas refer their patients to Victoria Hospital for healthcare service they do not have capacity to offer. Patients are given referral letters that outline the nature of the health problems that need the attention of the physicians using more advanced methods of healthcare.

The researcher gained access to the hospital through the gatekeeper and directed to the hospital manager's office. The Hospital Manager introduced the researcher to the Hospital Records Administrator. According to Neuman (2011) field research occurs in a particular setting controlled by gatekeepers. Gatekeepers are usually people with formal or informal authority to control access to the site and a researcher must establish rapport and trust with participants for easy interaction. A letter of introduction requesting for permission was handed over to the hospital records administrator (See *Appendix F*) who introduced the researcher to the hospital employees especially those dealing with medical records keeping.



Figure 3. 1: Road map to Victoria

3.3 Research Methodology

This study employed both qualitative and quantitative approaches. The rationale for using both qualitative and quantitative approaches is to collect sufficient data to explain the aim of the research. The use of both approaches help to gain advantages of both qualitative and quantitative approaches and make up for the disadvantages and weaknesses of each. According to Creswell (2003) the use of both approaches tends to improve the quality of research as the weaknesses of one approach is covered by the strengths of the other method. A combination of more than one research approach or triangulation in this research gave the researcher the opportunity to collect numeric data and the feelings, opinions, and interpretations of both the providers and user of the healthcare services based on the management of medical records at Victoria hospital.

The mixed methods approach was also used by Maratha (2011) in his study about records management in service delivery in the health sector in the Limpopo Province

3.3.1 Qualitative Approach

A qualitative research as explained by Sarantakos (2005) offers thick descriptions and allows entry to subjective social constructions of people by presenting information gathered verbally in a detailed form. Leedy and Ormrod (2005) explained the qualitative research as an approach that focuses on a phenomenon that occurs in its natural setting and seeks to observe the phenomenon in its complexity. In which case qualitative research seeks to understand reality holistically as part of research process and subjectivity exists only in reference to the researcher (Wimmer 2002). Qualitative studies are concerned with the subjective perception of reality and

employ naturalistic type of inquiry ((Sarantakos 2005). Ngulube (2005) argues that qualitative research involves data collection methods like focus group, observation, in-depth interviews and case studies.

Qualitative research approach believes that human behaviours are fundamentally different and cannot be pigeonholed. Bless Claire, Higson-Smith (2006) describe qualitative approach as the approach that uses description and qualifying words to record the aspects of the world. Powell (1997) asserts that qualitative research applies holistic and natural approach to the resolution of a problem and therefore it can be useful especially in exploratory studies. The authors state that qualitative methods help to record kinds of information that could not be adequately recorded using quantitative methods. Qualitative data collected during the study sought to investigate the effectiveness of medical records management programme at the Victoria Hospital. This was measured through various ways such as, for example, the awareness by the service providers of the importance of medical records management and its impact on healthcare delivery. From user's perspective, it is important to find out how the retrieval process or missing records delays and affected the timing of healthcare service delivery.

3.3.2 Quantitative approach

According to Leedy and Ormrod, (2005) quantitative research seeks to answer questions about relationships among variables with the purpose to explain, predict and control the phenomenon. Quantitative research is concerned with the objectivity that exists apart from the researcher. Wimmer (2002) points out that in a quantitative research the reality can be divided into component parts and is capable of being seen by all. In studying human beings the quantitative approach believes that human

behaviours are basically similar and looks for general categories to summarize their feelings.

Sarantakos (2005) believed that quantitative methods are always geared to documenting subject attributes expressed in quantity and to measure variables to produce figures which will allow judgements to the status of the variable in question. In support of this Ngulube (2005) asserts that quantitative research depends on statistical and mathematical techniques. The most common data collection methods used in quantitative research are questionnaires and structured and unstructured interviews.

3.4 Research design

Every type of empirical research explicitly outlines the research design. Research design as defined by Yin (2009) is a logical plan that connects the empirical data to the study's research question and to its conclusion. Research design outlines the study population, sampling procedures, study sample, data collection methods and instruments, and data analysis. The research design employed by the study is an explanatory case study. Yin (2009) describes the case study as an inquiry that investigates a contemporary phenomenon in its real life especially when the boundaries between a phenomenon and context are not clear. The study triangulated qualitative and quantitative approaches. In this both qualitative and quantitative elements were given equal status concurrently and data collected simultaneously. The qualitative design took the form of a cased study whilst a mini survey complimented a quantitative design. Triangulation was used to get a deeper qualitative meaning of the management of medical records in relation to the delivery

of healthcare services in Victoria Hospital. Triangulation was used as a strategy to emphasise that the data interpretations were credible. Through triangulation, the researcher was able to get more than one source in a single point and find multiple perspectives.

3.4.1 Population

Neuman (2011), and Bless and Higgon-Smith (2006) describe population as a large group of elements from which a researcher draws a sample and to which results from a sample are generalized. Babbie (2013) added that every element that meets established theoretical definitions has a chance of being selected in a sample. The population of the study is considered as one of the fundamental steps in the study design. Ngulube (2005) asserts that researchers have to carefully and completely define the population and describe the elements of the study before sampling. define population as a set of objects or people where the research is focused about which the researcher wants to determine the characteristics. The population of this study was drawn from Victoria Hospital in the Eastern Cape, South Africa. The targeted elements of the study were the providers and users of the service.

3.4.2 Sampling procedure

Bailey (1994) defines sampling as a subset or a portion of the total population, and therefore the sample should be viewed as an approximation of the whole. According to Bless and Higgon-Smith (2006) a sample is a subset of the whole population which is actually investigated and whose characteristics will be generalised to the entire population.

The study employed both the probability and non-probability sampling methods. This was necessitated by the fact that the researcher wanted to achieve both the quantitative and qualitative results in the study. Maratha (2011) also used both methods of sampling.

In probability sampling each member of the population has equal chance of being selected into a sample (Bailey, 1994). On the other hand non- probability sampling method is used in selecting a sample that is convenient or believed to comprise elements that will be easily accessed or may have the relevant knowledge or information important to the study.

Non probability sampling technique known as the purposive sampling was employed in selecting participants from the service provider. According to Bless and Higginson-Smith (2006) the purposive sampling is focused on the researcher's judgement regarding the characteristic of the sample. Bailey (1994) asserts that the purposive sampling allows the researcher to pick only those respondents that will best meet the purposes of the study. In this study purposive sampling, a non- probability method technique, was used to select participants from among workers in Victoria Hospital.

The researcher used random sampling, a probability sampling technique was used to select sample from patients that visited the hospital during the study for healthcare services. The researcher used the registration register that is normally used by the clerks to record each coming patient. These patients were selected regardless of their gender since they were all patients. The selected participants were interviewed immediately after selection using a structured questionnaire. The immediate interview was due to the fact that there was no guarantee that selected participants would revisit the hospital during the duration of the research. The random sampling

was also used to select participants from the healthcare workers. The purposive sampling method was used to select the key informant whom was known to be knowledgeable to provide information for the study.

3.4.3 Sample size

Selected participants included thirty healthcare users (patients), five records clerks, one doctor, four senior nurses and one key participant. The key participant of the study is the Hospital Records Administrator. The Hospital Records Administrator was believed to be the knowledgeable person to provide qualitative data through triangulation.

3.5 Data collection methods

Data collection methods refer to the methods used in collecting data from the respondents. According to Neuman (2011) it is up to the researcher to choose the most appropriate method that will provide answers to the problem being investigated.

In the current study, both qualitative and quantitative data collection methods were utilised. According to Creswell (2014) qualitative data entails the use of open-ended questions whilst quantitative data collection methods tend to use closed –ended questions. This is achieved by developing or adopting appropriate data collection instruments.

3.5.1 Questionnaires

Questionnaires are the most convenient data gathering tools used in social research. (Leedy 2005) believed that the use of questionnaires is less expensive since they can be sent to a large number of people without the researcher having to go by him

or herself. (Sarantakos 2005) argue that questionnaires vary depending on their nature and the manner in which they are administered. Questionnaires are categorized into two broad types, namely, closed and open-ended questionnaires. Questionnaires are mostly handed in to the respondents by hand or sent to respondents by mail.

In this study the structured and semi-structured questionnaires were used as primary tools to collect data from the participants either working at the hospital or visiting the hospital for healthcare service. Both closed and open ended questions based on the objectives of the study were included in the questionnaires.

According to (Wimmer, 2011) the use of open- ended questions allows the respondents to give answers that the researcher did not foresee in designing the questionnaire. This type of questions provides respondents an opportunity to give in-depth responses.

In this study the researcher used a structured questionnaire to collect data from participants selected from amongst the healthcare users at Victoria hospital while a structured questionnaire was used to interview participants selected from amongst the users of healthcare services at the hospital. The key informant was interviewed using an unstructured questionnaire. The interviews were conducted at the Out Patients Department (OPD) where the participants were either waiting for their treatment or prescriptions from the dispensary.

In the case of participants selected from the service provider structured questionnaires were administered to the participants. The questionnaires were divided into sections A,B,C,D and E. This type of questionnaires allows respondents to express their answers the way they see appropriate and in their own words.

According to (Sarantakos, 2005) these questionnaires allows respondents to express their feelings and thoughts especially when studying complex issues that seek understanding and logic of respondents.

3.5.2 Interviews

Interview as data collection tool can be used in both qualitative and quantitative research. (Sarantakos, 2005) describes interviews as a questionnaire that is presented verbally to the respondents; moreover, questionnaires constitute the structure of an interview. Interviews are mostly considered to be the obvious way of finding information from someone who may be able to provide such information. Powell (1997) opines that both questionnaire and interview construction use similar techniques. As in the case of questionnaires, interviews consist of structured and unstructured types. Structured interviews are used in quantitative studies where the interviewer strictly adheres to the order and wording of questions while unstructured questionnaires are meant to give a guideline to the researcher in conducting an interview. In this type of questionnaire, researcher has the opportunity to probe the responses from the participant by raising questions that were not anticipated before the interview (See Appendix D).

This study used unstructured questionnaire to interview the key informant and in particular to obtain unexpected insights ((Gorman and Clayton, 1997).

Interviews were conducted with participants selected from amongst users of healthcare services using a structured questionnaire (Appendix B). This was

considered important in view of the fact that the researcher has no prior knowledge of the literacy status of the participants. It was thought unnecessary to probe into their literacy status as they have come to seek for healthcare services and this could be unethical as their access to healthcare service had no connection with literacy status. A semi-structured questionnaire was used to interview the hospital records administrator (Appendix A). The interviews were done as follow up to obtain clarity on the responses given on the questionnaires (Appendix D). Also the clarity seeking questions were asked during the interviews with the hospital administrator. Initially the researcher administered the unstructured questionnaires to the records clerks as they are the people working with medical records on a daily basis (Appendix A).

3.5.3 Observation

Bailey (1994) defines observation method as a data collection technique that uses nonverbal behaviour that, amongst other things, involves human senses of hearing, sight, touch or smell. There are two commonly known types namely participant and nonparticipant observations. This data collection technique is commonly used when researcher studying behaviour that occurs in some particular setting. In the current study the researcher used nonparticipant observation during the data collection process. One of the advantages of observation technique is its potential to observe human behaviour in its natural environment and allows the researcher to discover the behaviours that the respondents are not even aware of (Bailey, 1994). In data collection the nonparticipant observation allows the researcher to get first-hand information by merely taking field notes, recording salient features of behaviours in their totality without interfering with the observed participants. In the current study as

the researcher observed planned to observe various things including activities pertaining to records creation, retrieval, storage, and security.

3.6 Validity and reliability of the study

Bailey (1994) describes the validity as a concept concerned with how accurately the measuring instrument is actually measuring the concept in question and not something else. Reliability is concerned with consistency in measures and therefore reliability is the degree to which the measuring instrument produces equivalent results for repeated trials (Bless and Higginson-Smith, 2006). Reliability entails stability of scores and a reliable instrument is the one which produces same scores when used to measure an unchanging value. Ngulube (2005) maintains that validity in social science research is one of the necessary foundations and if a research lacks validity it does not add value to the knowledge of the society. The combination of data collection methods in the study was used to ensure that all questions were based or responded to the aims and objectives of the study. The researcher used triangulation to examine evidence from the data sources to build coherent justification for themes.

3.7 Data analysis

During the process of data gathering in a field research, researchers collect a great deal of data. The data collected need to be analysed and interpreted. The qualitative data collected in the field research may be in the form of text or documents, observational notes and open-ended interviews transcripts whilst in the quantitative

studies the data is exclusively in numbers. Neuman (2011) states that in qualitative approaches, data analysis tentatively begins while collecting data. Data analysis is a systematic organization, integration and examination of data in search of patterns and relationships and connects particular data to concepts, identifying broad trends and themes (Neuman, 2011). Both quantitative and qualitative data collected from the field were categorized and coded in preparation for analysing using the Statistical Package for the Social Sciences (SPSS). The outcome of the analysis is presented in the chapter four of this study.

3.8 Ethical considerations

Ethical issues in research are very important. Leedy and Ormrod (2013) consider important areas of ethical issues in research to include protection from harm, informed consent, right to privacy, and honesty with professional colleagues (Appendix I). These scholars further opine that in recruiting the study participants, the researcher should tell them the nature of the study to be conducted and extend the choice of participating or not to participate. In conducting the study, the researcher should ensure that the respondents were free from harm and the information gathered will be strictly used for study purposes. The respondents must also be assured that their participation in the study as being strictly voluntary and be requested to sign informed consent form. The respondents must also be assured of anonymity and confidentiality. At the time of this study the issue of ethical clearance certificate by the University of Fort Hare has not been regularized. However the researcher was to request for consent from the hospital management to conduct research at the Victoria hospital (See letters, Appendix E, F and G).

3.9 Summary

In summary, the chapter gave an outline and the background of the research site. The chapter introduced the hitherto status situation of the study area. The chapter discussed methodology employed in the study. Both qualitative and quantitative research methods were discussed in the chapter. This chapter presented the research design followed to collect data. The population, sampling and sampling techniques used were explained. Sampling technique used in selecting the participants were looked at in this chapter. The chapter discusses data collection methods used like, questionnaires, interviews and observation. Also validity and reliability concerns to authenticate the study were dealt with in this chapter. This chapter explained the methods into which the collected data was analysed to give a meaningful value. Lastly, this chapter discussed ethical consideration comprising of human rights, informed consent and the letters allowing the researcher to be on the site. The collection of data was only focusing on the management of medical records not the entire hospital records.

CHAPTER 4

Data analysis and presentation

4.1 Introduction

This study sought to explore the role of medical records management in healthcare service delivery by public hospitals in the Eastern Cape Province using Victoria as a case study. This chapter presents the findings of the study. Data was collected from sampled workers and patients at Victoria Hospital.

4.2 Section A: Demographic Characteristics of the Study Participants

4.2.1 Profile of Participants

Eleven healthcare workers and thirty users of healthcare services at the Victoria hospital took part in this study.

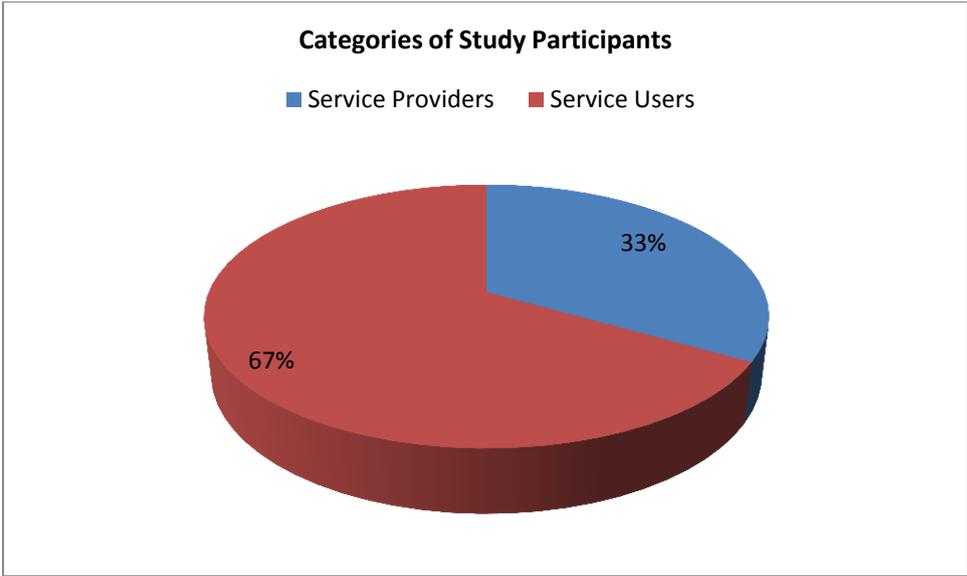


Figure 4.1: Categories of Participants

4.2.2 Gender of Service Providers

The gender distribution of the service providers study participants is outlined in Figure 4. 2. The majority (55%) were male while the rest (45%) were female.

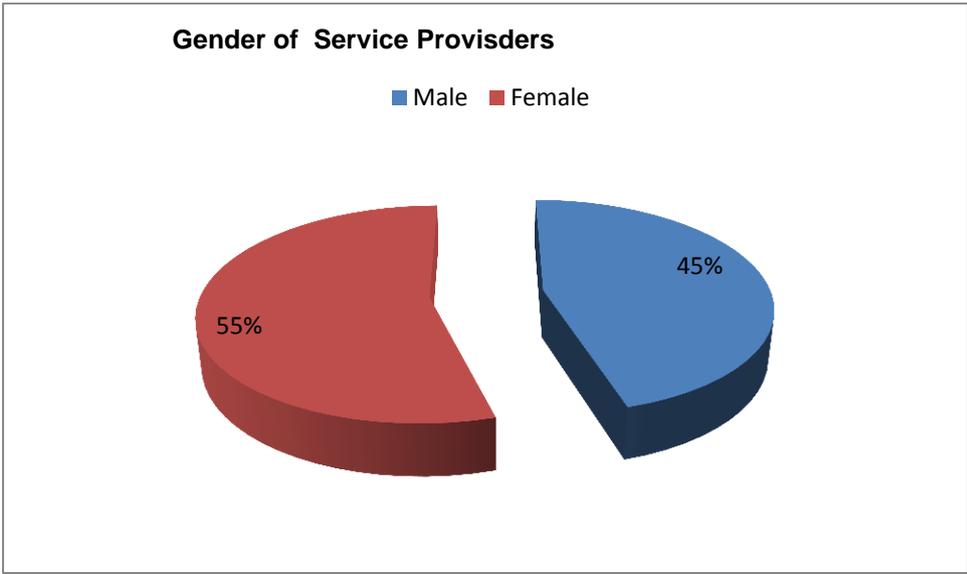


Figure 4.2: Gender of Service Providers

4.2.3 Gender Distribution of Service Users

The study had 16 (53%) female and 14 (47%) male participants. More females than males used the service during the time the study took place.

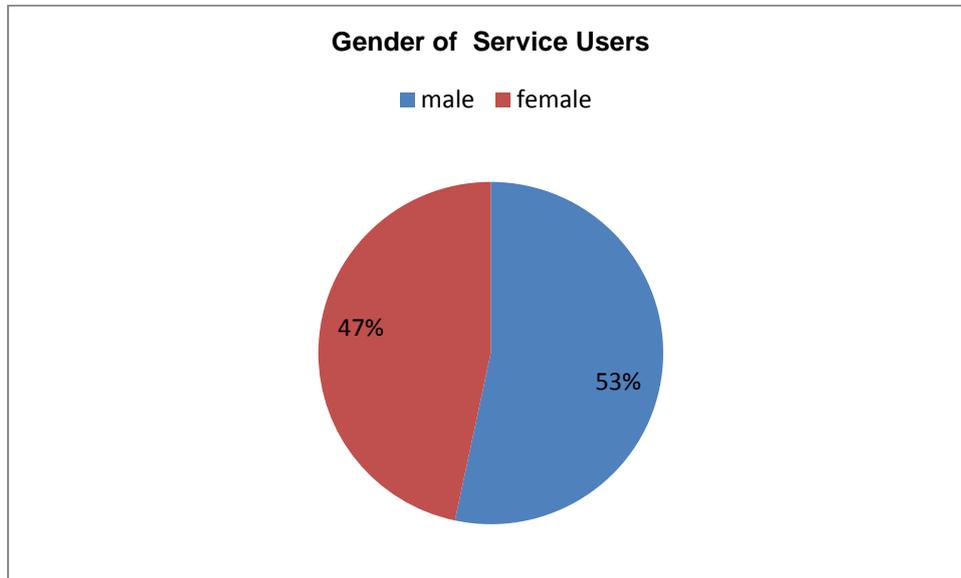


Figure 4.3: Gender Distribution of Service Users

4.2.4 Age Distribution of the study participants

The age ranges were used to categorise the sample of study participants. Two (5%) participants were between 15 and 25 years; eight (19%) between 25 and 35 years; twenty (49 %) between 35 and 45 years; and eleven (27%) were over 45 years. The age range started at 15- 25 years because the study targeted the users who can use healthcare service without the assistance of parents or guardians.

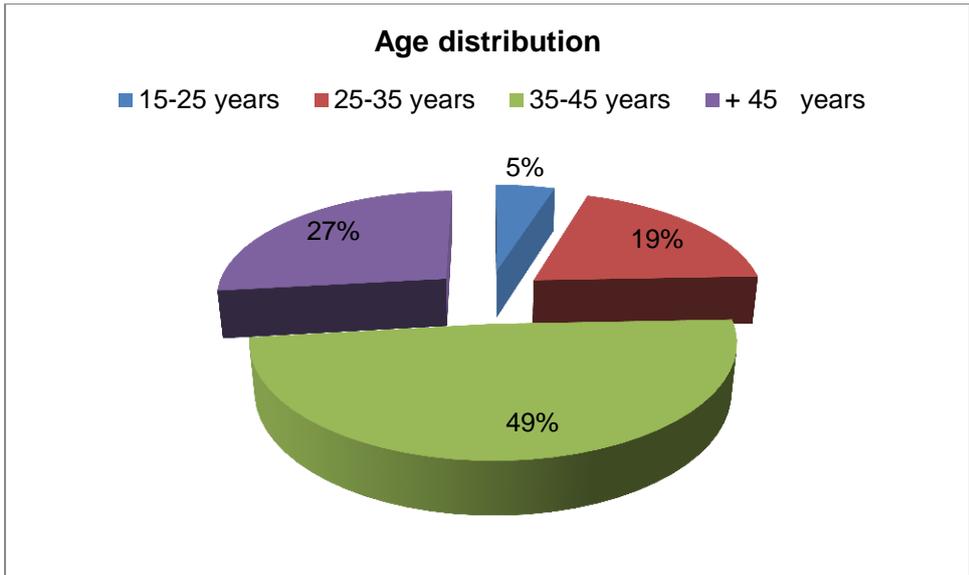


Figure 4.4: Age Distribution of Participants

4.2.5 Level of education of the service providers

The service providers study participants were asked to indicate their level of education. Four (37%) respondents indicated to have degrees, 3 (27%) had diplomas, 3 (27%) had matric, while 1 (9%) did not indicate level of education. The level of education was considered important for work performance and improved service at the workplace.

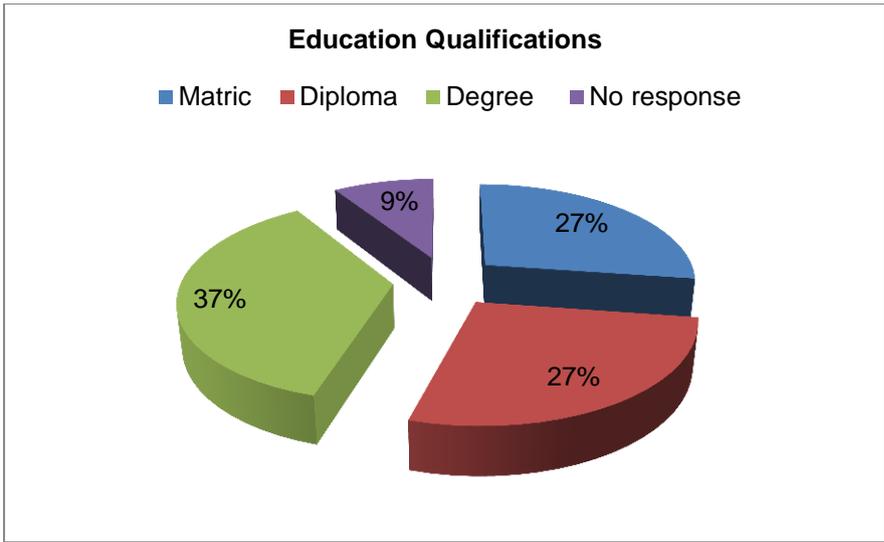


Figure 4.5: Education Qualifications

4.2.6 Training received

The researcher sought to know the competences of the service providers to perform their duties. Respondents were asked to indicate if they had been trained for the tasks and duties they are required to perform: Six (55%) respondents indicated to have gone for training while 5 (45%) had no training (Figure 4.5).

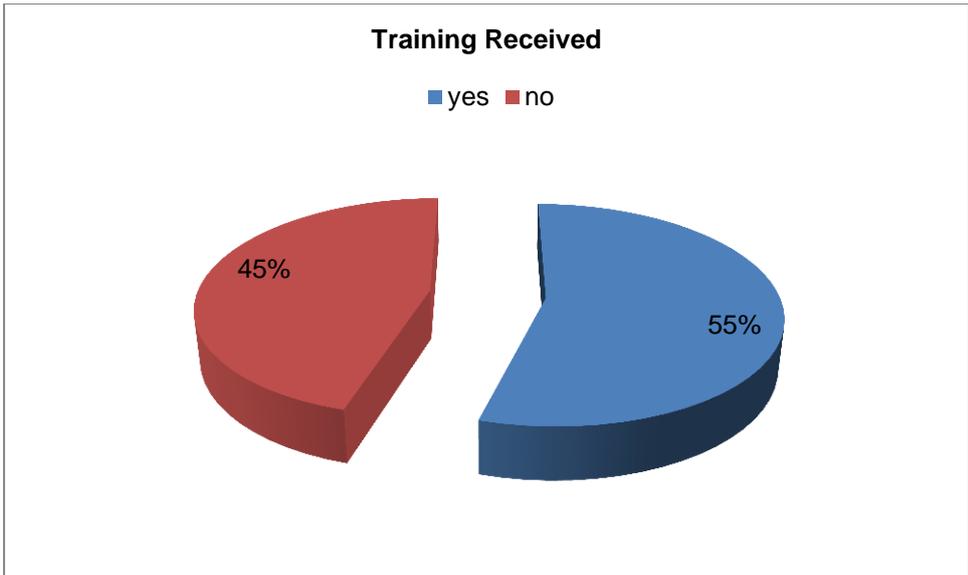


Figure 4.6: Training Received

4.3 Section B: Medical Records Management Practices

4.3.1 Record Creation

Hospitals create records on a daily basis to support their activities and transactions. The researcher sought to find out about the creation of medical records at the hospital. Two of those who perform this task did not respond to the question whilst three explained how medical records are created at the hospital. Medical records at this hospital are manually created using a clean folder to register service users (Figure 4.7). The patient is required to pay a registration fee of R20, show his/her Identity Document (ID) and a referral letter from a local clinic. The medical record contains a patient’s personal and medical information. The process is completed by giving a patient a card which should be produced during the next hospital visit. After creating a record, a patient waits to be examined.

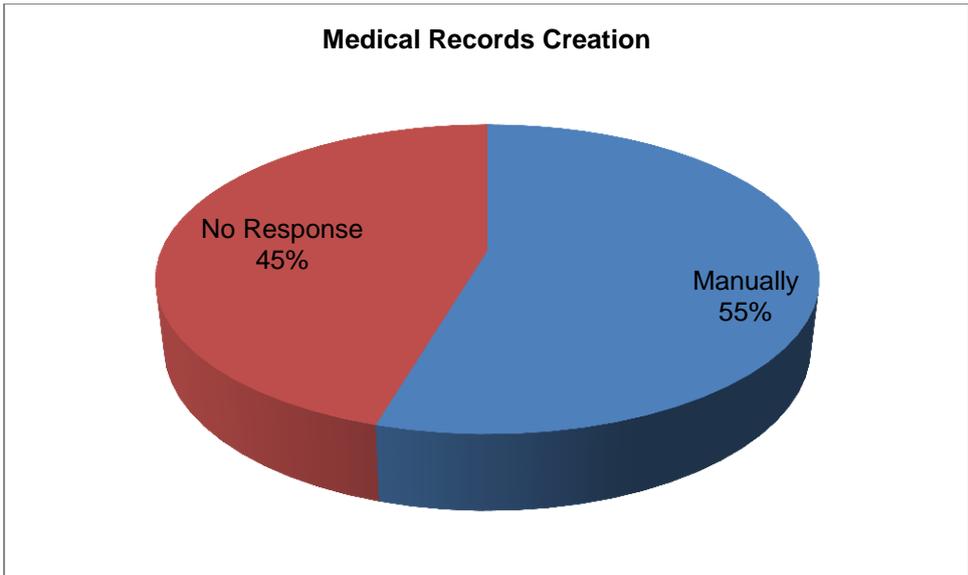


Figure 4.7: Medical Record Creation

The researcher asked the hospital users about the processes required from them when visiting the hospital for the first time. All 30 service users indicated that they are required to present their Identity Documents, pay a fee of R20.00 and have their personal information written on the folders. The users also mentioned that they are required to bring referral letters from their local clinics detailing the nature of illness that needs the attention of the hospital. The referral letter forms part of the medical record.

To verify the information obtained from both service providers and user study participants the researcher asked the hospital records administrator whom the researcher was referred to by the hospital manager about the creation of records. The hospital administrator confirmed that the medical records are created manually. The researcher observed that at the entry point is the registration desk where registration is done or verified.

4.3.2 Rate of medical records creation

The researcher sought to establish the rate at which the medical records are created on a daily basis. Eight (73%) respondents indicated that medical records that are created on a daily basis are more than twenty, whilst 2 (18%) said that the daily record creation is between 15-20 medical records. One (9%) respondent did not answer the question. To verify the rate of record creation, the researcher asked the hospital records administrator to shed some light on the matter. The hospital administrator indicated that the hospital creates more than twenty medical records each day. He also stated that on Mondays the hospital receives more patients (*ngoMvulo izigulana zibazininzi*) than other days of the week and therefore the number of records created tend to be more than 20 since it is the beginning of the week (see the figure 4.8). The researcher observed that the number of records created on each day is more than twenty since the hospital services communities of the Nkonkobe Municipality and it serves as a referral from the local clinics.

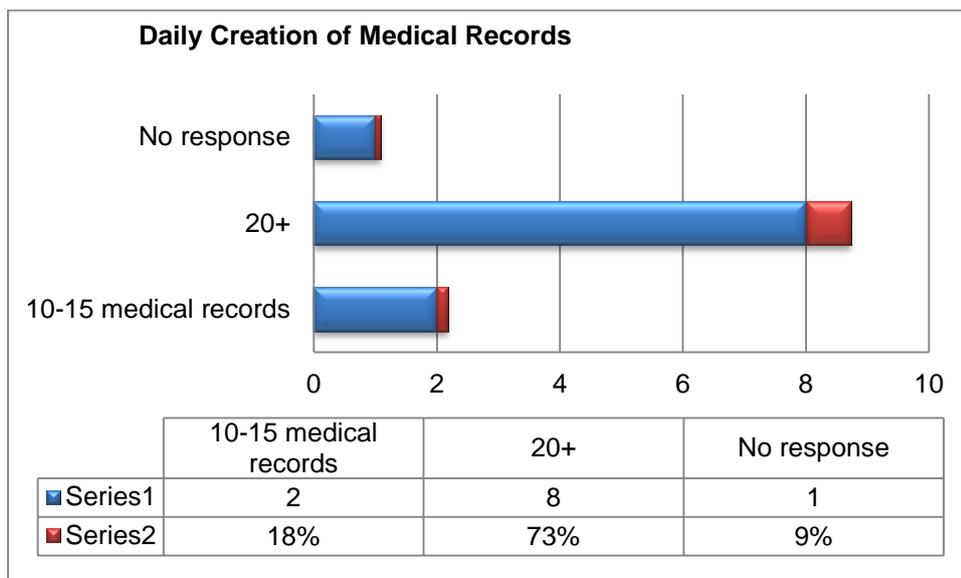


Figure 4.8: Daily Medical Records Creation

4.3.3 Retrieval of medical records

The International Records Management Trust (1999) recommends that each patient visiting the hospital for the first time be assigned a unique number. This number is to be used for identifying the patient's folder whenever that individual revisits the hospital as an outpatient or is admitted as an inpatient. The retrieval of medical records is always regarded as a priority in the healthcare sector, especially, for healthcare service delivery (Bleich & Slack 2010). The researcher sought to determine the systems and tools used for retrieving medical records when patients visit the hospital. The respondents were asked to indicate the procedure used to retrieve medical records.

Eight (73%) respondents indicated that medical records are retrieved manually. Three (27%) respondents did not answer the question (Figure 4.9). The researcher observed that patients first report at the reception desk where they collect their hospital cards for the retrieval of their medical records. If the clerk is not at the counter at that particular moment, the patients drop the cards in a small box at the counter for the attention of and action by the clerk when coming back at the counter.

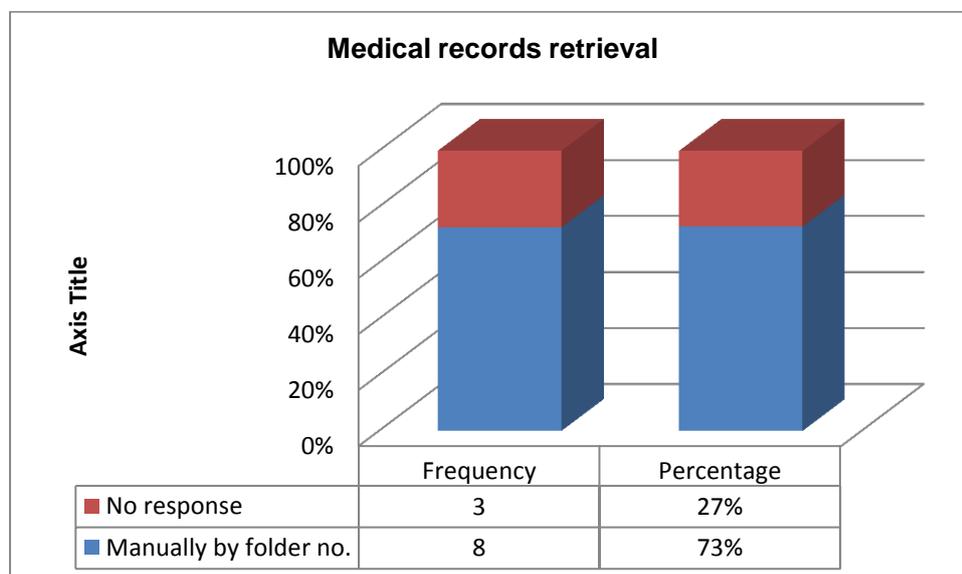


Figure 4.9: Medical Record Retrieval

4.3.4 Missing medical records

Medical records are very important for healthcare delivery as healthcare practitioners rely on them to make decisions. Ting et al (2011) point out that missing medical information makes it difficult for healthcare practitioners to provide the required healthcare. For this reason, the researcher sought to investigate the efficiency of the current records management system at the hospital in the retrieval of medical records. The respondents were asked to describe the procedure followed when the patient folder is not located. Six (55%) respondents indicated that they search for the folder at all the service points until they find it. Two (18%) respondents indicated that a new folder is opened while 3 (27%) did not respond to the question (Figure 4.10). Those who indicated that a temporary record is created explained that the creation of a temporary record is necessary to keep healthcare service delivery going rather than spending more time searching for a missing record. They pointed out that records clerks continue searching for the original folder and when the original folder is ultimately located, both folders are combined to form one folder. The researcher sought clarity from the hospital administrator who confirmed that temporary medical records are created in the event the original cannot be retrieved when it is required. The hospital administrator emphasised that the search for the original normally continues until it is located and then merged with the temporary record.

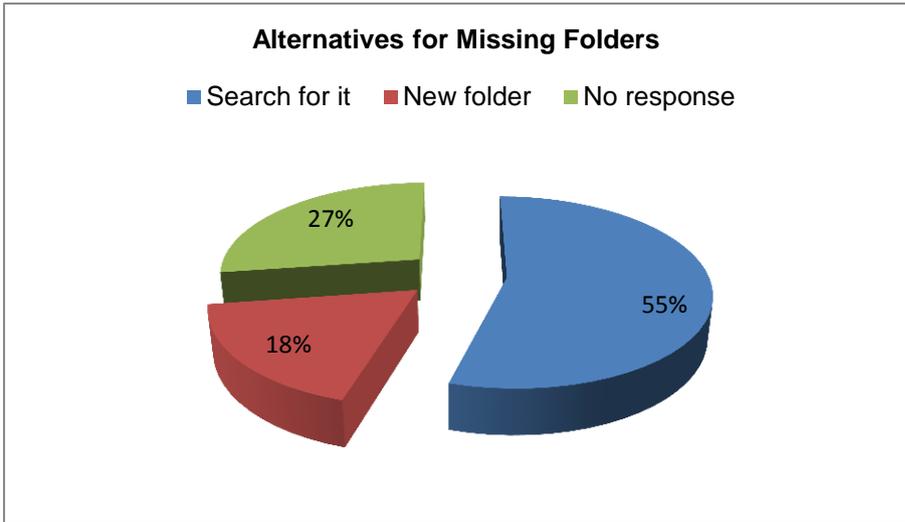


Figure 4.10: Alternatives for Missing Folders

4.3.5 Replacement of missing folders

The researcher also sought to investigate the frequency of misfiled folders that lead to the creation of folders each time the patient revisits the hospital. The respondents were asked to indicate if it was proper to create a new folder when the previous folder could not be located. Six (55%) respondents indicated that it was not proper to create a new folder when the previous folder is not found whilst four (36%) respondents indicated that it was proper to create a new folder when the previous folder was not found. In an ideal situation, a medical record should always be available whenever is needed. This is due to the fact that proper patient care, continuity of patient care and the quality healthcare service depends on the availability of patient health information history. The researcher further probed the respondents to advance reasons for their answers. They said that, as a rule, a new folder is created when the previous folder is not located and, by so doing, they minimise the waiting period. However, the staff keeps searching for the original

folder until it is found, and attached to the newly created folder/s. One (9%) respondent did not respond (see Figure 4. 11).

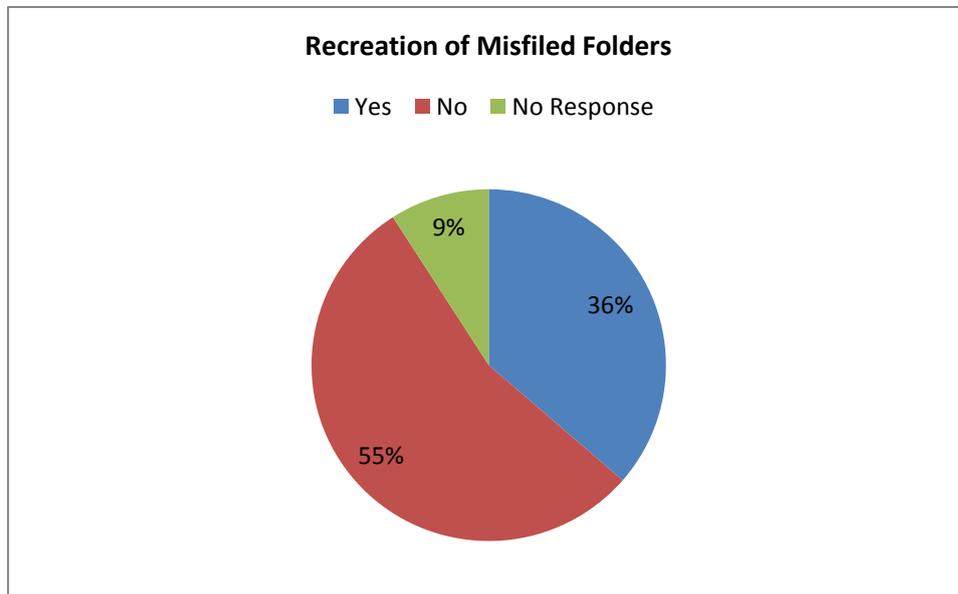


Figure 4.11: Recreation of Misfiled Folders

4.3.6 The effect of new folders on patient healthcare

The researcher had to critically examine if there is any negative impact caused by the creation of a new record as a replacement of the original folder. The respondents were asked to state the effect of new folders on the continuity of care and healthcare service delivery. All 11(100%) respondents pointed out that the creation of new folders should be a last resort since part of a patient's medical history would be untraceable in the absence of the original folder. The Hospital Records Administrator pointed out that the creation of a temporary folder should be a last thing to consider since patient health history and the chronology of diagnosis and treatment is documented in the original folder. The Hospital Records Administrator mentioned

that the unavailability of the critical information contained in the original folder can adversely affect the healthcare and treatment a patient with a missing file may receive.

4.3.7 Length of retrieval time

The speed of service is one of the key components of any service delivery. Hartmann and Sooklal (2012) argue that excessive waiting periods in hospitals are often caused by the wasteful processes before or after treatment. This is often caused by the time spent in locating the medical records of patients. The respondents were asked to determine the length of time spent in retrieving an individual patient folder. Out of 11 respondents, 9 (82%) indicated that it takes approximately 5 minutes to retrieve a folder while one (9%) surmised that it takes 10 minutes yet another one (9%) speculated around 15 minutes. (See Figure 4. 12).The researcher observed that the retrieval of folders is generally quick except for those users who revisit the hospital after a long time. It is probable that their records may have been placed outside the office holding current records.

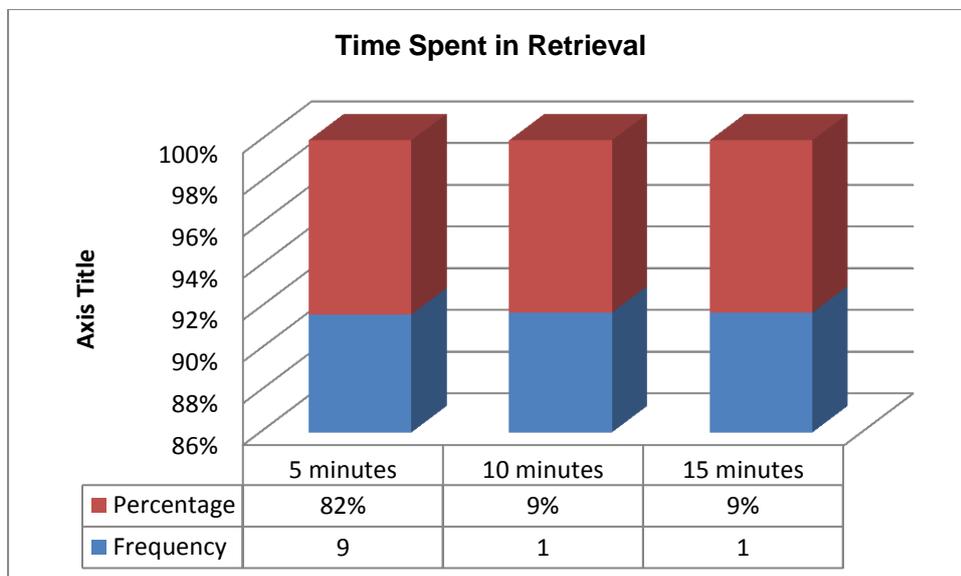


Figure 4.12: Retrieval

4.3.8 Waiting Period for Service

Noon (2003) posits that the time factor is important in healthcare delivery. He maintains that healthcare organisations must strive to balance customer demands as excessive delays may delay diagnosis and therefore put the patient's health at risk. When the service user study participants were asked if they got their folders on time when reporting to the registration point, twenty (67%) indicated that their folders were retrieved quickly while ten (33%) indicated to have waited longer for their folders to be retrieved (Figure 4.13).

An interview with the Hospital Records Administrator revealed that the retrieval of folders should take approximately 5 minutes except on very busy days.

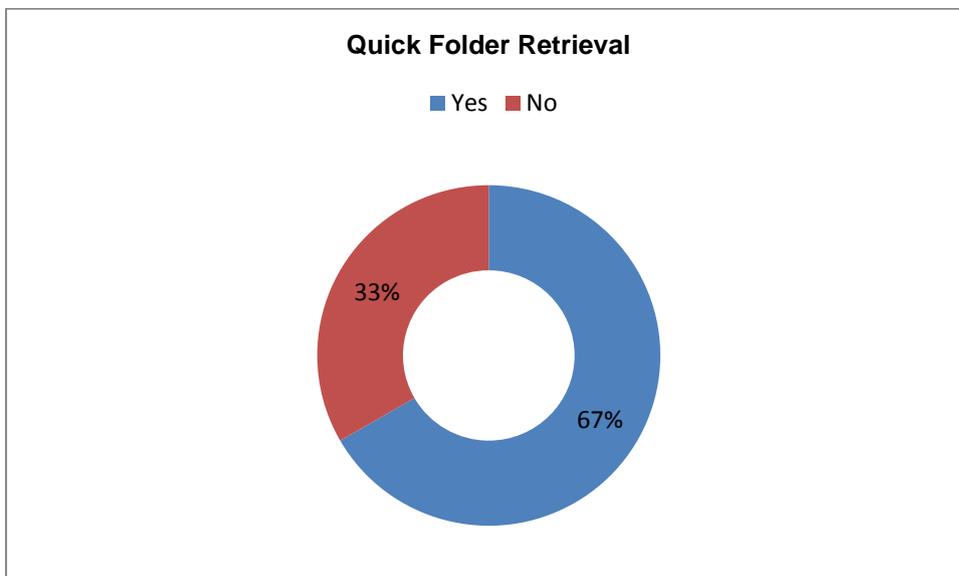


Figure 4.13: Waiting for Service

4.3.9 Collection of medical records

The researcher wanted to establish the control and collection of patient folders from within different hospital units until they reach the storage place. The respondents were asked if there were people responsible for the collection of medical records from different hospital departments. Five (45%) respondents indicated that the clerks were responsible for the collection of folders from different units of the hospitals while six (55%) said that the nurses are responsible for collecting patient folders from dispensary and from the wards, and returning them to the central storage records unit. Three participants pointed out that the collection of folders is the responsibility of both nurses and clerks (Figure 4.14). An interview with the hospital records administrator confirmed that it is both the clerks and nurses who collect folders from the various treatment units and take them for filing and safe keeping in the central records unit. He further added that folders need to be at their storage place at all times and therefore have to be collected from different units of the hospital. However, if at some point a patient is admitted to the hospital wards, when discharged the folder is left in the ward. It is the duty of the nurses to collect such a folder and return it to the folder unit where folders are filed and kept.

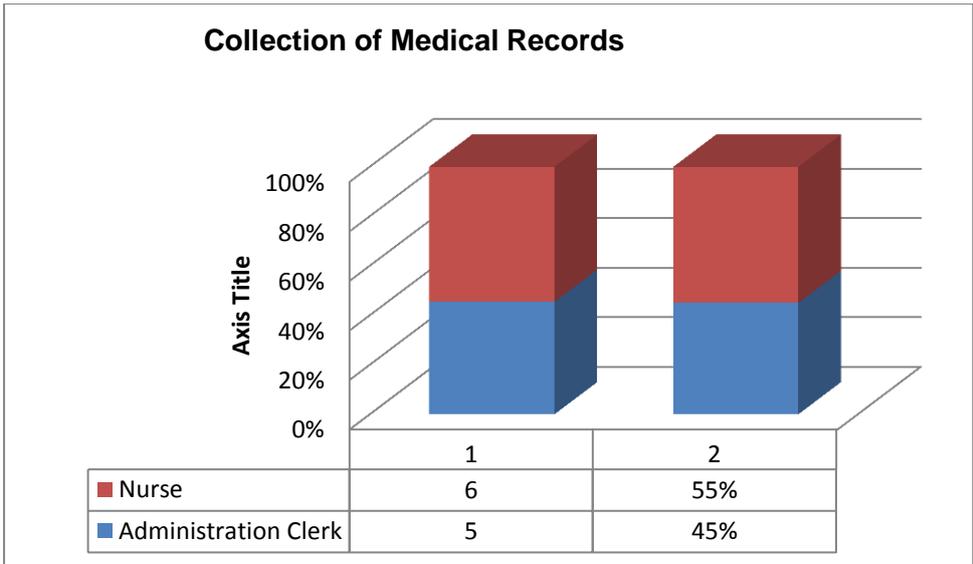


Figure 4.14: Collection of Medical Records

4.3.10 Frequency of records collection

The researcher had further to determine from the respondents the frequency at which patients’ folders are collected from all the units of the hospital. It emerged that seven (64%) said that folders are collected daily, yet two (18%) contended that collection was done hourly. 1 (9%) respondent said that folders are collected weekly and 1(9%) was not sure (See Figure 4.15). The Hospital Records Administrator confirmed that folders are collected daily from various hospital units to be filed and stored in one central place. He pointed out that this was necessary as some patients leave their folders in the dispensary after collecting their prescriptions, while others leave them in the physician’s room. Folders for discharged patients are also left in the wards. The researcher observed that patients go to dispensary to collect their medical prescription and they are required to leave their folders to be collected by the nurse or the clerks.

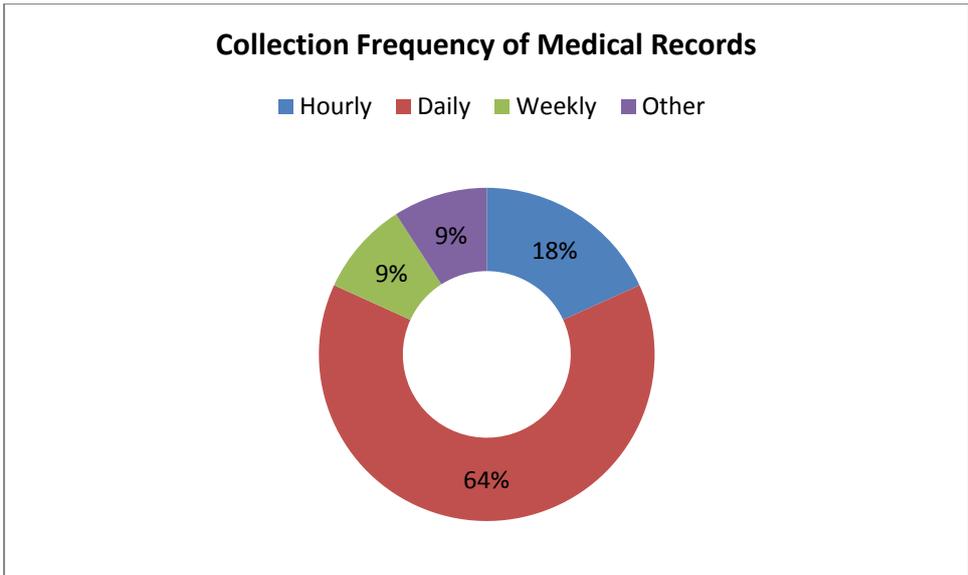


Figure 4.15: Collection Frequency of Medical Records

4.3.11 Filing of in-patient and out-patient folders

According to the IRMT (1999), the hospital wards may produce large quantities of records and may decide to maintain their records either centrally or in the wards. Hospitals generally have two types of patients; in-patients and out-patients. The researcher sought to find out whether the two categories of patients' records were filed and kept separately. Seven (64%) respondents asserted that the storage of in-patient and out-patient records is not separate. Three (27%) respondents stated that the storage of these folders is separate. The respondents stated that the in-patient folders are kept in the wards until the patients are discharged from the hospital. 1(9%) did not respond. This was verified by the Hospital Records Administrator who indicated that the hospital is using a centralised records registry system. The folders for in-patients remain in the wards until the patients are discharged, after which they are collected to be filed and kept in one central place. The researcher noted that all

folders are kept in one centralised storage place. When the patient is admitted to the hospital wards, then the folder will be kept in ward after the patient is discharged the folder will be taken back to the central storage place (See Figure 4.16).

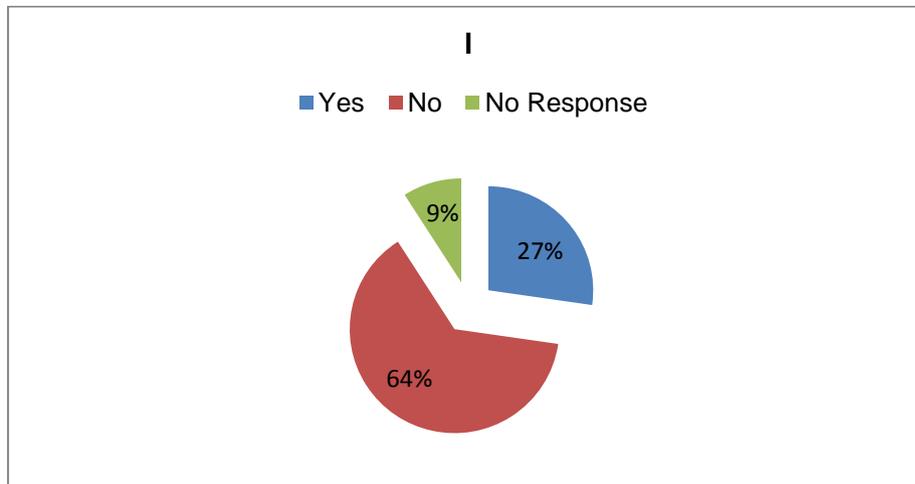


Figure 4.16: In-patients and Out-patients Folders

4.4 Section C: Infrastructure for the management of medical records

4.4.1 Registration of patients

The study also sought to establish the type of material and tools used for patient identification. The respondents were asked to state if there was proof of registration given to patients to have a unique identity. The results were that ten (91%) respondents stated that a confirmation of registration in the form of a hospital identity card is issued to the patient. Only 1 (9%) respondent did not respond.

As the issue of patient identification is a crucial element in the healthcare service, it was imperative for the researcher to observe the phenomenon. The researcher observed that after registration, each patient is given a card with a number similar to

the number on top of the folder. The card is used each time the patient visits the hospital. As some patients are referred to the hospital by their local clinics , they are expected to bring along their small books from their clinics. The folder number written on the card will also be written on that small book or patient held record used in the clinic. Each card number is unique to each patient, which fast tracks retrieval of the folder.

4.4.2 Equipment used for patient folders

In an ideal hospital, a well-organised filing system is essential for the effective storage and retrieval of patient records. An effective filing system is required for the facilitation of continuity of patient care among healthcare providers. Green (2011: 216) contends that a “paper based medical records requires filing equipment for storage of records and enable easy location of folders”. It was therefore essential to find out the type of filing equipment used at the Victoria Hospital for the storage of medical records. Consequently, 7 (64%) respondents answered that the hospital uses shelves although 4 (36%) indicated the use of filing cabinets and the shelves. The researcher verified that from the Hospital Records Administrator who then confirmed that the hospital uses shelves and filing cabinets to store medical records in a file room. Same as the observation in which the researcher noted that the hospital uses shelves and filing cabinets which are situated behind the clerk’s desk (See Figure 4. 17).

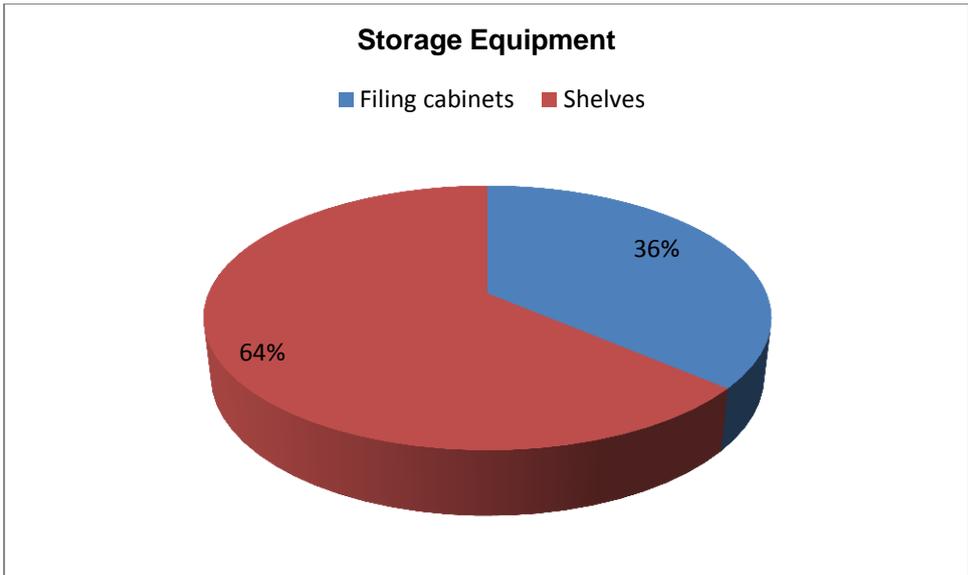


Figure 4.17: Storage Equipment

4.4.3 Storage place of medical records

Healthcare facilities store and retain medical records for easy retrieval. The researcher explored the storage facilities for medical records at the Victoria Hospital. The respondents were asked to state where the medical records were kept in the hospital. It turned out that 9 (82%) respondents stated that medical records were kept in one place whilst 2 (18%) respondents were not sure of the storage place (See Figure 4. 18).

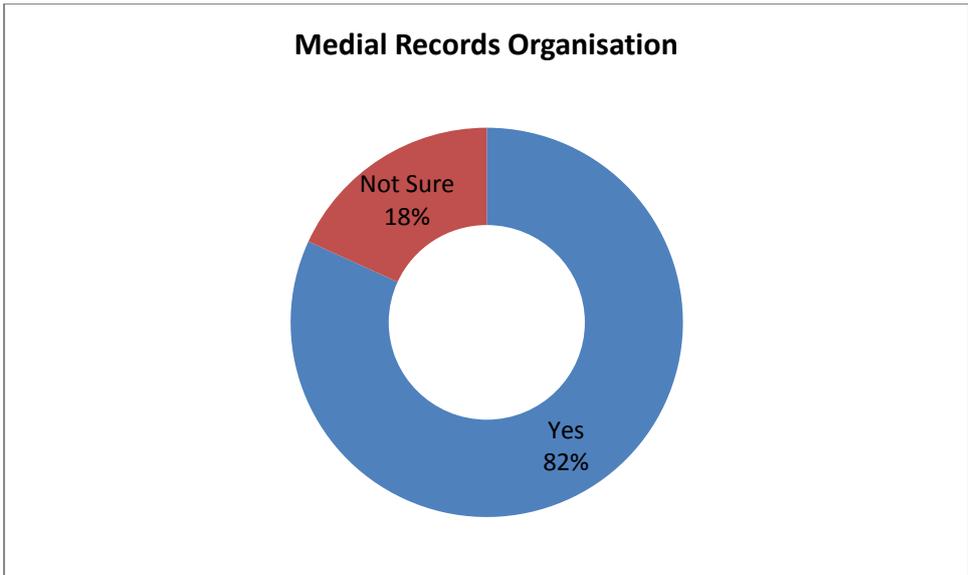


Figure 4.18: Medical Records Organisation

An interview with the service users confirmed that patients get their folders in the Out- Patients Department (OPD). The OPD is the place where patient folders are kept and is the central storage place for records. The patient folders are filed numerically hence patients after registration are given the hospital identity card with the number that matches the folder number. Below is a picture that shows part of the storage facility of medical records at Victoria Hospital.



Figure 4.19: Medical Records Filing

4.4.4 Medium of medical records

Most hospitals, especially in developing countries, generate large quantities of paper based data which results in the increase of volumes and potential difficulties in retrieving information. Globally, the healthcare sector has embraced the benefits of maintaining electronic medical records for faster retrieval and flow of information. The respondents were asked to indicate the records medium used by their hospital. Nine (82%) stated that the hospital uses paper based medical records whilst 2 (18%) asserted that both paper based and computer based records are created at the hospital. The hospital records administrator said that Victoria Hospital, like other hospitals at level 1, uses paper based medical records. Through observation, the researcher observed that new folders are created manually using paper based folders and the clerks record each coming patient in the registration log book available at the registration desk. The records were also retrieved manually by using the folder number which is available on the hospital visiting card. The clerks search for the folder manually in the shelves which are filed in a numerical order until it is retrieved (See Figure 4.20).

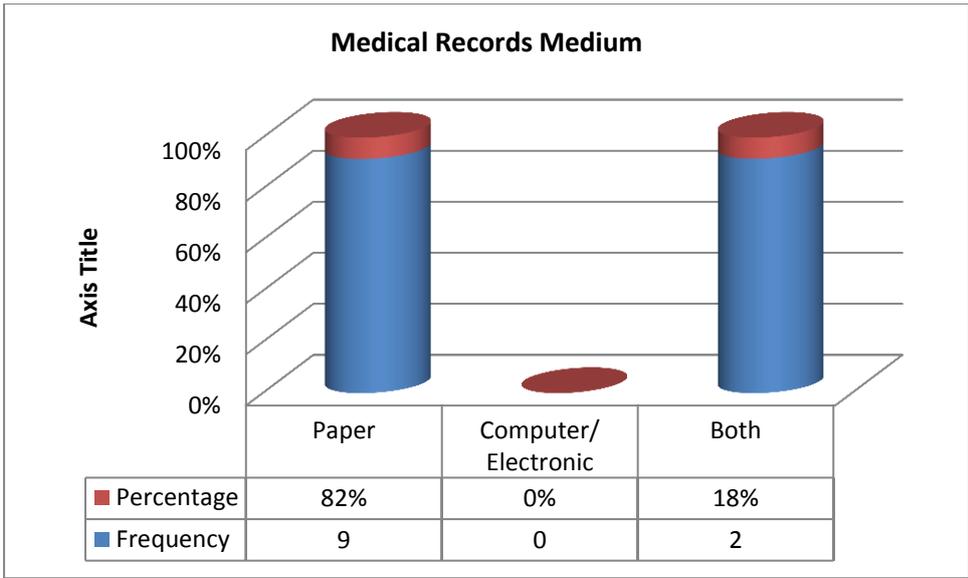


Figure 4.20: Medical Records Medium

4.4.5 Registration Space

Adequate space in a hospital setting is one of the prerequisites as recommended by the International Records Management Trust (1999). The space is needed for the storage of records, the provision of staff facilities, registration of patients and other hospital activities. Green, (2011) says that more space and equipment must be well organised from the beginning and give room for the expansion of patient folders. The respondents were asked if there was adequate space for the registration of patients. Six (55%) respondents said that the hospital does have enough space whilst 4 (36%) felt that the space is not enough, and 1 (9%) respondent did not respond (Figure 4.21).

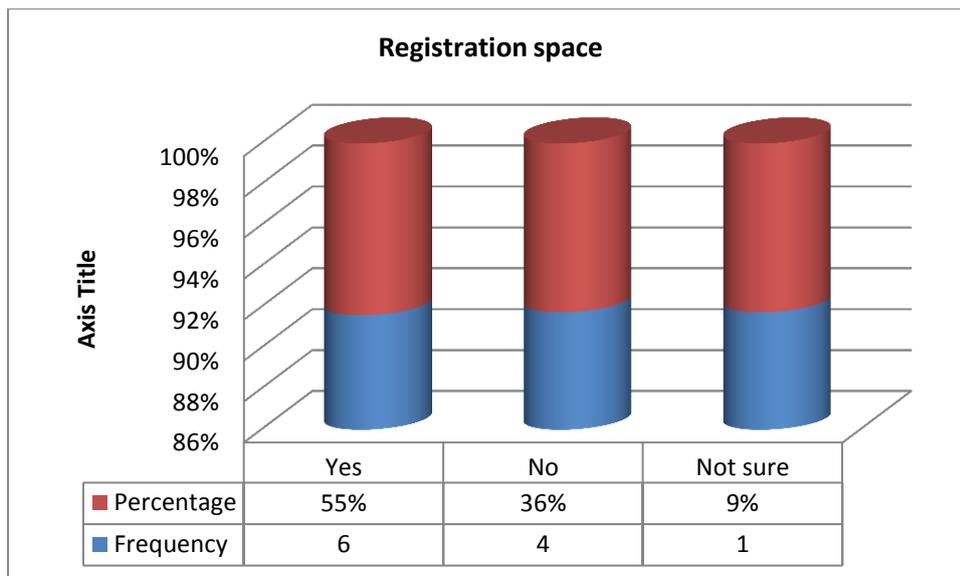


Figure 4.21: Registration Space

The World Health Organization (2002) recommends that each hospital must provide sufficient space for the maintenance of medical records as well as enough space for working area and area. This recommendation is in line with the suggestions by the IRMT (1999) that the waiting areas must be large enough to accommodate all patients awaiting registration and allow patients to be interviewed in the process without any service delays. The researcher established that Victoria Hospital does have a sufficient waiting area. The registration area is located in close proximity with the office of the clerks where the patients are able to be seen by the clerks on their arrival at the service counter. The records storage area is located just behind the clerks to allow for quick retrieval of patient folders.

4.5 Section D: Legal and regulatory framework

4.5.1 Policy awareness

As much as the government departments are required to establish policies that regulate records management activities, the policies should be communicated and implemented. The researcher wanted to establish if the respondents were aware of the policy that regulates the management of records in the hospital. The response showed that respondents were conversant with the policy. Eight (73%) respondents were aware of the policy whilst three (27%) did not respond. As indicated by Nengomasha (2009), policies should be approved and widely publicised to create awareness about their availability. The proper use of these policies prevents possible shortcomings in the management of medical records. The Hospital Records Administrator pointed out that those managing and using medical records are quite aware and conversant with the policy regulating the management of medical records.

Ngoepe and Van Der Walt (2009) insist that the policy should be communicated to the officials to manage records accordingly. The Hospital Records Administrator confirmed that the policies are communicated to healthcare workers and professionals. There is In-Service Training to ensure that staff is acquainted with the stipulated policies governing records management. Nengomasha (2009) observes that training all officials on records keeping would prevent unawareness, but without proper training the set policies are of no importance (See Figure 4. 22).

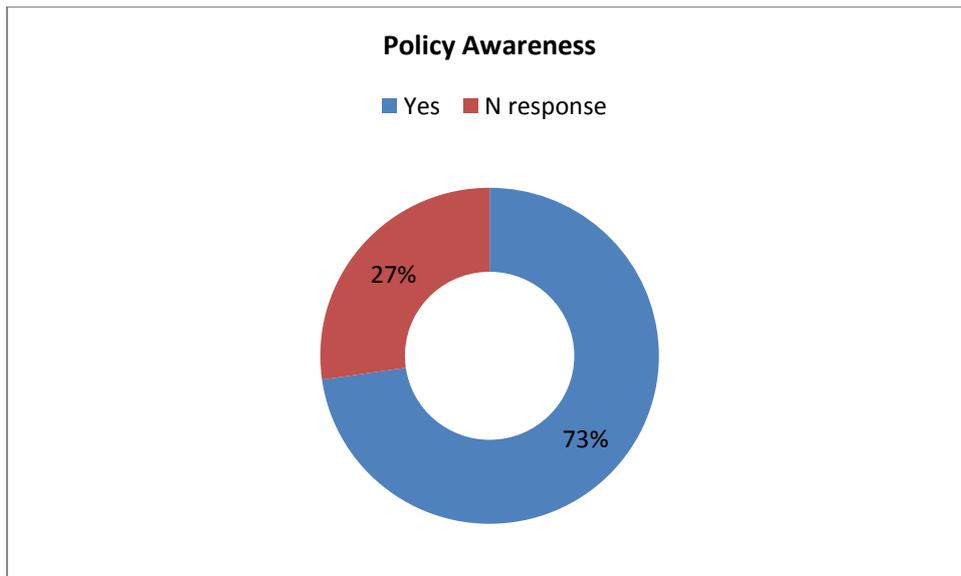


Figure 4.22: Policy Awareness

4.5.2 Availability of records management policy

The Medical Protection Society (South Africa, 2012) states that the management of medical records facilitates continuity of care for patients and reduces risks of adverse incidents that might be caused by lost, untraceable or misplaced medical records. Chachage and Ngulube (2006) underscore the fact that many countries pass legislations that require businesses and organisations to manage their records to ensure easy access when needed. The results showed that the hospital does abide by national standards on medical records management. The majority (73%) of respondents stated that there is a policy for the management of medical records and this was also confirmed by the Hospital Records Administrator. Three (27%) respondents were not sure about the availability of such a policy. As regards the mode of implementation of this policy, the Hospital Records Administrator indicated that the policy is implemented by the hospital management and supervisors. The results are shown in figure 4.23.

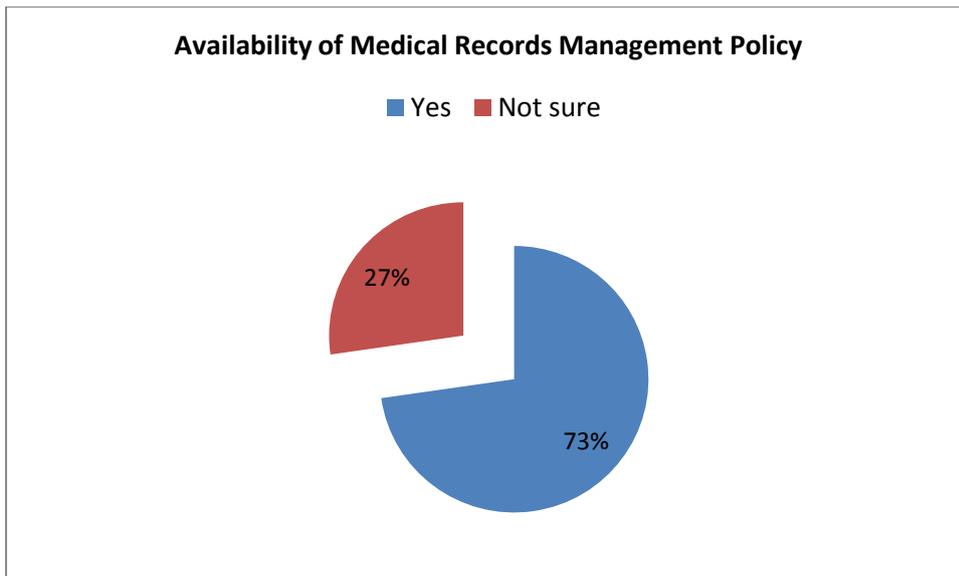


Figure 4.23: Availability of Records Management Policy

4.5.3 National Legislations for medical records management

The management of records in the public sector in South Africa is impacted by various legislations including the Bill of Rights as enshrined in the Constitution of South Africa, the National Archives and Records Services of South Africa Act of 1996 and the Promotion of Access to Information Act of 2000. The management of medical records is subject to the stipulations of the South African National Health Act of 2003. The Act requires that any person who is in charge of a health establishment must create and maintain a health record for every user of the health service. Respondents were asked if they were aware of the national legislations that govern the management of patient health information: Eight (73%) respondents indicated that the hospital is aware of the national legislations that regulate the management of health information, three (27%) respondents were not sure if they were aware of all the national legislations pertaining to the management of medical records (Figure 4.24).

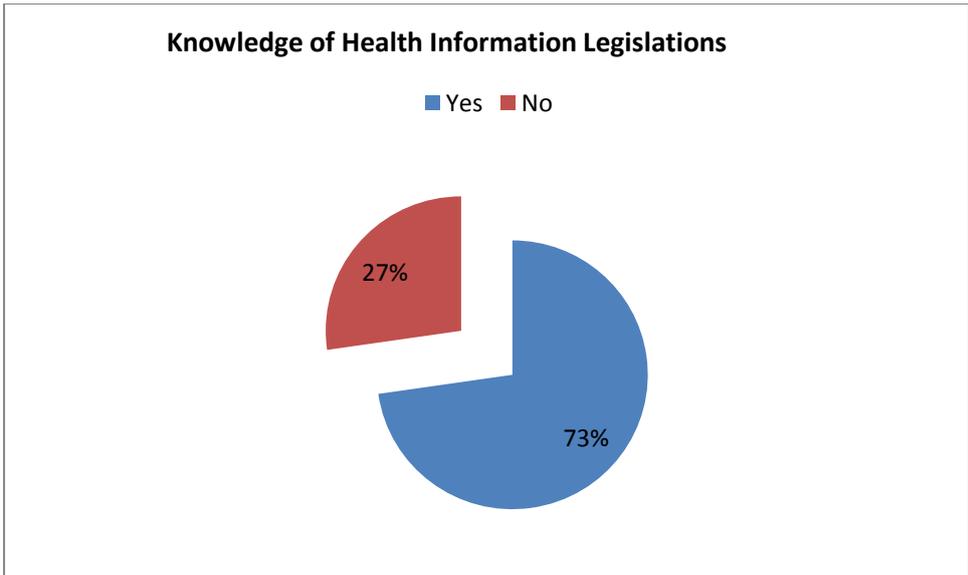


Figure 4.24: Knowledge of Health Information Legislations

4.5.4 Records management programme

Dikopoulou et al. (2010) stipulate that in order to achieve an efficient use of recorded information, there must be control of record production, transfer, retention, use and disposal. All respondents agreed that Victoria Hospital has a records management programme in place. The Hospital Records Administrator confirmed that the hospital does have a records management programme responsible for the management of hospital records.

4.5.5 Compliance with medical records management policy

The research sought to examine if the management of medical records in the hospital complied with existing requirements for the management of medical records. All respondents indicated that the hospital uses only one records management

programme for all types of hospital records. This was confirmed during an interview with the Hospital's Records Administrator. The Hospital Records Administrator explained that, although the medical records were not managed separately, there were specific procedures governing their filing, storage and retrieval.

4.5.6 Responsibility for medical records management

The IRMT (2000) rules that all records must be managed accordingly to ensure that they are protected and are easily retrievable when required. The study further probed the staff complement for the management of medical records. Five (55%) respondents stated that the day to day management of medical records was the responsibility of administration clerks, two (18%) said it was the responsibility of the Hospital's Records Administrator, two (18%) did not respond, yet two (9%) said it was the hospital secretary who was responsible for the management of medical records (see Figure 4. 25). The researcher put the question to the Hospital Records Administrator who indicated that the hospital's records manager was responsible for the entire hospital's records management programme. The researcher observed that the hospital clerks were noticed to be the people responsible for opening new patient folders, issuing folders to patients and filing them to their storage.

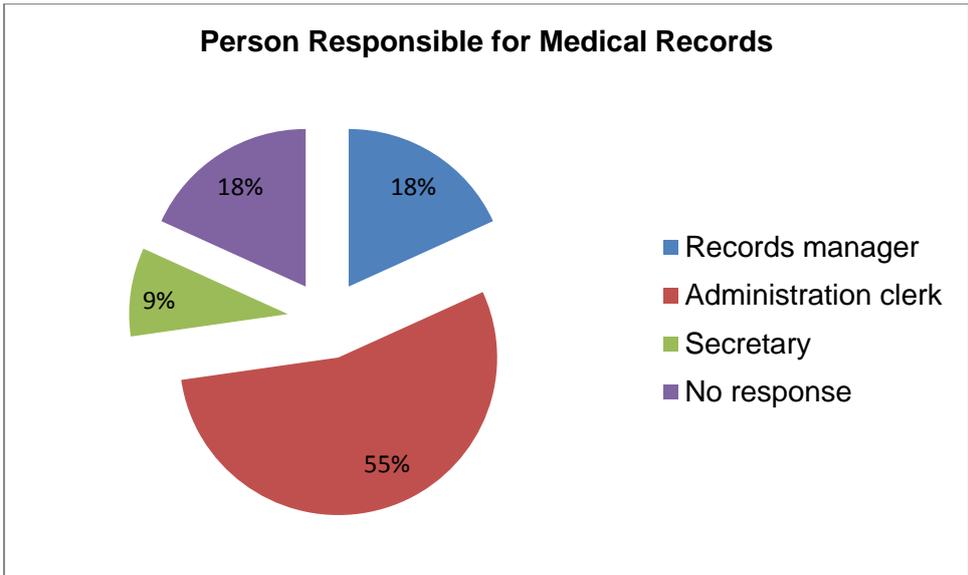


Figure 4.25: Person Responsible for Medical Records

4.5.7 Compliance with relevant legislation and regulations

Chachage and Ngulube (2006) argue that compliance with legislation and standards plays a major role on how the records and information are created, transmitted, used, stored, retrieved, controlled and preserved. In South Africa, for instance, medical records management in public healthcare institutions is regulated, among other legislations and regulations, by the Constitution of South Africa drawn in 1996, the National Archives and Records Service of South Africa Act (1996), South African National Health Act of 2003, the White Paper on the Transformation of Public Service Delivery and the Guidelines by HPCSA, 2008. The respondents were asked if the hospital complies with the existing legislations and policies that regulate the creation and maintenance of medical records. The responses revealed that the hospital operates within the existing legal and regulatory framework. An interview with the Hospital Records Administrator confirmed that the hospital does comply with the legislation and regulations governing the management of medical records.

4.5.8 Rules for accessing medical records

The South African National Health Act (2003) asserts that anyone who is in charge of a user's healthcare record must set up control measures to restrict unauthorised access to health records and storage facilities. The Act makes it an offence for anyone accessing or copying patient information without authorisation. The study sought to establish if the hospital does have rules that govern access to medical records. The respondents were asked to indicate if there were any rules that restrict unauthorised access. Nine (82%) respondents said that there were rules that govern access to medical records; one (9%) respondent maintained that there were no rules for preventing access whilst one (9%) respondent was not sure about such regulations (see Figure.4.26). When the Hospital Records Administrator was interviewed on this matter, it was established that there were regulations restricting unauthorised access to medical records.

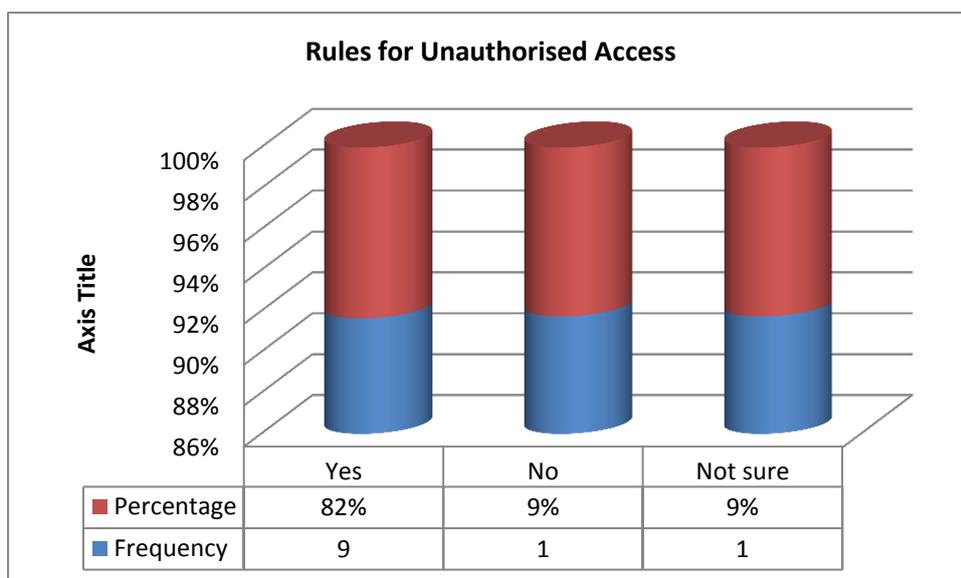


Figure 4.26: Rules for Unauthorised Access

4.5.9 Disposal of medical records

In accordance with the guidelines by the HPCSA (2008), a health record should be stored in a safe place for a period of not less than 6 years from the time the record becomes dormant. The National Archives and Records Service of South Africa Act of 1996 states that no public record under the control of the government’s body may be transferred to the archives’ repository, nor destroyed, erased or disposed of without a written disposal authority. This study further sought to establish if the hospital had disposal schedules for non-current medical records. Six (55%) respondents maintained that the hospital preserves medical records for a specified time while 45% (5) did not respond (see Figure 4.27).

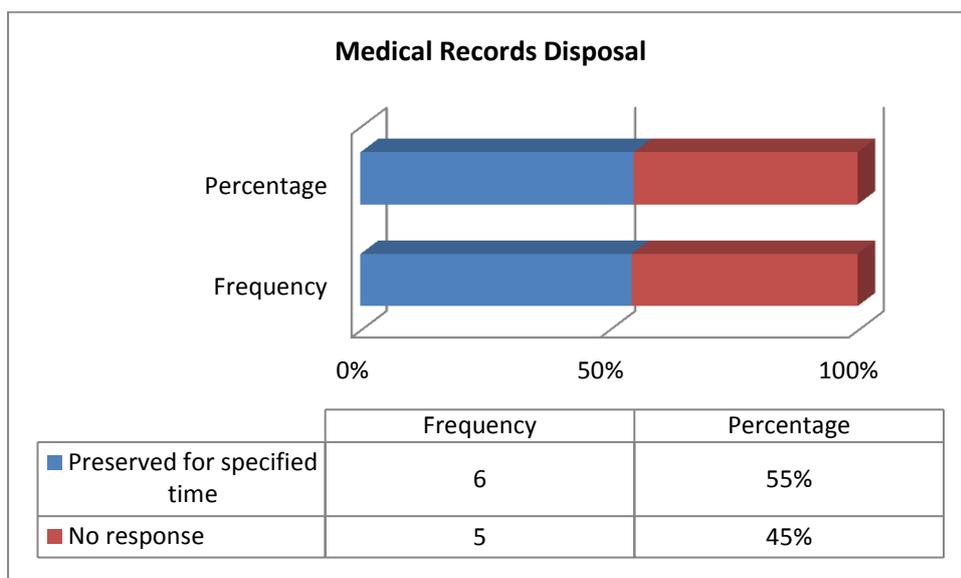


Figure 4.27: Medical Records Disposal

The hospital records administrator indicated that the medical records are preserved for a specific period in line with the requirements of the HPCSA (2008).

4.6 Section D: Security of records

4.6.1 Security of medical records

The World Health Organisation (2006) considers information in a medical record as privileged communication between a patient and a healthcare professional hence it requires guaranteed security. The respondents were asked to specify how medical records were secured in the hospital. Five (46%) of the respondents indicated that medical records were kept in special rooms whilst 4 (36%) said they were kept in the strong rooms. However, 2 (18%) respondents indicated that the medical records were kept in central filing offices. (see Figure 4. 28).

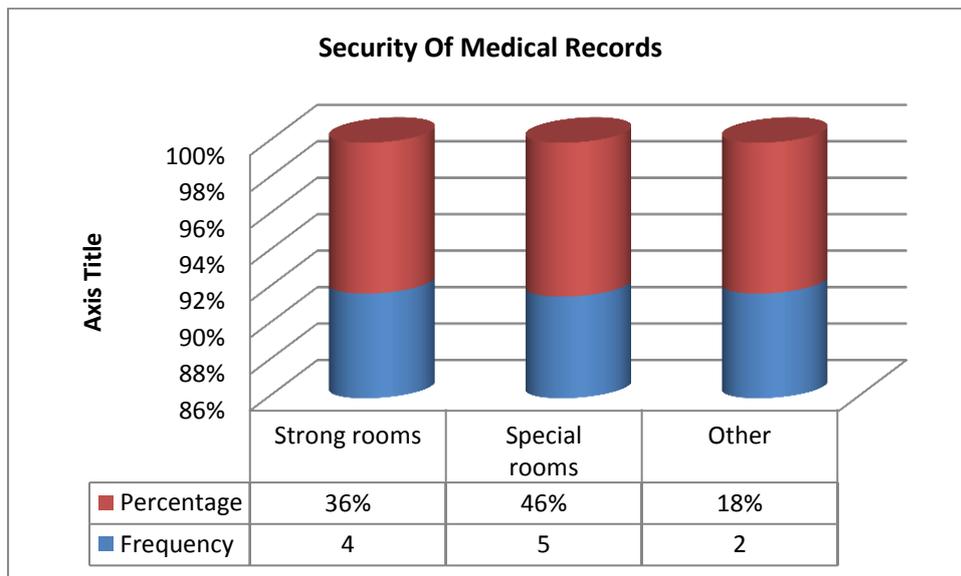


Figure 4.28: Security of Medical Records

The Hospital Records Administrator indicated that medical records were kept in special rooms. These varying responses may suggest that there are uncertainties about the security of the medical records in the hospital.



Figure 4.29: Medical Records Storage

The above photograph depicts the strong room in which the records are stored. The researcher noted a notice on the door which prohibits any unauthorised access to medical records stored in the room. This storage facility is located in OPD behind the clerk's desk

4.6.2 Authenticity of medical records

The HPCSA (2008) stipulates that an original medical record must always remain intact and fully legible. The Medical Protection Society (South Africa, 2012) rules that an entry made to a medical record should neither be deleted nor obliterated. The study further probed the authenticity of medical records at Victoria Hospital. The respondents stated that unauthorised officials were not given any information contained in medical records thus the door leading to the folders was always locked

to prevent such access. In the event of an investigation, clerks or nurses safeguard medical records by making photocopies of the originals prior to the investigation. The interviews with the key informant, the Hospital Records Administrator, revealed that medical records cannot be tampered with because medical records are protected by a colour coded paper.

4.6.3 Movement of patient folders

The study also investigated if there were any measures to control the movement of patient folders within the hospital. The discussions with respondents revealed that patient folders are left at dispensary after consultation. In some cases, users get their treatment at the dispensary and leave their folders there. All folders left at dispensary are sent to the OPD (Out Patient Department) for filing. When the folder is not found from where it is supposed to be, it is tracked through the daily register which is normally kept by the clerks. The respondents also pointed out that should the folder be borrowed by another unit, that unit should sign and return that folder to the file area. If not yet returned, the nurses should search for it and return it to the OPD for filing.

4.6.4 Tracking and tracing of medical records

Shepherd and Yeo (2003) contend that records must be protected against long term loss and misplacement, and safeguarded against malicious acts or carelessness on

the part of staff that have legitimate access to them. The paper based folders are protected from temporary misplacement or long term loss through the use of signatures, whoever has borrowed a folder must sign in a borrowers register to ensure the return of the borrowed folders. The researcher asked about the system the hospital employs to track the medical records issued out to other hospital units. Seven (64%) respondents indicated that there were tracked and traced through a register housed at the OPD. When the folder is issued out, it is indicated in the register. If it is issued to a patient, the patient goes to the examination room, and after collecting medication at the dispensary, the record is left there to be collected by hospital staff for filing at the OPD. Three (27%) respondents were not sure about the measures of tracking and tracing of records. One respondent explained that there was no system for tracking and tracing records (see Figure 4.31).

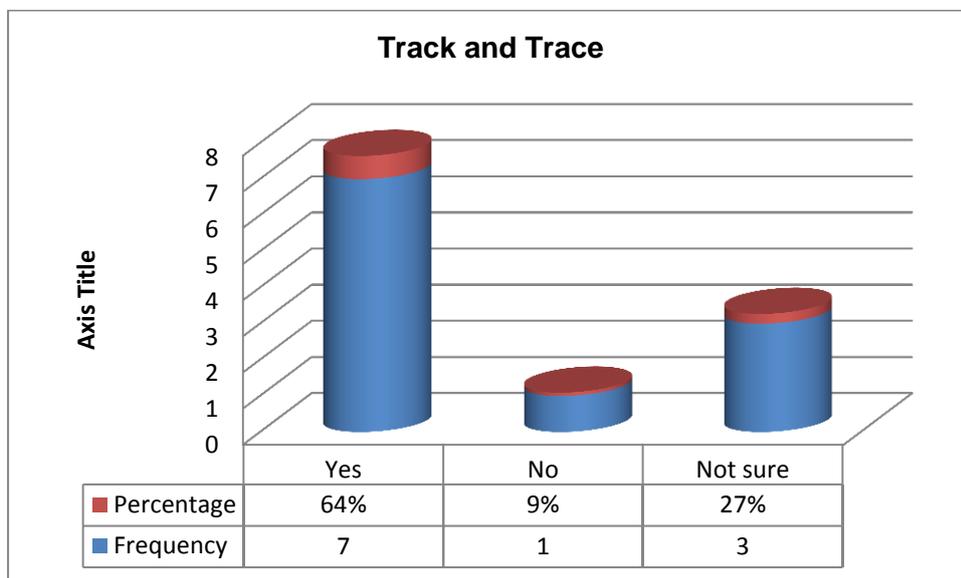


Figure 4.30: Tracking and Tracing of Medical Records

In addition, the researcher questioned the users if they had any reservations with the tracing of their records. All user study participants indicated that their records were normally found at the OPD. The Hospital Records Administrator pointed out that there were measures to safeguard and track their folders. The administrator also stated that each unit working with patient folders must sign at the OPD while those expected to use the folders should sign as borrowers. This enables the nurses to search easily for any folder when needed and return it to the right filing place.

5. Summary

In summary, this chapter analysed and presented the findings of the study obtained from the questionnaires, interviews and occasional observations. Data analysed and presented focused on the objectives of the study. The chapter started by presenting the gender and the age distribution of the of the study participants. The education qualification and trainings received targeted the healthcare professionals since they are the providers of the service and it is important to outline their competencies. The presentation of the findings firstly looked at the aspects of the medical records management practices. These were the methods on how the medical records are created; the retrieval of medical records when needed; replacement of missing medical records; effect of newly created folders as replacement of missing folders on the quality of healthcare services; the length and the time spent on the retrieval of medical records; and the frequency of medical records collection from various hospital departments. The infrastructure for the management of medical records was also presented concentrating on the registration equipment of patients on their arrival to the hospital; the registration space and the waiting are; and the storage equipment

for filing purposes. The data on the legal and regulatory framework was also analysed and presented. This data was concentrating on the policy awareness; the availability of policies for the management of medical records; compliance to the national legislations for the management of medical records; and the rules for accessing and disposal of medical records. Lastly, this chapter presented data on the security of medical records concentrating on the aspects of authenticity and the tracking and tracing of medical records.

CHAPTER 5

Discussion of the findings

5.1 Introduction

The previous chapter presented the findings which were obtained from the questionnaires, interviews and observation. This chapter discusses the findings of the study. The aim of the study was to explore the role of medical records management programmes in the delivery of healthcare services in public hospitals in the Eastern Cape Province, South Africa. There were four objectives formulated to achieve the aim of the study, namely:

- Describe the present records management practices at Victoria Hospital.
- Find out the existing infrastructure for the management of medical records
- Evaluate the compliance of patient medical records management in Victoria Hospital with the relevant legislative and regulatory requirements
- Find out about the security of the patients' medical records at Victoria hospital.

5.2 Respondents' characteristics

The respondents who participated in the study comprised 11 healthcare professionals and 30 users of healthcare services at Victoria hospital. The service providers were drawn from the people working with and using the medical records. The service users were randomly selected from patients visiting the hospital and were 15 years and above.

5.3 Section A: Current medical records management practices

Available literature indicates that medical records form the backbone of healthcare service delivery and are important in the promotion of quality and continuity of healthcare for patients. Globally, there is a great concern over the efficient and effective delivery of healthcare services to the public. Bleich and Slack (2010) contends that in the United States of America, there was a general agreement that computer based medical records proved to have a potential of improving the quality of medical care since they ease the retrieval of patient record, it is convenient for the treating physicians to obtain diagnostic tests, laboratory results, X-ray interpretations etc. Therefore, easy access to patient records is cost effective it lowers the costs burden to the hospital finances, no need to repeat diagnostic tests and the laboratory tests which are expensive for the state and treatment is administered easily to patients. Carayon, et al. (2009) noted that the implementation of Health Information Technology has the potential of improving the delivery of quality healthcare services, preventing medical errors, enhancing healthcare service consumer confidence and efficiency. Adoption of electronic health record is seen as the means to facilitate the clinical data sharing, protect health information privacy, and quickly identify the emerging public health threats.

Medical records exist in two formats, viz., the paper based and electronic format. Missah et al. (2013) posit that healthcare organisations are beginning to recognise the importance of maintaining electronic medical records management systems to improve the quality of care by maintaining the free flow of information among healthcare professionals. Consequently, many healthcare providers have or are in the process of migrating from manual paper based medical records to electronic

medical records management systems. Steward (2005), for example, found out that the United States government declared accessible and affordable healthcare services for its citizens as a national priority and as a result advocated for the establishment of viable medical records management programmes based on electronic records management systems. In South Africa, M'kumbuzi et al. (2004) noted that the National Health Information Systems were fragmented, incompatible, uncoordinated, software and hardware were incompatible and most systems were manually driven with minimal computerization. The fragmented system was as a result of historical imbalances to healthcare services and healthcare quality designed parallel to service different racial population groups. The study conducted in Gauteng Province by M'kumbuzi et al. (2004) revealed that there was no uniformity of record filing, storage and retrieval particularly in the public healthcare sector. The South African healthcare sector uses different health record systems, which do not integrate with each other (Kerry 2006). The quality of health records in South African health sector differs amongst the institutions, some hospitals uses computerised system, others manual system (Marszalek, 2006).

5.3.1 Medical record creation

The first objective of this study was to describe the present records management systems in Victoria Hospital. The results show that the hospital is still using a manual medical records system despite the rapidly increasing trends towards the adoption of Information Communications Technologies (ICTs) in records management.

At Victoria Hospital the findings of the study established that medical records are created manually through the use of folders in which the patients' information is recorded. When creating a new medical record, the clerks are required to use a new folder to record all the biographical data of each patient.

The process was also confirmed by the service users who pointed out that during the creation of folders they furnish the clerks with their personal information, hand in their Identity Document, pay an amount of R20.00 as the hospital fee, and, where necessary, present a referral letter from the local clinic that details the nature of sickness. The issue of referral letters arises mainly because patients use local clinics as their point of entry into healthcare services. Referral letters become part of patients' medical records as they contain patient health information.

A new folder number is assigned and written on the patient's visiting card to enable easy retrieval when the patient revisits the hospital. The service user is required to bring it to the hospital during the next visit. Bringing the card along is important to facilitate quick retrieval of folders and reduces the waiting period. 93% of service users interviewed confirmed that they always carried their cards. After the patient's personal information and identification have been verified, the patient will be given the folder to wait for a physician in the examination room.

The use of manual or paper based medical records is not unique to South Africa. Other developing countries such as, for example, Ghana, Ethiopia and Lesotho are also on the same pedestal as far as the use of paper folders is concerned. For instance, in Ghana, paper based records consume much space, notwithstanding that refiling them is labour intensive (Williams and Boren, 2008). It is probable that this situation is impacting the quality of healthcare service delivery. Williams and Boren

(2008) posit that the implementation and the utilisation of Electronic Medical Records (EMR) may improve healthcare service delivery.

The Constitution of South Africa, Act 108 of 1996 gives the right of access to healthcare facilities to all citizens. Various groupings such as the disabled, children, old age people, pregnant mothers, and the marginalized, have the right to access free healthcare service. Public hospitals are faced with an influx of users seeking free healthcare services. This has led to an increased workload since the announcement of free primary healthcare to pregnant and children of six years to public health facilities (Harrison, 2009). Therefore, public hospitals have to contend with huge volumes of medical records due to high number of people visiting public health facilities. Harrison (2009) noted that the free healthcare services led to the dramatic utilisation of services, as such healthcare services workers felt that free policy has imposed additional burden on them. This has become more of a concern since records are managed manually.

The overburdening of manual records systems can easily lead to poor systems of records keeping. It was found that most rural public hospitals in Ethiopian had no standardised records keeping systems for medical records. Due to the absence of standardised systems, clinical information was written on scraps of paper with some medical records kept in physicians' offices and clinics (Wong and Bradley, 2009a). T

5.3.2 Records management systems

The achievement of high quality healthcare service is the ultimate objective of any healthcare service provider. Unarguably such an achievement can be correlated to good management of medical records. Ting et al. (2011) opine that the only way to

improve the quality of patient care is through good records keeping preferably the integration of information technology into medical records keeping practice.

The study established that Victoria Hospital does have a system in place that manages all the records generated in the hospital. The hospital uses a manual records system where all records are kept in a paper format. All medical records are kept in the Out-Patient-Department. The system in place uses a numerical sequence where the folders are retrieved through the use of the folder number assigned to the hospital identity card given to the patient during the first registration of a patient's hospital visit. Interviews with the key informant revealed that the hospital adopted a centralised system to safeguard patient information since the information on the medical record is confidential and should, therefore, not fall into wrong hands. The respondents also noted that the use of a centralised system fosters uniformity and conforms to standards used by other health institutions in the country. A centralised system of medical records houses both in-patient and out-patient folders. In the case of an in-patient the medical records are retained in the wards for use by physicians and nurses. Following the discharge of the in-patient the patient record is returned and kept together with other medical records in the OPD in the records storage place. The use of centralised records systems in healthcare delivery institutions has been established by a number of studies. For example the study by Lederman (2005) reveals that in the United Kingdom the central file location was needed for the safety and security of paper medical records. Chikuni and Mnjama (2010) also confirmed that Gwanda provincial hospital in Zimbabwe used centralised storage facility for all semi-current records.

5.3.3 Retrieval of medical records

According to Ngoepe and van Der Walt (2009) records management is one of the fundamental aspects to good public management. Thurston (2005) opines that reliable and timely accessibility of information provides evidence and promotes credibility of reports. The current study established that Victoria Hospital uses manual system in managing medical records. This is shown by varying responses of 73% respondents who indicated that medical records were retrieved manually, using patients' visiting cards together with folder matching numbers.

The manual records management system can be hectic and problematic for record retrieval. Thurston (2005) contends that weak systems always result in large quantities of records being kept for longer than necessary thus amounting to difficulties in retrieving essential records.

Majority (67%) of user participants at Victoria Hospital indicated that the retrieval of their folders was quick whilst 27% maintained that the retrieval of their folders was poor and slow. The remaining 6% of the respondents were not bothered whether they received their folders on time or not. Those who found the retrieval of their records was slow indicated that this caused them to spend much time waiting for folders to be retrieved and in turn led to delay in their being serviced. According to Chikuni and Mnjama (2010), the slow retrieval process of folders may be as a result of inadequacy of retrieval tools and/ or the use of a manual system. The two authors opine that such systems may probably delay decision making on the medical care of patients and also disrupts continuity in the care of patients. This also negatively affects or compromises the quality of medical care of patients as doctors must arrive at informed decisions on patient health through perusing medical records. Hartmann

and Sooklal (2012), in study conducted in the Gauteng province, linked weaknesses in efficient retrieval of patient records to excessive waiting which may also affect the quality of treatment. The study conducted in KwaZulu Natal by Kerry (2006) revealed that the Patient Held Record (PHR) improves continuity of patient care since the patient clinical information is readily accessible through the PHR. However, this stops being a solution where PHR is lost or the patient fails to carry it along during the revisiting the hospital.

The manual records management system poses serious challenges in the sense that if a patient does not bring along the hospital identity card, clerks may spend much time locating folders, which may make other users wait for a long time. Under such circumstances, the researcher observed that the clerks have to interview patients to reconstruct their biographical information and identify them, and oftentimes, patients would be asked to indicate the last time they visited the hospital.

Research shows that the management of medical records in Africa differs from country to country. In Ethiopia, some medical records were found in clinics while others lay in physicians' offices. Only a few of these records would be returned to the medical records department (Wong and Bradley, 2009). The study conducted by Pirlke et al. (2012) in both Senegal and Mali also identified challenges experienced by returning patients. They state that returning patients to these hospitals for follow-up or additional treatment often did not get their folders and, consequently, new folders were created. Hospital personnel found it difficult to locate the folders of returning patients from unorganised piles of files. The hospital staff could not append new notes to the old patient folders since many of them were untraceable.

5.3.4 Replacement of missing folders

Wong and Bradley (2009) define a medical record as a multifunctional document that is used to communicate and document critical information about an individual's medical care among healthcare professionals. Therefore, medical records are the cornerstone of the quality and efficiency of patient care during follow up visits or hospitalisation as they contain a complete and accurate chronology of treatments and future plans for care. At Victoria Hospital, when a patient's folder is untraceable or missing, a new folder is created. Six (55%) respondents indicated that it is not proper to create a new folder when the previous folder is not found. The respondents explained that the creation of new folders each time an individual patient visits the hospital costs stationery and time. Further, it makes it difficult for healthcare professionals to follow the patient's medical history as the previous consultations are contained in the old folder. The continuity of patient care is likely to be affected because the diagnoses and treatment administered to the patient are lost with the old folder. Hartmann and Sooklal (2012) opine that medical records allow for continuity of treatment and help in a smooth patient handover amongst healthcare institutions and professionals.

Ngulube and Tafor (2006) opine that a records management system that controls records from the creation, processing, distribution, storage, and retrieval to the ultimate disposition is the key to effective and efficient management of recorded information. IRMT (1999) assert that all documents relating to an individual patient are held in one folder to easily access patient medical history and provide the continuity of care for patients. Medical records are an important component of

medical care, healthcare practitioners normally rely on the knowledge of patient's medical history to make their medical decisions.

5.3.5 Length of retrieval time

Service efficiency and quality is the most important factor in the healthcare service industry. The speed of service is also key in healthcare service delivery. The time factor in healthcare service is becoming important as expectations for convenience and quality continue to rise. Customers of healthcare services expect availability of resources, shorter waiting periods and quicker turn-around results. Healthcare organisations, like other service oriented organisations, should also strive to balance customer demands with better service. This study established that the length of retrieval time at Victoria Hospital is less than 5 minutes as indicated by the majority (67%) of service users. The issue of quality service delivery is guided by the principles of *Batho Pele*, which imply that consumers of healthcare services be placed at the centre of healthcare service delivery. The principle of *Batho Pele* is customer driven (South Africa, 1997). Freely translated, *Batho Pele* means advance people's interests first. According to Arries and Newman (2008), healthcare consumers are increasingly becoming aware of their rights to access quality healthcare services. Along with the guiding philosophy of *Batho Pele*, the service quality is about responsiveness, courtesy, reliability, customer orientation and confidentiality in service delivery. The responsiveness of service happens when it is rendered as and when it is supposed to. So, this positively affects the time factor. When service is prompt, the users would not be kept waiting (Arries and Newman, 2008).

The rest (33%) of service users pointed out that they spend much time waiting for their folders to be retrieved. Chikuni and Mnjama (2010) noted that the inadequacy of retrieval tools decreases the speed of retrieval process. Maratha (2011) opines that for timely and quicker records retrieval, in the public health sector, there should be a proper records management system. At public hospitals in Limpopo, it was found that the manual records management system was hectic and negatively impacted on retrieval time. The major reasons for slow retrieval were misfiling, missing files and untidy filing. The delay of folder retrieval may retard decision making on medical care and obstruct continuity of care for patients.

5.4 Section B: Infrastructure for the management of medical records

According to the IRMT (1999), adequate accommodation is considered to be essential for the proper functioning of records service. Records offices should be located conveniently and separately from other administration units. The space should be large enough to accommodate the current files and the records office staff who work with the records. The storage space should be secured and well maintained, especially, for medical records since they contain crucial health information. One of the most crucial factors recommended by the International Records Management Trust (IRMT) is appropriate equipment and material for handling, storage and preservation.

5.4.1 Registration and outpatient space

The WHO (2006) stipulates that the hospital administration should provide security, sufficient staff as well as sufficient storage space for medical records and an adequate working area. An adequate space allows for staff to safeguard the medical records from being tampered with and prevents unauthorised access to medical records. The key is to provide adequate working space to enable all staff to observe the patient's right to privacy and confidentiality at all times. The researcher observed that the registration space at Victoria Hospital also serves as a waiting area for patients' folders to be retrieved after registration by the clerks. The office space should accommodate the growth in documentation as new medical records are created in a hospital on a daily basis. In addition, the office space should be separated by a counter to prevent unauthorised entry. The patients should move from one OPD to their respective examination rooms to be seen by the healthcare professionals. According to the IRMT (1999), if the space is adequate in the registration area, it would also allow the clerks to interview patients upon their arrival. This is likely to happen when patients come to the hospital without visiting cards. In such cases, the clerks have to ascertain whether the patient is coming to the hospital for the first time or not. This is only possible by interviewing the patient or the accompanying relative to find out if there is an already existing patient folder or not to avoid duplication. By so doing, quality time is saved. In addition to this, the IRMT (1999) strongly suggests that the registration counter and the storage for medical records should be located in close proximity to the clerks.

According to the researcher's observation, the registration area at Victoria Hospital is located nearer the office of the clerks where patients are easily seen by the clerks on their arrival at the hospital. The records storage area is located just behind the clerks to allow for quick retrieval of patient folders after identification.

5.4.2 Equipment used for patient folders

In a hospital, a well-organised filing system is essential for the effective storage and retrieval of patient records. A healthcare facility has to decide on and select record-keeping methods that best serve patient care needs and demands to promote continuity of care and healthcare service delivery without any service delays. The Victoria Hospital uses shelves and filing cabinets. This was indicated by 64% of respondents who pointed out the use of shelves while 36% said there were both shelves and filing cabinets. The filing system used in keeping folders depends on the medical records management system in place. For example, globally, many countries have realised the advantages of adopting the Health Information System that enhances the use of Electronic Medical Records (EMR). This is demonstrated by Al-Azmi et al. (2009) in their Kuwait study. These authors argue that the implementation of an Electronic Medical Records system enhances efficiency and effective healthcare service while promoting patient satisfaction.

According to Steward (2005), the US opted for Electronic Medical Records to decrease healthcare costs, improve on patient care, facilitate easy communication amongst healthcare professionals, allow storage of healthcare digital images and increase the efficiency of healthcare systems. Electronic medical records enable

healthcare professionals to easily and timeously identify and treat risky diseases, conduct vital research and measure the improvement of healthcare service delivery quality. According to Green (2011:216), a “filing system requires filing equipment for storage purposes, location of files, and number of records to be stored and the cost of the equipment.

5.4.3 Collection of medical records

The Healthcare environment is changing and becoming more complex. Regardless of its complexity, it is important to maintain the high quality of patient care. Medical records serve as an integral part of healthcare and contain critical information that enables the effective facilitation of care and patient treatment. Medical records are regarded as the most important means of communication in healthcare as they are necessary for the provision of efficient and effective diagnosis and treatment. Any Healthcare environment creates records on a daily basis; medical records form part of this creation. These records are produced on different media types, namely, paper, maps, photographs or machine readable formats.

A challenge always associated with the physical record is that it can only occupy one place at a time. If the physical record is not at the place where it supposed to be, it is either misplaced or lost. In the hospital situation especially those hospitals still using the paper based medical records, if the folder is issued out to another hospital unit, the other departments cannot have access to the same folder that is in current use by another unit. At Victoria Hospital, all patient folders are stored in the Out-Patient-Department. At the hospital a folder is removed from the storage place when a

patient visits the hospital. It is then left at the last destination like the dispensary where the patient takes medication or it may be left in the examination room. As patients leave their folders at the said places, it is important to have these records back to their storage place. The study found that these medical records are collected daily by either nurses or clerks from all these different service points and filed at the OPD. This is to ensure their traceability and accessibility.

5.4.4 Filing and storage of medical records

Record keeping is one of the fundamental aspects of public administration without which the rule of law and accountability are nullified. Records represent a particular and crucial source of information, which enables public servants to carry out their work. Hospitals, as health facilities, must systematically store and retain medical records for easy retrieval. Green (2011) argues that in a centralised filing system, patients' records are organised and filed in one central location. Victoria Hospital employs a centralised filing system. This was indicated by 82% of the respondents who stated that medical records are collected from all the units and kept in the OPD where they are stored.

The centralised filing system for medical records is also recommended by the International Records Management Trust (1999) that ideally stipulates that hospitals should employ medical records officers to manage the centralised filing system of medical records. Kemoni and Ngulube (2008) aver that inadequate records and information management undermine the efficiency and effectiveness of public service and causes delays and poor service delivery. In a health sector,

unprofessional service and delays on the delivery of service are likely to dent the image of the sector where users may always complain about poor service. The delays are likely to have negative repercussions on the quality and the continuity of care for patients.

All respondents stated that they obtain their folders in the Out-Patient-Department (OPD). The OPD is the central place where patient folders are stored. The folders are filed numerically hence patients are given the hospital identity card after registration with the number that matches the folder number.

5.4.5 Medium of medical records

Medical records are available in either paper or electronic formats. . Some hospitals use both formats whilst others still use either of the two. Current trends indicate that many countries have begun to realise the importance of incorporating the Information Technology systems into the old system. The Information Technology Systems have potential benefits such as improving quality of care, enhancing communication amongst healthcare professionals, as well as easing accessibility and availability of medical information and data quality (Ayatollahi et al., 2009).

The Victoria Hospital uses paper based medical records. This was stated by 82% of the respondents. The researcher observed that when patients arrive at the hospital they hand hospital visiting cards to the clerks who then go to search for the folders on the shelves. One study conducted in Northern England by Ayatollahi et al. (2009) revealed that some healthcare workers thought that paper based medical records

were easier and quicker to use and, therefore, preferred them to computerised records. The challenge though is the waiting time for the retrieval of the folders. In an electronic environment, Ayatollahi et al. (2009) argue that patient care and the delivery of healthcare service is improved due to the speed of record retrieval. In the United States of America, it was proved that the use of electronic medical record management system had the potential to improve the quality of patient care (Bleich & Slack 2010). In Northern England, it was revealed that some healthcare professionals complained about the challenges of locating and accessing paper based medical records due to the large volumes of paper produced by the hospital. South Africa is not immune to these challenges as the study by Kerry (2006) indicated that administration clerks had difficulties in retrieving their patients' folders. Upon losing one, a new folder is opened thus hampering the continuity of care for a patient since other valuable information would be lost in the previous folder. Where medical records are maintained manually, the number of records created increases thereby posing serious challenges to the future management and retrieval of records.

The challenges managing medical records were pointed out by Marszalek and De Villiers (2006) in their study at Manenberg in South Africa. The study revealed that the quality of medical records in hospitals is not the same and varies according to institutions. Some hospitals use computerised records systems whilst others do not even keep records. Further, these hospitals face constant staff shortage. This predicament affects the quality of medical records and healthcare service delivery in these hospitals.

5.5 Section C: Legal and regulatory requirements

According to the WHO (2006), medical records are important legal documents. In each country, medical records are essential for the present and future care of a patient, for the protection of patient and hospital. It is against the foregoing reasons that medical records must be managed properly for them to be made available whenever they are needed. The medical record is a legal document which is supposed to be treated as such and used by the hospital for the continuity of patient care. Therefore, when a patient visits a hospital, there is an explicit contract between the hospital and a patient that necessitates service care and a chronological record of care and treatment. The medical records are always considered the property of the hospital kept for the benefit and continuity of care for the patient. The World Health Organisation (2006) explicitly states that as much as medical records are the property of the hospital, the health information contained in the medical record remains the property of the patient. For this reason, the medical record cannot be released without the consent of the patient.

In respect of the legal framework of medical records, the IRMT (1999) asserts that the legal position regarding the hospital records that are under the control of the central government ministry is likely to be similar to other governmental records. In South Africa, the Records Management Policy Manual (South Africa, 2006) states that the quality of service delivered to users of public service by governmental bodies depends on how well they create, store, retrieve, use and manage information to make decisions and pursue their business objectives. The information generated by these governmental bodies is contained in the records they maintain. According to the Records Management Policy Manual (South Africa, 2006), these governmental

bodies should control and manage their records according to the legislation promulgated by the government to enable the public to have timely access to accurate and reliable information.

5.5.1 Proof of patient registration

The WHO (2006: 8) states that a “medical record starts by the time a patient visits the hospital as an outpatient or admitted as an inpatient”. The identification information is collected and recorded. In a healthcare facility, accurate identification of patients is considered as one of the fundamental aspects of an efficient and effective medical records system. The correct patient identification is the backbone of healthcare to ensure that each patient has one identification number and one folder. This responsibility of correct identification rests with the clerks in the first visit during the registration process. The correct patient identification is the pillar of medical care services that relates to diagnosis and treatment. At this stage, a patient is given a folder number for identification in her future hospital visit. The results of the study at Victoria Hospital showed that after patient registration and identification, the patients are given registration confirmation which is in the form of a hospital identity card. The hospital identity card will be assigned a folder number which helps in the retrieval process of patient folder in the next hospital visit. This is also in line with the recommendations of the IRMT (1999) that each patient should have a unique identification since it is crucial in the administration of diagnosis and treatment. In the current study, it was found that patients receive cards as proof of registration that uniquely identifies them in the next hospital visitation. Each card is assigned a folder number which is used in the filing system. As Victoria hospital uses

manual record system, patient produces the hospital identification card to the clerks to easily locate the patient folder in the filing system. In most cases, patients go to their local clinics as the local clinics are the first entry level to healthcare facilities. In these local clinics, patients are required to bring their small exercise books to document patient health information. In Victoria Hospital, patients are always encouraged to bring these clinic books when visiting the hospital. The hospital folder number will also be written on these small booklets. This will help to identify the patient when referred to by the clinic to the hospital. These small exercise books used by the clinics are referred to as the Patient Held Records (PHR). The patient held record is a widely used phenomenon in South Africa as highlighted by Kerry (2006) in their study at Emtshezi District in the Province of KwaZulu Natal.

Also in the greater Tzaneen Municipality in the Limpopo Province, patients are advised to bring these small exercise books known as the PHR when visiting the hospitals (Norden et al.,2004). These PHR makes it easy for the treating physicians to follow the patient health information history from the clinics. During the patient registration, the hospital clerks write the hospital folder number on the PHR used in the clinics so as to help easy folder retrieval when the patient visit the hospital again. This helps the official to easily retrieve the patient folder when the patient is at the hospital without bringing the hospital identification card. A hospital, as a public service sector, is obliged to render healthcare services to the public as required by the White Paper on Service Delivery (South Africa, 1997) through the principles of *Batho Pele*. So, by ensuring that folder numbers are written on documents used in the healthcare sector prevents possible and unnecessary delays.

5.5.2 Compliance with existing legislation and regulations

In accordance with the IRMT (1999), the legal status of medical records is determined precisely by the legislative framework within which the hospital operates. The findings of the study revealed that Victoria Hospital operates within various legislations and guidelines in managing its medical records. Victoria Hospital is a public hospital which operates and governed under the national stipulated legislations. This is shown by the 73% of participants who indicated that the hospital is aware of the national legislations that regulate the management of health information. This is supported by Chachage and Ngulube (2006) when they opine that compliance with legislation and standards plays a role on how the records and information are created, transmitted, used, stored, retrieved, controlled and preserved. The researcher verified by asking the Hospital Records Administrator (Appendix D) whom he confirmed that the medical records are managed within the stipulated legislations and further explained that there are procedures that are in place for filing, storage and retrieval of medical records in Victoria hospital (Appendix H). Compliance is also concerned with information integrity, privacy and its retention. The legislations and regulations that are used include:

The White Paper on the Transformation of Public Service Delivery, South Africa
1997

- i. The Guidelines by HPCSA, 2008
- ii. The Constitution of South Africa (1996
- iii. The Promotion of Administrative Justice Act, no.3 of 2000
- iv. Promotion of Access to Information Act no. of 2000
- v. The National Health Act, no 61of 2003,

- vi. The National Archives and Records Service of South Africa Act no 43 of 1996

5.5.3 Rules for accessing medical records

Medical records are confidential records that contain private health information of patients and therefore the patient's right to privacy should be considered at all times. The WHO (2006) suggests that the personnel who work with medical records should maintain confidentiality and be responsible for the prevention of unauthorised persons from accessing them. Moreover, the South African National Health Act (2003) requires that anyone who is in charge of a health record should install control measures to restrict unauthorised access to health records and their storage facilities. The legislation makes it an offence for anyone accessing or copying patient information without the patient's consent. Nine (82%) respondents indicated that there are definite rules that control access to patient folders. The researcher also noticed that there are restrictions on access to medical records. The storage of patient folders is located in the same office space used by the clerks. Patients and other unauthorised persons are prohibited from entering the storage area and room. The office door that leads to the clerk's office is always closed. The storage area for patient folders is also always locked. Although access to records was well controlled this may not be true in some healthcare service institutions. Reports in the local press about missing medical records in Medi-Clinic in Cape Town (*Sunday Times*, 2007).exposed the lack of control, lack of security and the violation of privacy on the storage of medical records. Clearly, this is against the stipulations of the existing

South African legal and regulatory framework for the management of medical records. For instance, the South African National Health Act no. 61 of 2003 states that a person in charge of healthcare information should set up control measures that prohibit access to the medical records. This is meant to be adhered to at all times. The Constitution of South Africa (1996) also grants all citizens the right to privacy.

5.5.4 Availability of records management policy

The WHO (2006) asserts that each country should develop policies to control the management of medical records. These policies and procedures should then be written down to ensure that they are adhered to. These policies should define the course of action adopted by the healthcare facility which is usually the responsibility of the hospital management and medical records committee. This study established that Victoria hospital operates within recognised policies for the management of medical records. Majority (73%) of the respondents confirmed that there is a policy guiding the management of medical records in the hospital. This was further corroborated by the Hospital Records Administrator. The Hospital Records Administrator indicated that the policy is implemented by the hospital management and line supervisors.

Chachage and Ngulube (2006) underscore the fact that many countries have legislations that require businesses and organisations to manage their records efficiently for easy access and retrieval. According to the Medical Protection Society (South Africa, 2012), a sensible medical records management policy that

incorporates a strong security control for records is key to safeguarding patients' confidential health information. This policy cuts across both computerised and manual medical records systems. According to this Society (South Africa, 2012), healthcare facilities should develop a medical records management policy which should be reviewed regularly to keep pace with new technological advances and legislative requirements. This helps promote efficiency in the delivery of healthcare services. Ndenje-Sichalwe et al. (2011) pointed out that the availability of policies is important in the creation and management of authentic, reliable and usable records.

5.5.5 Policy awareness

The policies for management of records provide a fundamental basis for accountability and protection of human rights. In the healthcare services policies are important in the management of medical records. The study by Ngoepe and van Der Walt (2009) established that legal and policy requirements for records management are seldom clearly communicated and as such some legislations and policies were not successfully implemented. The study established that Victoria Hospital has a records management policy by which its staff members are required to abide. The Hospital Records Administrator confirmed that policy awareness is an important aspect of the records management programme at the hospital. Records Administrator indicated that the policies are communicated amongst all healthcare professionals to ascertain that everyone is conversant with them. In addition, the Hospital Records Administrator stressed that the policies are disseminated during In-Service Training. This is consistent with Nengomasha (2009), argument that policies

once approved should be widely publicised to create awareness to all concerned. These views are supported by Ngoepe and van Der Walt (2009).

5.5.6 Disposal of medical records

The Medical Protection Society (South Africa, 2012) recommends that for a records management system to be efficient, it must include arrangements for archiving or disposing of dormant records, both paper and electronic, to provide space for new records, especially, paper records.

The best procedure to create enough space to accommodate new records is to formulate a disposal schedule. The study found that the Victoria Hospital does dispose of obsolete medical records. Six (55%) respondents indicated that medical records are preserved for a specified period while 5 (45%) respondents were unsure about the disposition of medical records at the hospital. For clarity seeking purposes, the researcher using (Appendix D) confirmed from the Hospital Records Administrator whom he confirmed and indicated that medical records are preserved for a specified period after that they are disposed of according to the requirements by the HPCSA (2008) medical records are disposed of after a certain number of years, after that the health institution may decide to disposed of the medical records.. The World Health Organisation (2006) suggests that medical records that have not been used for a number of years should be removed from the active file room to the inactive file room.

5.6 Section D: Security

Security for the management of medical records is linked to confidentiality and Human Rights. The Bill of Human rights under the Constitution of South Africa grants all citizens the right to privacy. A hospital should provide enough security for medical records. As a result, the hospital staff is mandated to exercise maximum security when creating, filing, and retrieving medical records to guard against unauthorised access and alterations to such records.

5.6.1 Physical security of medical records

Medical records are an integral part of healthcare service delivery and their confidentiality, privacy and security is essential for effective healthcare service delivery. They facilitate the continuity of patient care since they contain complete, accurate personal health information. The findings of this study established that at Victoria Hospital the security measures in place are meant to protect all medical records. The study found that the hospital keeps its medical records secured in special rooms in locked storage room. All respondents also pointed out that no one is allowed to take out any part of a medical record as it is the property of the hospital. Moreover, nobody is allowed access to folders except by permission of the medical superintendent or hospital manager. Medical information may only leave the hospital through the signature of the hospital manager.

This is consistent with the National Health Act (South Africa, 2003) and the Medical Protection Society (South Africa, 2012) which require that medical records be kept

where unauthorised people may have no open access to them. Any health information about patients should be sent under private and confidential cover, with appropriate measures, to ensure that it is not leaked. This is, however, may not be the case at all public healthcare institutions in the country. The local press, for example, reported cases of unauthorized access to confidential and private patient medical records from a public hospital in the Eastern Cape Province (*Daily Dispatch* 2010) and Western Cape Province (*Sunday Times* 2007).

The security of medical records is taken seriously all over the world. According to Steward (2005), the health department of the United States of America was required to adopt and implement standards to protect patient health information. This was done through the adoption of the Health Insurance Portability and Accountability Act (HIPAA) of 1996. The principal aim of the HIPAA was to outline the processes of privacy, security and the authenticity of patient health information. The United Kingdom also introduced the Data Protection Act of 1998 whose main purpose was to construct a framework for the privacy, security and confidentiality of medical data (Lederman, 2005).

5.6.2 Authenticity of medical records

Records Management Policy Manual (South Africa, 2006) suggested that since the public records like medical records are prone to various threats that may undermine their confidentiality they should be stored in areas where they will be protected from

unauthorised access and alterations. The study established that, in Victoria Hospital, medical records are kept in a locked file room to prevent unauthorised access. Even the door leading to this file room is kept locked to prevent any interference. All respondents pointed out that should there be to take out any of the records for purposes other than the use by health staff the originals are photocopied before they are handed out to maintain the originality and authenticity of the record. Interviews with the Hospital Records administrator revealed that medical records are protected against any alterations by colour coded paper.

According to the HPCSA (2008), no entry or information may be removed from a health record. Moreover, the Medical Protection Society (South Africa, 2012) requires that the entry made to a patient medical record should be keep its originality and must not to be deleted or amended even if it is found that it was erroneously done. This is meant to safeguard the originality of medical record since it must always remain intact and fully legible. The protection of data integrity ensures that the authenticity of the recorded information is not corrupted in any way.. According to the guidelines by the HPCSA (2007), an alteration to a medical record is unacceptable in the health profession for it is against the profession's work ethics. Moreover the National Health Act no.63 (South Africa, 2003) does not allow anyone to falsify, add, delete or change any information in a medical record. A change or anyone who includes false information in the medical record commits an offence and is liable for prosecution. The Medical Protection Society (South Africa, 2012) asserts that should there be any corrections to be made in a medical record, it should be corrected through the use of a single black line crossing out the error and amendments inserted. The date and reasons for the late entry should also be noted down. The Records Management Policy Manual (South Africa, 2006) also

recommends that records management policies and procedures of the health sector should lay down the standards of information to be added on the health record.

5.6.3 Tracking and tracing of medical records

An effective records management programme should have appropriate measures to safeguard and protect records against long term loss or temporary misplacement. This is only achievable through a proper records management system. According to Shepherd and Yeo (2003), the most important method to protect and avoid long term loss of records, especially the paper folders, is to document the borrowers and users of the folders. This will ensure that records are filed correctly in their original storage place on their return.

Victoria Hospital does have tracking and tracing measures in place to safeguard the protection of medical records against any loss or misplacement. The register used for tracking and tracing folders is kept in the Out-Patient-Department (OPD). The officials who borrow folders should sign this register. When the folder is issued out, it is indicated in this register. If it is issued to a patient, the patient uses it for the continuity of care and treatment until they get the medication at dispensary from where that patient will leave the folder. After treatment, patient folders are sent to the OPD for filing.

The Medical Protection Society (South Africa, 2012) stated that the healthcare institutions should plan for a records management system, and identify the filing classification system that will enable the tracking and tracing of medical records when issued out to users or borrowers. Where a need to borrow a medical record

arises, Shepherd and Yeo (2003) suggest that loans of records are initiated by completing the request form giving details of the requester, the unique number of the folder and the date of the request. In an electronic environment, the data from the request form is entered into a records management software system to keep track of the movement of records effectively so that they can be found when required.

5.6.4 Patient Identification

According to the IRMT (1999), patients report to the registration point where the clerks usually attend to them. When a patient arrives at the registration point, the clerk on duty must establish if the patient does have an existing folder. A new one may be created if no one exists.

The study found that patients are verified by making use of the hospital identity card issued to a patient after registration. This hospital identity card contains the folder number that has been assigned to the patient folder. The number written on the hospital identity card is a unique number used to retrieve and identify the patient folder amongst others. This is consistent with the WHO (2006) stipulation that data collection for patient identification and the verification of the existing medical record should be the first step by healthcare institutions in the promotion of healthcare service delivery. If the patient happens to have been in the hospital before, that patient is supposed to have a folder that contains her medical history. The folder is retrieved through the use of the folder number that corresponds to the hospital identity card given to a patient during the first visit. Should it be the patient's first visit, the clerk at work should create a new folder and the next number on the register should be assigned to the new folder.

5.7 Summary

In summary, this chapter deals with the interpretation and discussion of findings dealt with in the previous chapter. The interpretation gave the reader the overview of how the hospital under study conducts its daily activities in terms of medical records management practices. The chapter explore the findings pertaining the creation, use, maintenance and the preservation of medical records at the Victoria Hospital. The findings revealed that Victoria Hospital uses manual records management system in managing the medical records. The infrastructure for the maintenance of medical records management was also looked at in terms of equipment used for the storage of records. Best practices in terms of medical records management systems were explored in the findings. The findings discussed the legal framework that regulates the medical records management in the public sector like hospitals. Findings revealed that Victoria Hospital do comply with the national regulatory framework that governs the medical records management. There are challenges with the manual medical records management systems the hospital uses. The security and confidentiality of medical records were discussed. The findings revealed that security and confidentiality is observed and exercised but the manual records management system has its own challenges of retrieval and misfiling of records. Once the record is not found in its normal storage place, it is missing and condemns the service delivery. The efficient record keeping practices enhances the good quality service delivery, long waiting period always affects the delivery of services. The following chapter provides the summary, conclusion and recommendations of the study.

CHAPTER 6

Conclusions and recommendations

6.1 Introduction

The previous chapter discussed the findings of the study. This chapter the researcher summarizes the research findings and makes conclusions based on the findings. The chapter also presents recommendations aimed at improving some of the findings established by the study. The researcher also suggests an area of further research.

6.2 Summary of the findings

This sub-section provides the summary of the findings of the study are based on the research objectives which sought to:

- Describe the present records management practices at Victoria Hospital.
- Find out the existing infrastructure for the management of medical records
- Evaluate the compliance of patient medical records management in Victoria Hospital with the relevant legislative and regulatory requirements
- Find out about the security of the patients' medical records at Victoria Hospital.

6.2.1 Creation and management of medical records

The study established that Victoria Hospital uses a paper based manual medical records management system which is centralized. At the time of the study this system was serving the hospital without many problems. The few notable problems included the loss or misplacement of patient files which necessitated the opening of temporary files. The use of temporary files carried the risk of compromising the quality of health services given since the health professionals were unable to benefit from the previous healthcare history of a patient with a temporary file.

The accrual of medical records creation at the hospital was found to be moderate with Mondays identified to be the most notable peak periods for records creation.

Each new and revisiting patient had a single folder detailing their personal information and healthcare history. They were required to pay a once-off fee of R 20 the day the file was created.

6.2.2. Infrastructure for the management of medical records

The study established that the hospital has adequate space for the registration area which is also used for interacting with patients on any other issues besides registration. Personnel dealing with registration have sufficient working space and are situated in an area that is easily noticeable and approachable by outpatients.

The records are centrally filed and kept in well maintained filing equipment and storage place.

The entire records management programme of the hospital is under the supervision of the Hospital Records Administrator. The staff working on the records unit has been exposed to basic training on records keeping and seem to be conversant with legislation and regulations governing the management of records in general and medical records in particular. No mention was made of unique training on medical records management or use of information technology in medical records keeping.

6.2.3 Legal and regulatory requirements

The study established that the hospital complied with the relevant legal and regulatory requirements for the management of medical records.

The policies and regulations are appropriately communicated to staff from time to time to raise their awareness as well as the importance of complying with and implementation such policies and regulations.

6.2.4 Security of medical records

The results of the study indicated that the hospital keeps all medical records in secured and safe and lockable storage rooms. The security is aimed at safeguarding the originality and authenticity of the records against any possible alterations or theft.

The study findings also established that the hospital controls the movement of medical records by making sure that each borrowed medical record is indicated in a register. This is used as a tracking system to ensure that medical records are not easily misplaced and are properly accounted for.

6.3 Conclusions

From the summary of the findings the following conclusions can be made.

6.3.1 The creation, maintenance, use and disposal of medical records at the Victoria hospital are currently effectively under control. This is supported by the fact that there is a consistent system of creating records, classification and retrieval. This has resulted in few missing or lost records. Medical records are directly related to a quality healthcare service delivery. A failure to retrieve a patient folder that contains medical record of that particular patient may have implications on the medical prescription, reordering of diagnostic tests which are sometimes expensive to reproduce and the loss of precious patient health information history. Victoria Hospital falls under the second level of health services in the District Hospitals. The District Hospitals uses manual records management system which has its flaws of access, increase of paper files, retrieval and lost or missing files.

6.3.2 There is adequate infrastructure for the management of medical records at the hospital at least at present. The recent refurbishing of the hospital physical infrastructure has provided adequate equipment, and working and outpatient space for the management of records. The current staff complement seems adequate for the task of managing the records. Medical records are created on a daily basis resulting on the increase of volumes of files stored on the shelves which in future could be a hindrance to timeous healthcare service delivery. In a tightly packed shelf the paper files get easily damaged, the spine of the file become soft and brittle and that could shorten the life span of a record.

6.3.3 The hospital complies with all the legislative and regulatory requirements pertaining to medical records keeping. Healthcare workers in Victoria Hospital sound quiet conversant with the policies and procedures that govern the creation, use and maintenance of medical records. The disposal of medical records needs to be worked on by the hospital as the creation of paper medical records increases on a daily basis. A sound disposal policy ensures the adequate for records storage.

6.3.4 The security and storage of medical records are adequate. Medical records are stored and locked on a safe place that is far from the reach of an authorised person. However, strict measures in the wards should be exercised to prevent the folders from unauthorised access. The paper medical records can only be found in one place at a time, the collection of these records from various hospital units depending from where the patient left it can harm the service delivery. The folder tracking and trace system could also affect and impact the healthcare service delivery as all the systems are done manually.

6.4 Recommendations

An effective and efficient records management programme is important to any organization. According to Kemoni and Ngulube (2008) records management is an important component to the survival of any public sector. This study aimed at finding out the management of medical records at the Victoria hospital. Following the findings and the conclusions the following recommendations are made.

6.4.1 Records management system

The findings of the study established that Victoria Hospital is using manual records management systems. The manual record managed system has its flaws which Victoria Hospital is not immune from them. The problems of patient folder retrieval, missing or lost files were reported in other countries as discussed in chapter two. Medical records serves as communication medium amongst the treating physicians and therefore the missing medical record breaks that communication and makes it difficult to make decisions on the diagnosis and treatment of a patient. Time spent in the retrieval of patient folders affect the quality of service. It is against the problems mentioned above that the developed countries invested on the use and integration of health information technology in hospitals. In future, the study recommends the implementation and the use of electronic medical records in Victoria Hospital. Electronic Medical Records promotes the delivery of quality service, enhanced service and timeous healthcare service. Efficient and effective healthcare service delivery is the envisaged service for the citizens.

6.4.2 Infrastructure

In terms of infrastructure, Victoria Hospital has been recently refurbished. The study found that the space where the records clerk desk is situated is adequate. Registration area or reception area where patients first report when coming to the hospital and the records storage place is satisfactory. The infrastructure that is currently in use by the Victoria Hospitals is adequate but need to be reconsidered in the near future. The hospital uses shelves and filing cabinets in the storage of medical records and consumes a lot space that could have been used in other

hospital business operations. The study recommends that the movable shelves be used instead of the files that are currently in use. The movable shelves consume less space and are manually controlled and power controlled. Also the study recommends the use of electronic medical record management system as all the records will be stored on a computer system. Through the electronic medical records management system, the patient health information history will always be available when needed by the physicians. One of the benefits of electronic medical records is its ability in information sharing; portability, patient health information is accessible in any of the health sector.

6.4.3 Security of medical records

It is necessary that the hospital keeps the medical records safe and secured. Security and confidentiality is always a biggest question in keeping medical records. Presently, the hospital keeps the medical records under control but the issues of security need to be strengthened by protecting the records against lost and missing folders. To protect the content of patient health information, the study recommends the use of cryptography, steganography and encryption against unauthorised access. In terms of the confidentiality issues, the study recommends the use of passwords to authenticate the right person for the health information. Above all, use of electronic medical records is more secured and confidential than its counterpart.

6.5 Area of further research

This study focused on the management of medical records only at the Victoria Hospital. Victoria Hospital do produce other records either than the medical records, the study recommends that another study that will focus on other records be

conducted. Since the hospital is currently using the manual records management system, the study recommends another study that will look at the feasibility of the implementation of the electronic medical records system.

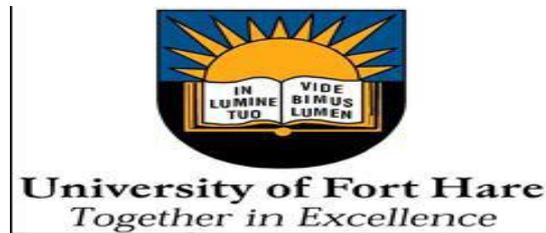
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Appendix A: Questionnaire for healthcare service professionals



Please indicate by putting a cross sign (X) or a tick sign (✓) next to the correct answer and explain where possible

Section A: Biographical information

1. Please indicate your gender

Male Female

2. Please indicate your age

15 – 25 yrs 25 – 35 yrs 35 – 45 yrs 45 + yrs

3. What is your job title in this hospital?

Doctor Nurse Clerk Other

4. What is your highest qualification acquired?

Matric Diploma Degree Other

5. Have you received any special training in the maintenance of medical records?

Yes No

6. How long have you been employed in this hospital?

0 – 5 yrs 5 – 10 yrs 10 – 15 yrs +15 yrs

Section B: Medical records management practices

7. How is a medical record created or received in this hospital?

8. How many medical records are created or received on a daily basis?

0 – 5 5 – 10 10 – 15 15 – 20 25 +

9. How are these medical records arranged and classified?

10. How are medical records retrieved?

11. What do you use in the maintenance of medical records?

Filing Cabinets Shelves Computers

12. Does the hospital have a records management system in place?

Yes No

13. Does the programme include the management of medical records?

Yes No

14. Which type of records management system does the hospital use?

Centralised Decentralised Not Sure

15. If the patient file is not located in its normal place, what do you do?

16. Is it proper to create a new patient file when the old one is not found?

Yes No

17. If yes, what effect does it have on the continuity of healthcare service delivery?

18. How long does it take to retrieve a patient file?

5 minutes 10 minutes 15 minutes + 15 minutes

16. Who is responsible for the overall management of medical records in this hospital?

Records Manager Records Officer Administration Clerk

17. Who is responsible for collecting medical records from different hospital units?

Records Manager Administration Clerk Nurse Other

18. How frequent are the medical records collected from other units?

Hourly Daily Weekly Other

19. Are the in-patient records kept separate from the out-patient records?

Yes No

Section C. Infrastructure for the management of medical records

20. Do you consider the patient registration space and the waiting are as adequate?

Yes No

21. Is there anything that is given to the patient after opening a new patient folder?

Yes No

22. Which of the following equipment does the hospital use to keep the patient folders?

Filing Cabinets Shelves Computers

23. Where are the medical records kept in this hospital?

Registry Administration Clerk's Offices Computers

Other – please specify

24. Are all medical records kept in one place?

Yes No Not sure

25. In which format are they?

Paper Electronic Both formats

26. Is the current space enough for registration and service to patients?

Yes No Not sure

27. Does the hospital have separate off sites to store medical records?

Yes No

Section D. Legal and regulatory framework

28. Does the hospital follow any existing legislation and guidelines that regulate the creation of medical records?

Yes No Not Sure

29. Do you have rules governing access to medical records in this hospital?

Yes No Not Sure

30. Is access to medical records open to everyone?

Yes No Not Sure

31. Does the hospital have records management policy for managing medical records?

Yes No Not Sure

32. Are all hospital staff conversant with such a policy?

Yes No

33. How are medical records disposed of?

Permanent preservation Preserved for Specified Time

Destruction Other – please specify

34. Does the hospital aware of the national legislations that regulates the management of patient health information?

Yes No

Section E: Security, of medical records

35. How are medical records secured?

Strong Rooms Burglar Proofed Rooms
Special Rooms Other – please specify

36. How is the movement of patient folders within the hospital units regulated?

37. Is there any system to keep track of borrowed patient folders by other hospital units?

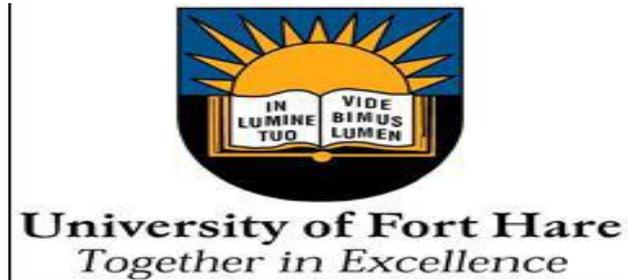
Yes No

38. What measures are there to ensure the security of patient health information from being accessed by unauthorised persons?

39. How is the patient health information protected from unauthorised alterations?

Thank you,

Appendix B: Questionnaire for healthcare service users



Please indicate by putting a cross sign (X) or a tick sign (√) next to the correct answer and explain where possible.

Biographical information

1. Please indicate your gender

Male	
Female	

2. How old are you?

16 -25 years	
25 -35 years	
35 -45 years	
+45 years	

3. Is it your first time visit to this hospital?

Yes	
No	

4. What is required of you when visiting the hospital for the first time?

5. What do you give to the clerks for them to retrieve for your folder if you have been to the hospital before?

6. Do you always bring your hospital card when visiting the hospital?

Yes	
No	
Not sure	

7. Do you always get your old patient folder?

Yes	
No	
Not sure	

8. Have you ever experienced a problem of a lost folder or a misfiled folder?

Yes	
No	

9. If yes, how did it affect your treatment?

10. Do you always get your folder on time?

Yes	
No	
Not sure	

11. Do you normally read your medical record or go through the whole record?

Yes	
No	
Not sure	

12. Have you ever rectified any mistakes or any medical record that does not belong to you in your folder?

Yes	
No	
Not sure	

13. During the follow-up visits, where do you normally get your patient folder?

Out Patient Department (OPD)	
Surgical Wards	
Pharmacy	
Other (please specify)	

14. Does it include all your health information and medical care notes?

Yes	
No	
Not sure	

15. Where do you normally get your medicines after examinations?

OPD	
Dispensary	
Other – please specify	

16. How does it take for you to get your medicines from the dispensary?

Immediately	
10 – 15 Minutes	
Other	

Thank you for your cooperation,

Appendix C: Observation Schedule



1. How are medical records created in the hospital?
2. Where are they stored and how are they filed?
3. How is the retrieval of medical records?
4. How the patient folder is verified that it belongs to the right patient?
5. How are medical records secured and preserved?
6. Is the medical record storage site protected from unauthorised accessing?

Appendix D: Interview Schedule



Interview with the Hospital Records Administrator

1. What national legal framework does the hospital use in managing medical records?
2. Who is responsible for the implementation of such a policy?
3. How is the policy communicated to hospital staff?
4. What measures are in place to ensure the security of patient health information?
5. What measures are there to ensure the security of patient health information from unauthorised persons?
6. How is the patient health information protected from unauthorised alterations?
7. What are the precautionary measures to keep track of borrowed patient folders by other hospital units?
8. How is the disposal of medical records in Victoria hospital?

Appendix E: Request Letter

737 Dewey Street

Alice

5700

10 December 2012

The Manager

Victoria Hospital

Alice

5700

Dear Sir/ Madam

A request to conduct research in Victoria Hospital

The letter serves as a request for your approval to conduct a research study in your institution. I am currently a Masters student in the Department of Library and Information Science at the University of Fort Hare. The study is about the Role of Medical Records Management Programme in support of healthcare service delivery in Victoria Hospital. The purpose of the study is to investigate the extent to which the current records management system supports the delivery of healthcare services.

The results of the study will benefit the hospital management in quest to improve healthcare service delivery to their customers. The recommendations by the study will also contribute towards the improvement of customer satisfaction by enabling the users of the service to get quick and quality healthcare service. The information gained will assist the administrative officers who are directly affected by the records management practices to render service without delays caused by the waiting periods in the registration area.

Yours faithfully,

Pyrene Bokwe

Email: ybokwe@ufh.ac.za

Appendix F: Introductory Letter

**Department of Library & Information
Science**
Faculty of Social Sciences & Humanities
2nd Floor, Psychology Building
Alice Campus
Tel: 040 602 2211 Fax: (086) 628 2449 | Mobile:
0822004728
| Email: fkhayundi@ufh.ac.za |



12 December 2012

Manager
Victoria Hospital
Alice
Dear Madam

RE: Mrs P.Bokwe -Student Researcher

The above named is a registered student in this Department pursuing a Masters degree in Archives and Records management. She is pursuing her studies through research which will end up with the writing of a dissertation. Her topic of research is ***The role of medical records management in the delivery of healthcare services in public hospitals in the Eastern Cape Province.*** In order to obtain data for the research the student plans to visit your records office and interview staff as well as observing how the creation, management and disposal of records influences healthcare service delivery. We shall be very grateful for the assistance you and other relevant parties in your institution will be giving her.

Kind regards

A handwritten signature in black ink, appearing to read 'FE Khayundi', is written over a horizontal line.

FE Khayundi
Senior Lecturer/Supervisor

Appendix G: Approval Letter



Province of the
EASTERN CAPE
HEALTH

Room 119 • **VICTORIA HOSPITAL** • Ntselamanzi Rd • ALICE • Eastern Cape
Private Bag X1300 • ALICE • 5700 • REPUBLIC OF SOUTH AFRICA
Tel.: +27 (0)40 6531 1141 • Fax: +27 (0)40 6531 1939 • Website: www.ecdoh.gov.za

10 December 2012

Attention : Mrs Pyrene Bokwe

This Communiqué serves to acknowledge the request of permission to conduct a research study on medical record management in our Institution. The request is therefore granted.

Wishing you good luck on your studies.

Yours sincerely


Mrs N.R. Somngcuka AMN

Appendix H: Policy and Procedure



Province of the Eastern Cape

Iphondo leMpuma-Koloni

ISEBE LEZEMPILO

DEPARTMENT OF HEALTH

VICTORIA HOSPITAL

POLICY AND PROCEDURE

RETRIEVAL OF PATIENT FILES

POLICY STATEMENT

- The date and time when the file is requested in the OPD must be recorded on the Retrieval Book and be signed out for.

Procedure on Patient Files :

- 1) Patients arrives at OPD Department with their ID books and appointment cards.
- 2) The Records clerk then draws the files according to the date of birth and complete a file control card (to identify where the file is going and by whom it was taken).
- 3) When patients received there medication at pharmacy the files are then returned to the Records Department.
- 4) If a patient only saw the doctor at OPD the file is also sent back to the Record Department.
- 5) The date and time when the file is requested in the OPD must be recorded on the Retrieval Book and be signed out for.
- 6) The doctor and the nurses requesting the file should fill in a request form for the retrieval of a patient file from the OPD.
- 7) The Ward Clerks should also sign against the signature of the requester to ensure safety of the patient files.
- 8) The OPD supervisor must also sign out a file that is retrieved.
- 9) All health professional should ensure that the contents in the patient file is strictly confidential.

Appendix I: Copy of a signed consent form

NAME OF APPLICANT

Ethics Human 2011

<<Approved

>>

OFFICE USE ONLY

Ref:	Date:
------	-------

answering questions there are no right and wrong answers. When we ask questions about the future we are not interested in what you think the best thing would be to do, but what you think would actually happen. (*adapt for individual circumstances*)

If possible, our organisation would like to come back to this area once we have completed our study to inform you and your community of what the results are and discuss our findings and proposals around the research and what this means for people in this area.

INFORMED CONSENT

I hereby agree to participate in research regarding I understand that I am participating freely and without being forced in any way to do so. I also understand that I can stop this interview at any point should I not want to continue and that this decision will not in any way affect me negatively.

I understand that this is a research project whose purpose is not necessarily to benefit me personally.

I have received the telephone number of a person to contact should I need to speak about any issues which may arise in this interview.

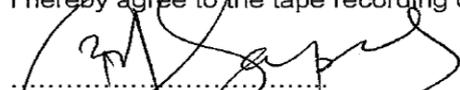
I understand that this consent form will not be linked to the questionnaire, and that my answers will remain confidential.

I understand that if at all possible, feedback will be given to my community on the results of the completed research.


Signature of participant

Date: 28/06/13

I hereby agree to the tape recording of my participation in the study


Signature of participant

Date: 28/06/13