MANAGEMENT OF MEDICAL RECORDS IN SUPPORT OF PRIMARY HEALTH CARE SERVICES OF DIEPSLOOT CLINICS IN GAUTENG PROVINCE OF SOUTH AFRICA

by

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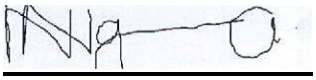
DECLARATION

I, **Nakanani Ngwenya**, student number: **55771548** declare that management of medical records in support of primary health care services of Diepsloot in the Gauteng province of South Africa is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

I further declare that I submitted the dissertation to originality checking software and that it falls within the accepted requirements for originality.

I further declare that I have not previously submitted this work, or part of it, for examination at UNISA for another qualification or at any other higher education institution.

Date 04 November 2019 Signature 

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DEDICATION

This dissertation is dedicated to my kids Angel Nomthandazo Zulu and Blessings Ntandoyenkosi Zulu. This dissertation is also dedicated to my late father *Tate* Pollet Tjipaya Ngwenya. ***Muyezele nekunyalala Mokoena.***

ABSTRACT

The study investigated the management of medical records in the Primary Health Care services (PHCs) of Diepsloot. The study investigated the regulatory framework, records infrastructure, records security, records management staff skills and the filing system. A qualitative design guided by the interpretive paradigm was used to guide the case study. Interviews, focus groups, and observations generated data from 50 participants.

The study revealed that the regulatory instruments used to manage records lack implementation and compliance. There was a lack of security measures, a shortage of records management infrastructure and inconsistency in the filing system. There is a low level of skill in the records management staff. The study recommended the implementation of a regulatory policy that will guide and ensure effective governance of records in PHCs. Records should be secure from misuse by unscrupulous individuals. PHC records need to be managed by experienced professionals. The filing system should be easily accessible.

Keywords: medical records, Primary Health Care, legal and regulatory framework, infrastructure, security, skills and competencies, Filing, Diepsloot, and South Africa.

ABSTRAKTE

Die studie het ondersoek ingestel na die bestuur van mediese rekords in die Primêre Gesondheidsorgdienste (PHC's) van Diepsloot. Die studie het ondersoek ingestel na die regulatoriese raamwerk, rekord van infrastruktuur, rekord sekuriteit, vaardighede vir rekordbestuur en die liasseerstelsel. 'n Kwalitatiewe ontwerp gelei deur die interpretatiewe paradigma is gebruik om die gevallestudie te lei. Onderhoude, fokusgroepe en waarnemings het gegewens van 50 deelnemers gegenereer.

Die regulatoriese instrumente wat gebruik word om rekords te bestuur, het geen implementering en nakoming nie. Die studie het aan die lig gebring dat daar 'n gebrek aan veiligheidsmaatreëls was, 'n tekort aan infrastruktuur vir rekordbestuur en teenstrydigheid in die liasseringstelsel. Die personeel in rekordbestuur het 'n lae vlak van vaardigheid. Die studie het die implementering van 'n regulatoriese beleid aanbeveel wat die doeltreffende bestuur van rekords in PHC's sal lei en verseker. Rekords moet beskerm word teen misbruik deur gewetenlose individue. PHC-rekords moet deur ervare professionele persone uitgevoer word. Die liasseerstelsel moet maklik toeganklik wees.

ISIFINYEZO

Lolu cwaningo luphenywe ngokuphathwa kwamarekhodi ezokwelashwa emnyangweni Wezokunakekelwa kwempilo okuyisisekelo (i-PHCs) eDiepsloot. Ucwaningo luphenywe ngohlaka lokulawula, ingqalasizinda yamarekhodi, ukuphepha kwamarekhodi, amakhono okuphathwa kwamarekhodi nohlelo lokufayila. Umklamo olungaqanjwa uqondiswa yi-paradigm yokutolika wasetshenziselwa ukuqondisa ucwaningo lwesigameko. Izingxoxo, amaqembu okugxila kanye nokubukwa kukhiqize idatha evela kubahlanganyeli abangu 50.

Izinsizakusebenza zokulawula ezisetshenziselwa ukuphatha amarekhodi zingenakho ukusebenza nokuhambisana. Ucwaningo luveze ukuthi bekukhona ukuntuleka kwezindlela zokuphepha, ukushoda kwengqalasizinda yokuphathwa kwamarekhodi kanye nokungahambelani ohlelweni lokugcwalisa. Kunezinga eliphansi lekhono kubasebenzi bokuphathwa kwamarekhodi. Ucwaningo lincome ukusetshenziswa kwenqubomgomo yokulawula ezohola futhi iqinisekise ukuphathwa kwamarekhodi kuma-PHCs ngendlela efanele. Amarekhodi kufanele avikeleke ekusetshenzisweni kabi ngabantu abangathembekile. Amarekhodi we-PHC adinga ukuqhutshwa ngochwepheshe abanolwazi. Uhlelo lokufayila kufanele lutholakale kalula.

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LIST OF ABBREVIATIONS

ANC: African National Congress

DHMIS: District Health Management Information System

DOH: Department of Health (National or Provincial in South Africa)

EDMS: Electronic Document Management Systems

EDRMS: Electronic Document and Records Management System

EMR: Electronic Medical Record

ERMS: Electronic Records Management System

HIV: Human Immunodeficiency Virus

HPCSA: Health Professions Council of South Africa

ICD: International Classification of Diseases

IRMT: International Records Management Trust

ISO: International Standards Organisation

MPS: Medical Protection Society

MR: Medical Record

NARS: The National Archives and Records Service of South Africa

NARSSAA: The National Archives and Records Service of South Africa Act (Act No. 43 of 1996 as amended)

NARSSAR: National Archives and Records Service of South Africa Regulations **(**R158 of 20 November 2002)

NHA: The National Health Act (Act No. 61 of 2003)

NHIS: National Health Information System

PAIA: Promotion of Access to Information Act, (Act no. 2 of 2000)

PAJA: The Promotion of Administrative Justice Act (Act No. 3 of 2000)

PHC: Primary Health Care

PHCs: Primary Healthcare Services

PHS: Provincial Health System

PMI: Patient Master Index

PAIA: The Promotion of Access to Information Act (Act No. 2 of 2000)

SA: South Africa

WHO: World Health Organisation

CHAPTER ONE

INTRODUCTION AND BACKGROUND OF STUDY

1.1 INTRODUCTION

The Primary Health Care (PHC) sector generates medical records daily as they interact with patients. The primary purpose of a medical record is to accurately give an account of a patient's life and medical history. These records generated by primary health care centres must be properly managed, maintained and stored to ensure their effective utilisation by medical staff, patients, researchers, and medical records experts as well as the state. The Medical Protection Society (MPS) (2014:26) stipulates that the maintenance of good medical records facilitates more effective continuity of care and is an essential component of good professional practice.

Edwards (2008:2) defines a medical record as "a clinical, scientific, administrative and legal document relating to patient care in which sufficient data is written in the sequence of events to justify the diagnosis, treatment and the results." As such, medical records generally originate from the information collected from patients seeking medical attention from various facilities that provide health care services. Medical records are required to document significant facts, findings, and observations about a patient's health history, including past and present illnesses, medical examinations and tests, treatments given, and the outcomes of such treatments.

Medical records underpin a PHC facility's operations as effective healthcare to patients depends on the availability of accessible medical records. Despite the value of these records, providing an appropriate record management system is a constant struggle in the primary health sector. Saudi (2013:1-2) notes that no organisation can achieve its goals without maintaining its records and these records are the backbone of the entire operation of primary health care centres. MPS (2014:4) stipulates that good medical records should be comprehensive, contemporaneous, accurate and attributable.

In South Africa, the Department of Health is responsible for the creation and maintenance of medical records to facilitate the rendering of health care services to citizens through its clinics and hospitals. The District Health Plan (2012:6) provides for the collection of health data

daily at health facilities by health practitioners to enable the monitoring and evaluation of priority national health programmes. Patients' medical records may be used, for example, for nursing audits, or when conducting regular meetings for hospitals. In addition, health records are managed to facilitate decision-making e.g. to justify the allocation of resources to hospitals and clinics. Medical records also provide a legal record of care given and act as a source of data to support resource allocation, performance monitoring and service planning. In addition, medical records are also very useful at the local level where they are applied in describing and explaining the health trends within the community. In addition, community leaders require precise information relating to community-specific health problems as well as the resources required by the PHC to effectively deal with these problems.

Section 27 of the Constitution of the Republic of South Africa, 1996 provides that everyone has a right to access healthcare services. In this light, the government formulated the National Health Plan, whose primary objective is to meet the health needs of all the inhabitants of South Africa (Dennill, King and Swanepoel 1999:35). As part of this mandate, the National Health Act (Act no. 61 of 2003) mandates the National Department of Health with the establishment, implementation and maintenance national health information systems. This entails facilitating and coordinating the health information systems within provincial health departments, district and local municipalities, as well as private health sector players in order to achieve a complete and comprehensive national health information system. Thus, health facilities including primary health care clinics collect and manage medical records which feed directly into this national health information system (District Health Management Information System 2011:23). In addition, the Constitution, in section 32 (1) (a) also provides that everyone has the right of access to any information held by the state.

It is the responsibility of the state to ensure that this right is realised. In terms of section 195 (1) (g) of the same Constitution of the Republic of South Africa Act, 1996 (Act 108 of 1996) transparency must be fostered by providing the public with timely, accessible and accurate information. Medical records chronicle the procedures followed by medical professionals when treating or attending to patients' medical needs. A proper medical records management system is inevitable as it serves as the organisation's store of memory. According to the World Health Organization (WHO) (2006:8), medical records are used for:

- Documenting the course of a patient's illness and treatment;

- Communicating between the different health care professionals providing care to the patient;
- Continuing care of the patient;
- Research data for specific diseases and their treatment; and
- The collection of health statistics.

Health care workers in the clinics in Diepsloot, Johannesburg, often struggle to provide health services to patients in a timeous and effective manner because they lack access to efficient records management systems. MPS (2014:5) notes that to be useful, medical records should contain all the necessary information that members of the healthcare team, or future carers, can readily rely on. This information includes, for example, the patient's past as well as present clinical assessments, past and present treatment courses, relevant family and social histories, lifestyle and beliefs. Hence, this research was aimed at examining the extent of the knowledge, and the practice of records management within clinics in Diepsloot.

The key goal of records management is to maintain records authenticity and to ensure their accessibility, safety, security, confidentiality and privacy throughout their life cycle (Kalusopa & Ngulube 2012:203). In light of the above discussion, it is discernible that medical records form an important resource for decision making, protection of patient rights and a pillar of accountability for the PHC sector.

The management of medical records is an integral component in rendering good professional practice in primary health care. Hence, it is on this premise that this research is set to examine some challenges that affect the management of records in two government primary health institutions of Diepsloot.

1.2 BACKGROUND AND CONTEXTUAL SETTING OF THE STUDY

This study will focus on the management of medical records in support of the existing primary health care programs in Diepsloot clinics, which fall under the City of Johannesburg Region A. Diepsloot is a densely populated township in the northern suburbs of Johannesburg. There are two clinics in Diepsloot, namely the OR Tambo Clinic and Diepsloot South Clinic.

These clinics provide services such as chronic treatment, family planning, mental health, oral health, nutritional health, personal health, antenatal care as well as child immunisation on an outpatient basis. The clinics also provide home-based care for the elderly and sick people. Green & Bowie (2011:12) state that primary health care facilities are the point of first contact between the patient and the health care system. Services at this level include general medical, dental, ophthalmic and pharmaceutical.

The study set out to perform an in-depth investigation into the extent to which matters related to the management of patients records, such as infrastructure, security, staff records management skills and competence, and confidentiality of medical records were addressed at the two PHCs. The other driving force for conducting this study was to examine whether the existing records management practices aid or undermine the primary health care services in Diepsloot.

1.2.1 Structure of the health delivery system in South Africa

An understanding of the health care delivery system of a country enhances an appreciation of the importance of medical records. Jabson (2015:3) noted that there are about 4200 public health facilities in South Africa, with each facility providing services to an average of 13,718 persons. South Africa's public health delivery system is organised into a hierarchical structure (Steve Biko Academic Hospital: 2017). In this hierarchy, primary health clinics form the foundation of the public health system as they are generally the first line of access for people needing healthcare services (Jabson 2015:3). From clinics, patients needing more sophisticated treatment are referred to district hospitals, which serve as the secondary tier of the public healthcare system in South Africa. Sitting above the district hospitals are the academic hospitals, which provide even more advanced diagnostic procedures and treatment facilities. The National Department of Health plays an important role in ensuring the equitable distribution of resources between these tiers of the healthcare system as well as in the monitoring and evaluation of the performance of these facilities.

Masuku (2013:4) notes that a patient may move from a primary health facility up the hierarchy to a District hospital then Tertiary hospital and finally the Central hospital through a referral system. The referral system creates information sharing among different health care institutions that are at the different levels. Masuku (2013:4) further argues that this

necessitates the proper records management in health care institutions to facilitate continuity of care, i.e. the district hospitals should be able to carry on from where the clinics left by referring to a comprehensive record of the patient's past and current clinical assessments and treatment. However, it has been noted that currently many patients are seen at an inappropriate level without following the proper referral system, which in turn escalates costs (Department of Health 2010:5).

In Diepsloot PHC, patients with chronic diseases, or whose state of health is not improving, are referred to the Charlotte Maxeke Academic Hospital, for further treatment. It is of paramount importance that there must be a proper record-keeping system at local clinics. Without access to proper medical records, it is very easy for a patient to receive the wrong treatment or medication, sometimes with tragic consequences (Ewing 2007:49). District Health Management Information System (DHMIS:2011) policy states that the referral system must be done in such a way that when patients are transferred to the provincial hospital, the medical staff in those hospitals will know what activities have been done to the patient.

2.2.2 Historical perspective of the PHC in South Africa

One of the most important international landmarks in the development of primary health care systems is the 1978 Alma Ata Declaration (WHO 1979). The Alma Ata called for urgent and effective action at both national and international levels aimed at the development and implementation of primary health care throughout the world, and in developing countries in particular.

Considering the history of the PHC, it would, therefore, be difficult to exclude the existence of medical records from the time when the health system came into existence because medical records have always been found to document the health delivery service to patients. Roper & Miller (1999b:33) note that when hospitals first began to keep patient case notes, the records were often maintained in bound volumes, where the details of different patients were kept together within a single volume. This inevitably caused difficulties when, for example, patients sought treatment at a different clinic or ward.

At the end of the apartheid era, the South African health system was fragmented. The democratic government thus set about the task of transforming this system into a single National Health System, based on equity and accessibility to all. Since then, there has been

some significant progress towards bringing healthcare services to many previously under-serviced areas. This is in keeping with sections 27 and 28 of the Constitution that provide the right of access to health care including reproductive health care for everyone, for no one to be refused emergency medical treatment, and for every child to have the right to basic health care services. These developments allowed people who could not otherwise afford the health services to have access to free services, hence the creation of more records and the need for proper records management.

1.3 RESEARCH PROBLEM

The researcher, as a resident and regular user of the facilities, has observed over time the delays in accessing services in Diepsloot primary health care centres. Chikuni & Njama (2010:24) note that the long waiting periods for records requested from the Health Information Unit is an indication of problems arising from poor retrieval and filing systems. Patients are often seen in one of the clinics waiting for their files, which may be missing. In cases where the patient is given his/her file, the file may be torn, leading to loss of important personal information. MPS (2014:11) states that good records management makes everybody's life easier and facilitates continuity of care, reducing the risk of adverse incidents through misplaced or untraceable records. For data to be regarded as of good quality, it must be complete, consistent, correct, timely, accurate, valid and relevant to health programme (District Health Management Information System 2011:28, Williams & Stoops 2003:280). Like any other institution, Primary Health Care needs easy access to records. This will facilitate quick, effective and quality service delivery to its users. There is, therefore, a pressing need for the availability of an effective records management programme which enhances easy and timely retrieval of information. It is a fundamental right of every South African citizen to access healthcare services. It is also their right that their personal information should be secured.

1.4 RESEARCH AIM

The aim of this study was to investigate how medical records management supports the primary health care services of Diepsloot in the Gauteng Province of South Africa, with an intention to propose improvement strategies**.**

1.5 RESEARCH OBJECTIVES

The following research objectives have been identified:

1. To assess whether the medical records management policies and procedures support the management of patient records in Diepsloot clinics;
2. To examine the state of medical records management infrastructure for medical recordkeeping in Diepsloot clinics;
3. To establish security measures relating to the management of medical records at the Diepsloot clinics;
4. To determine appropriateness of the filing systems followed in the management of medical records in Diepsloot clinics;
5. To establish knowledge and competencies of the records management staff in the management of medical records in the Diepsloot clinics; and
6. To propose recommendations that can improve the general management of primary health care records in Diepsloot clinics.

1.6 RESEARCH QUESTIONS

The following research questions have been formulated.

i) Are there any relevant policies and procedures governing the management of medical records in Diepsloot clinics?

ii) How is the infrastructure used for the storage of medical records in Diepsloot clinics?

iii) What security measures are in place for the management of medical records in Diepsloot clinics?

iv) What are the filling systems that are in place for management of medical records at the Diepsloot clinics?

v) What are the professional skills and competencies of the records management personnel?

vi) Which recommendations can be proposed to improve the general management of primary health care records in Diepsloot clinics?

1.7 SCOPE AND DELIMITATIONS OF THE STUDY

This research study covered the management of medical records in two primary health care centres of the Diepsloot area only, namely the OR Tambo clinic and Diepsloot South clinic. Diepsloot South clinic and OR Tambo clinic were chosen as they form the total number of clinics in Diepsloot. Administrative, financial and personnel records in these clinics were not covered as the study focuses on the personnel who deal with medical records only. The target population included managers, medical records staff, nurses, laboratory technicians and community health workers. The study population did not include patients as they are not directly involved in the management of medical records. This study focused on the legislative and regulatory policies in the management of PHC records, infrastructure, records management personnel skills and competencies, medical records filing system, handling of medical records and security of medical records.

1.8 JUSTIFICATION OF THE STUDY

One of the most critical aspects of any research is building upon what other researchers have done (Powell and Connaway 2004:255). In this study, it was entirely appreciated and acknowledged that several studies on the management of medical records have been carried out by researchers like Chikuni and Mnjama (2010), Katuu (2015), Marutha (2011), Marutha (2016), Masuku (2013) and Pyrene (2015). Upon an extensive study of the previous South African masters and doctoral dissertations in the field of information science looking into the health sector, it was noted that the aforementioned researchers mainly emphasised on the secondary health sector, which are District and Provincial hospitals. The gap still exists in the field of records management, particularly medical records management in the primary health care level and more so in Diepsloot. This study is therefore aimed at filling this gap.

This research study sought to address the issues and concerns that were missing from these other previous researches. One of the fundamental reasons for conducting research is to add to the body of knowledge and find clarification to existing problems, which in turn will help in social development. The results of the study contributed to enhancing the understanding of the importance of a sound records management programme at a primary health care level. Stakeholders will benefit from this research, especially its strength and applicability as

baseline information to formulate further research and the implementation of corrective measures.

1.9 OVERVIEW OF THEORETICAL FRAMEWORK

A theory has been defined as "a systematic view or speculations that help in the understanding of something" (Eastwood 1994:122-123). Ocholla & Le Roux (2011:5) are of the view that the understanding, guidance and execution of a theoretical framework in research is problematic to many novice researchers and even established researchers. Ocholla & Le Roux (2011:5) further note that University postgraduate students at both Masters and Doctoral levels in many universities find theoretical framework identification, conceptualization and application in their studies quite daunting, and misconceptions of theoretical frameworks arise from time to time. However, the researcher found it imperative to articulate the theoretical framework that guided the study. The theoretical framework for the research subscribed to the principles of good records management based on ISO 15489-1 (2016) standards. These standards embody the core concepts and principles for efficiently and systematically controlling the creation, receipt, maintenance, use and disposition of records.

Thus, the major theories that characterise the records management profession include the principle of *respect des fonds,* the principle of levels of arrangement and description, the life cycle model originating from T.R Schellenberg's original thoughts from 1956 as cited in Schellenberg (1956) and the continuum model formulated by Upward (2000:23). The study, however, only focussed on the life cycle model and the continuum model, as they are the dominant models used in the management of current records. The principle of *respect des fonds* and the principle of levels of arrangement and description are not discussed, as they are more relevant to records at the archival stage, whereas PHC records are current records. The study consisted of interaction between theoretical foundations and empirical evidence and the results of the empirical investigations contributed to the improvement of the overall management of PHC records.

The theoretical framework that formed the basis for the study was the life cycle concept, as it is equally applicable in the management of medical records. The study was built upon the basis that the life cycle concept forms the foundation on which an acceptable records

management programme can be developed. Thus, the life cycle concept provides the basic framework for paper-based records management. The life cycle concept was deemed to be crucial in the understanding of the management of physical records as the PHC of Diepsloot dominantly uses paper-based records. The life cycle is the starting point for creating an effective records management programme because it allows the development of appropriate tools, systems and procedures to appropriately manage each phase of the life of a record (Yusof & Chell 2000), as cited in Chaterera (2013:19). The literature review and theoretical framework guiding the management of medical records is discussed comprehensively in chapter two

1.10 LITERATURE REVIEW

One of the purposes of conducting a literature review is to look into the existing knowledge in order to justify future research as well as to put new ideas into context (Joubert & Ehrlich 2007:66). Similarly, a review of the literature serves to provide perspective to a research topic and to clarify the strengths and limitations of the underlying research (Joubert & Ehrlich 2007:66). Given this, in this study, the literature review was the foundation in finding ideas and new perspectives contributing to the new knowledge in the management of medical records, in the primary health care sector. Thus, the extant literature was reviewed in order to also provide the context and framework for the interpretation of the findings of this study.

The literature dealing with the management of medical records was reviewed. Particular attention was paid to the framework of the records life cycle, and to benchmarking with the ISO 15489-1 (2016) standards on records management. The researcher was thus enabled to better evaluate whether medical records management practices at the PHCs of Diepsloot comply with current best practice and management standards. Literature relating to the management of primary health care medical records was consulted and critically analysed in order to have a theoretical context for this research.

The literature review was organised in a thematic fashion, guided by the research objectives to provide a foundation for the study. The literature relating to policies and procedures that support the management of medical records, medical records management infrastructure, security measures relating to the management of medical records, filing systems followed in the management of medical records, knowledge and competencies of the records management staff will be discussed in detail in Chapter Two.

1.11 METHODOLOGY

According to Labaree (2004), the methodology of a study describes the actual actions taken by the researcher in the process of investigating the research problem. It also explains the rationale for employing specific procedures or techniques in the identification, selection, processing, and analysis of information. A study's methodology section serves to provide the reader with a basis to critically evaluate the overall validity and reliability of the study. It is trite that unreliable methods produce unreliable results (Labaree2004), which in turn weakens the value of any interpretations of the findings.

This study employed a qualitative paradigm and an interpretivist's stance and a case study approach to examine the management of medical records in the PHCs in Diepsloot. Patton (2001:39) notes that the interpretive paradigm "produces findings not arrived at by means of statistical procedures or other means of quantification, but instead the kind of research that produces findings derived at from real-world settings where the phenomena of interest unfold naturally." Case studies are largely qualitative and have been a widely used method in records and information management research.

Before the researcher can start collecting any data, they need to define their target population (Ngulube2005:46). The population of the study is regarded as one of the fundamental aspects of the research design, as it affects the feasibility of the study. The target population, therefore, comprised50 medical (doctors and nurses) and administrative (records) staff from two primary health care facilities in Diepsloot, namely the OR Tambo Clinic and Diepsloot South Clinic. Purposive sampling was used to identify and select key participants who have better knowledge and understanding of issues surrounding medical records. The participants were interviewed in face to face, as well as focus group interviews. Furthermore, the researcher also conducted observations in collecting data. Data was analysed through content analysis. The results were descriptively presented and further expounded using symbolic representations such as words (primarily participants' words), pictures, tables and bar graphs. Chapter 3 presents a detailed discussion of the research methodology employed in this study.

1. 12 ETHICAL CONSIDERATIONS

Among other things, the researcher avoided plagiarism, falsification or misrepresentation of other researcher's work, and also avoided using incorrect citations as this is a very serious

ethical transgression. The study was thus given ethical clearance and approval by the Ethics Committee of the University of South Africa, as well as the national Department of Health. The ethical clearance required, among other things, that the researcher "affirm that the contents of the dissertation are their own work" and that "all the sources used have been acknowledged by means of complete references." In addition, the participants were informed about issues such as confidentiality and anonymity. All the collected data was used only for the academic purposes for which it was collected, and the results were neither falsified nor exaggerated.

1.13 DEFINITION OF KEY CONCEPTS

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

1.13.1 Record

In this context, it referred to information concerning a patient in any format generated, received and maintained. Records are defined by ISO 15489-1 (2016:2) as "information created, received and maintained as evidence and as an asset by an organization or person, in pursuit of legal obligations or in the transaction."

1.13.2 Record Management

The International Standards Organisation ISO15489-1 (2016:2) defines records management as a "field of management responsible for efficient and systematic control of receipt, maintenance, use and disposition of records, including processes for capturing and maintaining evidence of, and information about, business activities and transactions in the form of records".

1.13.3 Medical records

De Klerk (1993), cited in Health Professions Council of South Africa (2008), defined a medical record as any relevant record made by a health care practitioner at the time of, or subsequent to, consultation and / or examination or the application of health management. A medical record is also referred by other scholars as a patient record, clinical record or health record. However, the term medical record is used throughout the study.

1.13.4 Primary health care

For the purpose of this study, the researcher considered "primary health care" to be provided by local clinics and to be the first level of contact by individuals into the national health system.

1.13.5 Health Care Personnel

The National Health Act, 2003 (Act no. 61 of 2003) defines health care personnel as health care providers and health workers. Thus, in the current study, health care personnel refer to nurses and doctors that provide clinical services for users or patients, and the administrative staff who support these services.

1.14. STRUCTURING OF CHAPTERS

The outline of chapters gives a general structure of the study and a brief explanation of each chapter.

Chapter 1: Introduction

This chapter introduced the study and provided some background information to put the research into context. The issues and challenges relating to medical records that the study sought to address, and the reasons why it was important for those issues to be addressed were highlighted. The chapter also gave the problem statement in which the research problem was clarified, and the research questions were contextualised. The study objectives, purpose and significance were also provided. The methodologies employed in the study were also briefly highlighted and key terms were defined.

Chapter 2: Theoretical framework and Literature review

The chapter reviews the relevant literature regarding the management of primary health care records. It puts the study into context by highlighting what other scholars have written on the management of medical records, thereby enabling the researcher to further understand issues regarding medical records through critically analysing gaps and contradictions in the existing literature. The review of the literature was guided by the study's objectives.

Chapter 3: Research Methodology

This chapter discussed the methodology of the study including the paradigms and the research designs employed. The chapter also explained the qualitative research approach as

well as the case study design used in the study. The study population, the purposive sampling technique data gathering tools -including interviews and observations, as well as validity and reliability issues were also discussed in this chapter.

Chapter 4: Data presentation, analysis and interpretation

The chapter presented the findings of the study guided by the objectives of the study. The findings are further expounded through the use of symbolic representations, such as participants' words, pictures, tables and bar graphs. The data collected was analysed through content analysis. Data analysis and interpretation of this study were also based on data gathered from the interviews and observations conducted at Diepsloot PHCs.

Chapter 5: Summary, conclusion and recommendations

This chapter summarised and provided the conclusions and recommendations of the study. The major findings of the study were summarised and presented under each respective objective of this study. Specific and noteworthy conclusions on the management of medical records were made and recommendations based on the findings of the study were also made.

1.15 CHAPTER SUMMARY

The first chapter was an introductory orientation to the dissertation on the management of medical records in primary health care centres of Diepsloot, in the Gauteng Province of South Africa. It was aimed at familiarising the readers with the background to the study and the rationale of the study by identifying the problem to be addressed. Issues pertaining to the management of primary health sector records were brought into context. It provided the roadmap for this study. The chapter discussed the problem statement, objectives of the study, research questions, justification of the study, and significance of the study, scope and delimitation of the study, the definition of keywords, brief literature review, methodology and ethical considerations. Lastly, an outline of the chapters was illustrated to show how the structure of the completed dissertation looks like.

CHAPTER TWO

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

2.1 INTRODUCTION

The previous chapter was an introductory chapter to familiarise the reader with the concept of medical records, their importance to the PHC sector, and the objectives of the study. In this chapter, the existing literature on medical records is reviewed to provide the context and theoretical framework for the interpretation of the findings of this study. Several studies have investigated the management of medical records, (see, for example, Chikuni and Mnjama (2010), Marutha (2011), Masuku (2013), Katuu (2015), Pyrene (2015), Ngidi (2015) Marutha (2016) and Luthuli (2017)).

The researcher concurs with Luthuli (2017:16) that a review of the current literature serves to ascertain what is currently known regarding the research topic and to identify the remaining gaps in knowledge that the present study can cover. Joubert & Ehrlich (2007:66) on the other hand suggest that a literature review examines the existing knowledge with the view of justifying future research as well as contextualising any new and emerging ideas. These authors further noted that the literature review puts available knowledge into perspective, as well as to highlight the strengths and limitations of the research topic. A comprehensive review of the literature thus serves as the foundation for developing ideas and understandings, thereby contributing to the new knowledge.

In this chapter, the researcher critically examined what other scholars have written on the management of health sector records to further expound the problem under study and to identify gaps in the subject matter. The literature review was organised in a thematic fashion, guided by the research objectives. Masuku (2013:36) noted that the literature review requires that the researcher remains focused and critical to be able to put the study into context. A comprehensive analysis of the literature relating to the PHC from the perspective of service delivery in South Africa and the current records management status provided insights into the gaps and need for proper records management.

The literature review was divided into eight sections guided by the objectives of the study as well as the theoretical concepts related to records management. These include legislative framework governing medical records management in the PHC, medical records management infrastructure, security measures, filing systems followed in the management of medical records, knowledge and competencies of the records management staff. As noted by Dookie & Singh (2012), poor understanding of primary health care procedures and processes often results in people developing

unrealistic expectations in service delivery. When these expectations are not met, patients then blame the PHC. In view of this, the present study was aimed at gaining an in-depth understanding of records management processes within the PHC setting to identify any pitfalls and to propose improvement strategies**.**

To ensure that medical records are complete and useful, there is a need for in-depth knowledge and understanding of the content, purpose, ownership, value, uses of and responsibility for, each and every medical record (Edwards 2008:1). Mahomed, Naidoo, Asmall & Taylor (2015:1) noted that deficiencies in record-keeping practices have been reported at primary care level in the public health sector in South Africa and these deficiencies have the potential to negatively impact patient health. Mahomed e*t al* (2015:3) further noted that the quality of record-keeping provided by the PHCs in South Africa is similar to that of other developing countries, where studies have indicated similar deficiencies in record-keeping practices. The deficiencies include problems of data duplication, incomplete and inaccurate data.

2.1.1 Importance of medical records management in the PHC sector

Chamisa and Zulu (2007:94) and Mann and Williams (2003:329) note that the primary purpose of medical records is to support patient care. This implies that improving the quality of medical records should result in improved performance by medical practitioners leading to better patient outcomes. Medical records form an integral part of the PHC. Records management is, therefore, aimed at preserving and making accurate records available and accessible to healthcare professionals to enhance and foster professional practice and to support the effective delivery of healthcare services. Green and Bowie (2011:70) state that "a medical record serves as the business record of a patient encounter." In addition, a medical record often documents all the healthcare services provided to the patient. In this respect, it is a repository of information such as demographic data, diagnostic information and treatment record including treatment outcomes (Green and Bowie 2011:70). In addition to providing clinical care to patients, it is very important for PHC facilities to also keep thorough and precise medical records of the symptoms, diagnoses and treatments of the patients.

i. Easy retrieval

Pyrene (2015:14) notes that since medical facilities deal with the life and health of patients, it is crucial for them to employ effective records management practices for the quick retrieval of medical records to facilitate quality healthcare service delivery. Thus, medical records provide complete, accurate and easy access to diagnoses and treatment information and reinforce decision-making capacities and must be managed with utmost concern. Ngoepe (2008:42) supports the idea

that proper records management enables easy retrieval when he notes that a "good records management programme can help any organisation upgrade its record-keeping systems so that information retrieval is enhanced with correspondence improvements in office efficiency and productivity." The bigger the population accessing the PHC, the more voluminous the records produced, thereby making it difficult to process. Thus, necessitating the need for a coherent medical records system, that can be easily retrieved.

ii. Administrative purposes

Green & Bowie (2011:71) note that the purpose of a medical record is to identify the patient, provide information and reasons for the patient's diagnosis, prescribed treatment and care, as well as to describe and explain the services provided to the patient. The medical record also documents, where possible, the treatment outcomes. A complete medical record is therefore invaluable in facilitating continuity in the care and treatment provided to any individual patient by health care providers. Healthcare professionals also utilise medical records as communication tools, as well as a key resource for planning patient care.

iii. Decision-making

Medical records are multifunctional and are a vital source of information used for decision-making. Pyrene (2015:14) poses that the accessibility and availability of medical records are of great importance since, without medical records, it is near impossible for healthcare professionals to offer proper diagnosis or the best treatment. Continuity of healthcare service delivery relies on the availability of accurate and comprehensive patient health information. Yazdi-Feyzabadi, Emami and Mehrolhassani (2015) posit that medical records are a functional entity, which improves the health of the population, while at the same time promoting the generation of necessary information for use in decision-making at each level of the health system.

iv. Accountability purposes

Medical records facilitate holding health personnel accountable to the public. Medical records can serve as key evidence where health care personnel are suspected of malpractice, corruption or fraud (The International Records Management Trust (IRMT) 2000:2-3). Hence, a medical record defends health care providers accused of medical malpractice. IRMT (2000:4) also to notes that medical records can also be used to foster trust and transparency as well as demonstrate a commitment to good and open governance. Poor- medical recordkeeping also makes it difficult for practitioners and healthcare facilities to defend themselves against clinical negligence claims or disciplinary inquiry. In a similar vein, poor records management can be taken as evidence of poor clinical

practice. On the other hand, proper records management, which entails proper control over the content and storage of records, minimises the risk and exposure to potential legal challenges as well as financial losses. Proper records management will also enable more effective and efficient deployment of human and other resources as there is better co-ordination of information and storage systems. Properly managed and complete patients' records are an important aspect in improving the quality of healthcare, as previous patient treatment and different procedures performed are clearly included in the medical records.

v. Historical purposes

Proper records management also helps to ensure that records of enduring value are readily identified and protected during the early stages of their life cycle. On the other hand, poorly managed records mean that the responsible authorities cannot promptly access authoritative sources of medical, financial and legal information to support decision-making or the efficient provision of health services. When medical records that are properly preserved, they provide a resource that is accurate, reliable and readily accessible which in turn promotes openness and transparency by government bodies (Marutha and Ngulube 2010:22). The Medical Protection Society (MPS) (2014:11) stipulates that when medical records are properly kept, the risk of adverse incidents emanating from, for example, the misplacement or loss of records, lack of access, poor-quality information, are reduced.

vi. Legal purposes

Mathioudakis, Rousalova, Gagnat, Saad and Hardavella (2016) and Chamisa and Zulu (2007:94) noted that clinical records can facilitate the audit and review of the healthcare services provided. In addition, medical records support investigations and resolution of any serious incidents, patient complaints as well as lawsuits. In this regard, maintaining proper medical records form an integral part of a healthcare practitioner's ethical and statutory duty, as well as an invaluable tool in the provision of good quality medical care. A medical practitioner thus has a legal obligation to accurately record and maintain a history of all the treatment and service provided to their patients.

2.2 OVERVIEW OF THE THEORETICAL FRAMEWORK RELATED TO RECORDS MANAGEMENT

In academic research, the theoretical framework serves to answer basic questions namely; (i) what is the nature of the research problem? and (ii) what makes the selected research approach the best suited to address the problem (Ocholla & Le Roux 2011:1).

Theoretical formulations often form the basis of most research effort. According to Burke (1981:41), a theory is a set of universal laws that must be generally applicable in all circumstances, irrespective of the time or the place. A theoretical framework is thus a benchmark by which the researcher measures variables of the study. Masuku (2013:40) further stipulated that every profession has its own theories which simplify or elucidate key concepts that underpin the profession.

Ngoepe (2014:1) noted that "records management models play a significant role in the provision of records management services in organisations". However, Ngulube (2003:20) suggests that most organisations do not necessarily base their records management practices and policies on established records management theories or principles. This is probably a result of the misconception that records management merely involves "the numbering, shelving, fetching and re-shelving of pieces of paper" (Buckland 1994:347). Regardless, Webster (1999), states that in recent times, the development of electronic records has given rise to a distinct body of theory and knowledge of records management. Chaterera (2013:15), however, cautions that it remains important for the studies in the field of records management to consider existing theories in the broad field of information science.

Records management is a mature field, which stands on its own and cannot be generalised to library and information science. Regarding records management as a mature field, it is enough to indicate that the field is rich in the theory of one kind or another (Buckland 1994:349). In the face of such contested views, it was rather compelling and crucial for the researcher to clearly explain the model that directed the present study. The management of any health care centre must consider a sound records management model as a necessity in the organisation so that records are properly managed from creation to disposal. Before implementing a records management programme or model, the organisation should consider issues like organisational processes, policies, procedures, resources and cost-benefit analysis.

Thus, the major theories that characterise the records management profession include, the principle of *respect des fonds* by Hilary Jenkinson (Jenkinson 1966), the principle of levels of arrangement and description, the life cycle model originating from T.R Schellenberg's original thoughts from 1956 (Schellenberg 1956) and the continuum model formulated by Upward (2000:23). The study will, however, only discuss the life cycle model and the continuum model, as they are the dominant models used in the management of current records. The principle of *respect des fonds* and the principle of levels of arrangement and description are not discussed; as they are more relevant to

records at the archival stage. In the PHC sector, records are mostly current records. Although the study will identify and acknowledge the continuum model as one of the major theories that characterise the records management profession, this study will,, however, adopt the life cycle concept as it is equally applicable in the management of medical records and covers the objectives of the study.

2.2.1 The continuum model

The records continuum is a records management model designed and formulated by Upward (2000:23). The continuum model focuses on four actions that continue throughout the life of a record namely: the identification of a record, intellectual control, provision of access, and physical control. Miller & Roper (1999g: 20) define the continuum concept as "the consistent and coherent process of records management throughout the life of records, from the development of record-keeping systems through the creation and preservation of records, to their retention and use as archives". It aims for a records management system that captures records "with sound evidential characteristics" and manages and maintains them during the entire lifespan of their usefulness to the organisation. The continuum model is highly regarded due to its applicability on the management of electronic records (Upward 2000). Kemoni (2008:6) agrees and states that the records continuum model presents very good opportunities for the development of sound records management programmes.

As its name implies, the continuum model entails the continuous set of actions and activities aimed at managing and maintaining records from the moment they are created until they are disposed of (Yusof and Chell 2000:135). The followers of this model view it as highly suitable for the management of electronic records. The continuum model does not differentiate between the functions of different role players such as records managers and archivists. Instead, these role-players must partner to work strategically and collaboratively.

Though the records continuum model has not received credible critical engagement, it has however highlighted fundamental inadequacies in recordkeeping and archiving theory. Records have different values, one primary and one secondary and the different values consider different purposes of use henceforth these records cannot be managed in collaboration.

2.2.2 The life cycle concept

The life cycle model was coined by the American archival scholar Theodore Schellenberg in the 1950s. The model emphasises that records professionals are supposed to work with organisations at the earlier stages of the record management life cycle (Borglund & Oberg 2006:6). Chachage and

Ngulube (2006:3) suggest that the records life cycle is a key concept in records management. The model is premised on the understanding that all records have a lifespan which begins when a record is created and continues through its distribution, use, maintenance and storage. The final stages of the life of a record are its disposal or preservation. Scholars such as Tsabedze (2011:13) and Roper & Miller (1999g: 27) liken the life cycle of a record to that of a biological organism which is born (creation phase), lives (maintenance and use phase) and dies (disposal phase). A record is thus created, and lives as long it has continuing value and then disposed of by destruction or by transfer to an archival institution. According to Roper & Miller (1999g: 19), a records life cycle has three major steps as illustrated in Figure 1.1 below.

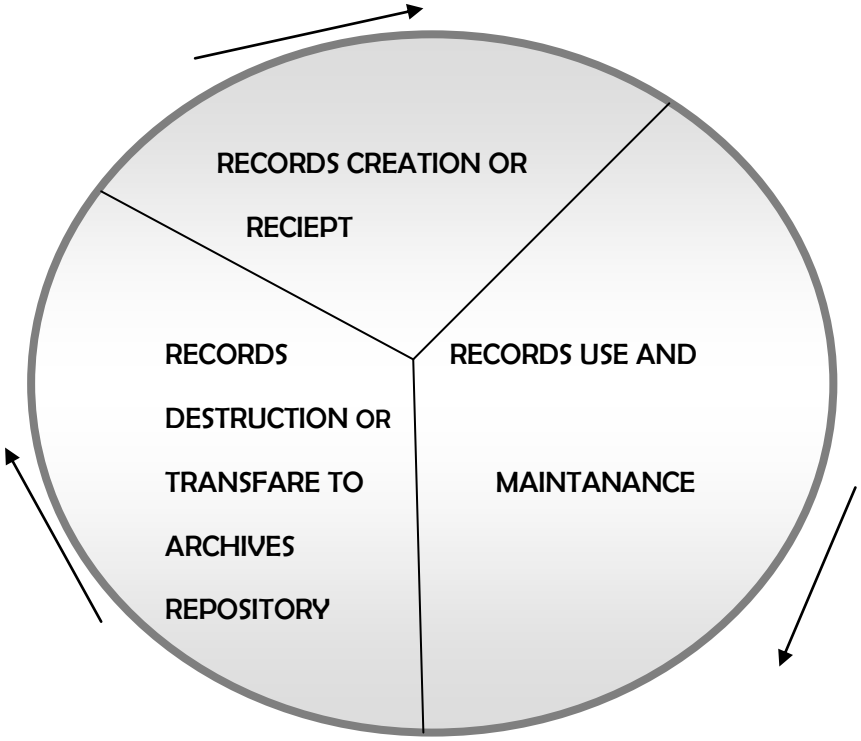

Figure 1.1: Records Life Cycle model

Stage 1. Creation and receipt of official records: Records should be captured to ensure that they are accessible to all who require them, subject to any restrictions that may apply and managed in accordance with policy and procedures secured against tampering, unauthorised access or unlawful deletion, and disposed of promptly in accordance with legal authority (Spiteri 2014). It is emphasised by ISO 15489-1 (2016:16) that "the creation of records should involve the creation of content and metadata that document"

Stage 2. Maintenance and use. According to Tsabedze (2012:14), in order to ensure proper maintenance of records, all the information regarding the records storage and retrieval must be

gathered and proper strategies implemented before the records are created. The record type determines how records will be captured by various records management systems. The maintenance and use stage includes: filing, retrieving, use, dissemination, release or exchange of the information in the record. This stage is managed by the records managers.

The maintenance stage includes activities like classifying, indexing, labelling, and filing the records and to ensure their ready access and irretrievability for the conduct of the agency's business; establishing and documenting file locations; and standardised procedures for retrieval and refilling of records and information (Spiteri 2014). This includes files for patients who have been given follow-up appointments in the clinic or have been told to report for admission on a future date. Marutha (2011:30) notes that when patients have further consultation or follow-up visits, the doctor will request the file created during the previous consultation from the records management unit and the file requested by nurses or doctors should be recorded in the file movement sheet.

Stage 3. Retention and Disposition. At the disposition phase, records are assessed to determine their retention value using records retention and disposal schedules. This leads to either the preservation or destruction of the record. This stage is managed by records managers. Permanent records are those records that have enduring historical or other value and will never be destroyed. When records are determined to be of permanent value, they need to be transferred to archival storage (Spiteri 2014). In accordance with section 13(2)(a) of the National Archives and Records Service of South Africa Act, no public records under the control of any governmental body may be transferred to an archives repository, destroyed, erased or otherwise disposed of without a written disposal authority issued by National Archivist. HPCSA (2008:9) Stipulates that records kept in provincial hospitals and clinics should only be disposed of with the approval of the Deputy Director-General concerned and retention periods should be extended if there are grounds for doing so, for example when a patient has asbestosis.

The HPCSA (2008:9) also states that medical records should be stored for a period of not less than six years as from the date they became inactive, however in the case of children and those patients with mental disability, health care practitioners should maintain the records for a longer period. Thus, for children under the age of 18 years, medical records should be kept until the 21years and for mentally incompetent patients the records should be kept for a period of the patient’s lifetime.

According to Tsabedze (2012:15), once the primary value of records to an organisation lapse, then they are regarded as inactive, hence the requirement to destroy ephemeral records that take up

valuable office space, and to transfer valuable records to the archives. Medical Protection Society (MPS) (2014:1), as cited in National Guideline for Filing, Archiving and Disposal of Patient Records (2017:5) states that medical records provide clinical data for further clinical management of the patients, provide direct evidence in litigation, are used for further research and they promote good clinical and laboratory practices.

2.2.2.1 Justification of the life cycle model in the management of PHC records

The life cycle model was found to be the most dominant model for the management of medical records. The life cycle model is based on paper-based record keeping, which also happens to be the main medium for PHC records management. The record continuum model, on the other hand, is applicable to both paper-based and electronic recordkeeping. Thus, the researcher shares the sentiment that the life cycle model is an effective model to manage medical records.

Roper & Miller (1999g: 17) note that without this model, vast quantities of inactive records fill up space, making the retrieval of useful and current information difficult. Masuku (2013:67-68), however, states that medical records do not necessarily have a similar life cycle to other records due to the fact that as long as a patient is alive, it is difficult to determine which stage the patient's record is at, at any given point in time. To support this view, Card, Sircusand Smith (1979) pose the following scenario. When a patient with disease A is attended to and treated and discharged, a record of his illness is created and stored. If that same patient is then readmitted with another disease (B), the diagnosis for disease B will mostly be based on the evidence the doctor will obtain directly from the patient. However, there is the possibility that some of this evidence may be contained in the record relating to disease A. In such a scenario, it is difficult to determine if the record is at the active or semi-active stage.

Luthuli (2017:24) also contends that, because the records life cycle model focuses on the physical aspect of managing records, and given the evolution of the newer electronic forms of records, the model may be inadequate in explaining the management of records in their entirety. However, Claeys (1996:2) argues to say that the life cycle of medical records is not different from any other records when she noted that life cycle starts with the creation of a medical record and ends with its disposal. Furthermore, the researcher's viewpoint is that the records life cycle model guides the management of medical records.

Scholars like Yusuf and Chell (2000:135-141) postulate that the life cycle model is more applicable to the management of paper-based records. The PHC dominantly uses paper-based records and the life cycle concept is correlated and heavily geared towards records generated using paper. Given

this, the life cycle model was determined to be the most applicable for the purposes of the present study. Daily, large volumes of paper records are generated and used in the PHCs of Diepsloot. National Archives and Records Service of South Africa (NARS)(2007:8) pose that heads of governmental bodies should ensure that, in the transition to e-government, enough attention is given to the management of paper-based records generated by governmental bodies and should ensure that all the requirements for the management of paper-based records are adhered to.

2.3 LEGISLATIVE FRAMEWORK GOVERNING THE MANAGEMENT MEDICAL RECORDS IN THE PRIMARY HEALTH SECTOR OF SOUTH AFRICA.

The legislative framework governing medical records management in the PHC provides guidelines for the creation, maintenance, access, security, storage and disposal of patient medical records. ISO 15489-1(2016:8) notes that "the objective in issuing and implementing policies on managing records should be the creation, capture and management of authentic, reliable and useable records that possess integrity and support and enable business activity for as long as they are required". The objectives and procedures guiding the PHC should be derived from the legislative framework governing medical records.

ISO 27002 (2005:100) also states that "all relevant statutory, regulatory and contractual requirements and the organisation's approach to meet these requirements should be explicitly defined, documented and kept up to date for each information system and the organisation." Mathioudakis, Rousalova, Gagnat, Saad and Hardavella (2016) note that, in most countries, the content, as well as the procedures for handling medical records, is strictly governed by the law., not only because they are fundamental to high-quality patient care but, also because they are increasingly used in the courts and represent an important source of confidential personal information.

Green and Bowie (2011:270) note that a medical record is a legal record that must be maintained in accordance with accreditation standards, legal principles, professional practice standards and regulations. The law and regulations provide the essential framework within which health care facilities can operate and manage medical records. Katuu and Van Der Walt (2016:1) postulate that any improvement in the management of records has to be done in full cognisance that records are generated in an organisational setting and based on a national legislative and regulatory framework. Thus, the legislative and regulatory frameworks in the PHC promote ideas of openness and transparency and compliance to legislation and regulations requires appropriate management structure and control.

Healthcare organisations are required to have records management policies and procedures in place, which must be reviewed and updated regularly in accordance with technological advances and legislative requirements (MPS 2014:11). The management of PHC medical records operates in terms of legislation like the National Health Act 2003 (Act No. 61 of 2003), Constitution of South Africa (Act No. 108 of 1996), the National Archives and Records Service of South Africa Act (Act. No. 43 of 1996 as Amended), the Promotion of Administrative Justice Act (Act No. 3 of 2000) (PAJA) and the Promotion of Access to Information Act (Act No. 2 of 2000) (PAIA). Ngoepe (2008:21) also states that records creation and capturing require the development of consistent rules that will bring about data integrity and accessibility, system decision for records log and indexing. The significance of these acts cannot be over-emphasised as they ensure mandatory establishment of the sound organisational records management framework for any institution.

2.3.1. The National Health Act (Act No. 61 of 2003)

The National Health Act, 2003 (Act No. 61 of 2003:2) (hereinafter, the Act) makes provision for a uniform and structured health system within the Republic of South Africa. Starting with acknowledging the obligations imposed by the Constitution and other laws on the different tiers of government with regard to health services, the Act identifies the types of information that may need to be retained by the PHC and prescribes exactly how it should be retained. The Act provides that this information must not be given to others unless the patient consents or the health care practitioner can justify the disclosure**.**

Section 13 of the National Health Act, 2003 (Act No. 61 of 2003) stipulates that subject to the National Archives of South Africa Act, 1996 (Act No. 43 of 1996), the person in charge of a health establishment must ensure that a health record containing such information, as may be prescribed is created and maintained at that health establishment for every user of services. Section 14 of the National Health Act, 2003 (Act No. 61 of 2003) provides for the confidential treatment of all the information concerning a healthcare user such as his or her health status, treatment or stay in a healthcare facility. The information may, however, be disclosed to third parties, but only with the user's written consent, or in compliance with a court order or a law.

MPS (2014:14) summarises Sections 15 and 16 of the National Health Act 2003 that "healthcare workers with access to a user's health records may disclose information for any legitimate purpose within the ordinary course and scope of his or her duties where such access or disclosure is in the

interests of the user." Health workers may also, with the authorisation of the patient concerned, examine health records in the context of delivering treatment.

The National Health Act No. 61 of 2003 also stipulates that the health establishment must ensure that health records are available when needed to protect users and the health establishment against the risks of delayed, unsafe or inappropriate care. The Act also provides that South African citizens have the right to access government health facilities at no cost. The more people access health facilities, the more medical records are created. Therefore, there is a pressing need for a proper records management system. Section 17(2) of the National Health Act further stipulates that it is an offence, and a person is liable for conviction if a person commits the following actions on the patients' records:

- Falsifies any record by adding or deleting or changing any information contained in that record;
- Creates, changes or destroys a record without authority to do so;
- Fails to create or change a record when properly required to do so;
- Provides false information with the intent for it to be included in a record without authority;
- Copies any part of a record without authority;
- Connects the personal identification elements of a user's record with any element of that record that concerns the user's condition, treatment or history;
- Gains unauthorised access to a record or record-keeping system;
- Connects any part of a computer or other electronic system on which records are kept to any other computer or other electronic systems, or any terminal or other installation connected without authority;
- Modifies or impairs the operation of any part of the operating system of a computer or other electronic system on which a user's records are kept;
- Modifies or impairs the operation of any part of the programme used to record, store, retrieve or display information on a computer or other electronic system on which a user's records are kept.

2.3.2. The Constitution of the Republic of South Africa 1996

Section 195 of the Constitution of the Republic of South Africa, provides the values and principles that govern the effective, economical and efficient use of resources. Section 195(1) (g) stipulates that transparency must be fostered by providing the public with timely, accessible and accurate

information. Records managers and healthcare institutions are required to adhere to the provisions of the relevant sections of the Constitution.

Marutha and Ngulube (2010:7) postulate that to comply with all the requirements of the Constitution, there needs to be proper records management, without which there would be no compliance. Proper records management ensures that medical staff can account for their actions when faced with litigation. In addition, Luthuli (2017:28) notes that the Constitution not only protects the patient's rights, but it gives them proper referral when issues arise or when they have been mistreated in hospitals.

2.3.3. The National Archives and Records Service of South Africa Act (Act No. 43 of 1996) (NARSSAA)

The National Archives and Records Service of South Africa Act (Act No. 43 of 1996) as amended states that, "no public record under the control of a governmental body shall be transferred to an archives repository, destroyed, erased or otherwise disposed of, without the written authorisation of the National Archivist."Section 13 of this Act is aimed towards promoting sound records management and thereby promoting accountability and better service delivery.

Section 13(1) provides that "subject to the provisions of this Act, the National Archivist shall be charged with the proper management and care of public records in the custody of governmental bodies." The Act also specifies guidelines for efficient records management in governmental or public bodies. The Act further provides for the National Archivist to determine which record-keeping systems should be used by governmental bodies.

2.3.4. The National Archives and Records Service of South Africa Regulations (R158 of 20 November 2002)(NARSSAR)

Roper & Miller (1999c:22) underscore that legislation dealing with the management of records and archives is an essential basis for accountable and effective government. The National Archives and Records Service of South Africa Regulations (R158 of 20 November 2002**)** give a guideline to procedures relating to records classification, microfilming, appraisal and disposal of records. The regulations state that the government body must not dispose any record before obtaining the authority to transfer the records to an archives repository or to destroy them. According to Section V of the regulations, records should be managed by the governmental body in terms of the broad policy guidelines contained in the National Archives and Records Service of South Africa Act, (Act No 43 of 1996, as amended). It is, however, essential for each body to establish its own records

management policy to link its unique processes and procedures to the requirements of the National Archives and Records Service of South Africa Act.

2.3.5. The Promotion of Access to Information Act (Act No. 2 of 2000) (PAIA)

ISO 15489-1 (2001) notes that the regulatory environment in which an organisation operates establishes broad principles on access rights, conditions or principles that should be incorporated into the operation of the records system. (ISO 15489-2 2001:12) also states that the development of appropriate categories of access rights and restrictions is based on the organisation's regulatory framework analysis, business activity analysis and risk assessment. The Promotion of Access to Information Act, 2000 (Act No. 2 of 2000) (PAIA), which flows from section 32 of the Constitution of the Republic of South Africa, 1996, gives effect to the constitutional right of access to any information held by the state and any information held by any other person, provided that such information is required for the exercise or protection of any rights.

Although users of information have the right to access information held by public bodies, the patient's right to privacy should also be considered. Green & Bowie (2011:271) note that any information communicated by a patient to a health care provider is considered privileged communication, which means it is private and patients have the right to confidentiality. Thus, information cannot be disclosed without the patient's authorisation. Exceptions, however, apply when the record is required for law enforcement purposes, public health activities, research purposes, identification purposes and specialised government functions e.g. correctional services, military activities, national security and intelligence services. Ngoepe (2008:92) however, states that the right of access to information will not be realised in South Africa unless personnel in government bodies and departments are well trained and knowledgeable about the requirements of the PAIA.

2.3.6. The Promotion of Administrative Justice Act (Act No. 3 of 2000) (PAJA)

The Promotion of Administrative Justice Act (PAJA) was enacted to give effect to the constitutional right to "lawful, reasonable and fair" administrative action (section 33 of the Constitution). The Act also promotes adherence to the principles of *Batho Pele* as it enables and promotes the provision of reliable and authentic records. Marutha and Ngulube (2010:22) note that proper keeping of records is crucial if government bodies are to fulfil their obligation to provide open access to information and other services.

2.3.7 Justification of the legal and regulatory framework in managing PHC records

IRMT (2000:27) states that comprehensive and up-to-date legislation is essential to ensure complete protection of all government and parastatal records and give the archival administration wide powers for securing and protecting records. Msibi (2015:36) notes that the existence of a comprehensive legal framework is a strong pillar in ensuring the proper management and preservation of records in the public sector. The Acts and policies ensure that medical records are maintained in a manner that is consistent with the legal requirements, standardised and available for continuity of care, and permits effective, timely, quality service. Luthuli (2017:37) notes that for a record management policy to be formulated there is a need to follow certain rules that guide and direct its formulation. Luthuli (2017:29) further notes that with specific reference to medical records, it is clear that citizens have a constitutional right to health care as well as information related to its provision in private and public hospitals. Thus, the regulations and the acts of South Africa guide the formulation of the medical records management policies. Katuu and Van Der Walt (2016:2) also note that the key to transforming any society often begins with reviewing its legislative and regulatory framework and this is particularly critical in the health sector.

Katuuand Van Der Walt (2016:5) further notes that beyond having a sophisticated understanding of the legislative and regulatory instruments, there is a need for an equally sophisticated implementation process. While these regulatory policies and regulatory instruments do support the effective and secure management of records, the awareness of these instruments has to be translated into practice through adherence by records management professionals in order to improve the quality of health services.

Roper & Miller (1999a:4) noted that the enactment and implementation of comprehensive, up-to-date records and archives legislation is a critical prerequisite for the establishment of an effective, integrated system for managing records and archives throughout their life cycle. Roper & Miller (1999e:23) also state that whether or not hospitals are subject to a national records act or equivalent legislation, there may also be separate enactments relating to record-keeping in the health sector. The PHC not only have to comply with regulations but also have to maintain a balance between operational record-keeping requirements and service delivery.

Katuu and Walt (2016:1) note that any improvement in the management of records has to be done in full cognisance that records are generated in an organisational setting and based on a national legislative and regulatory framework. The regulations are formulated in conjunction with records management procedures like creation, maintenance, security, retention and disposal in order to

create a standard rule across the PHC in order to facilitate effective and timely patient care and services.

When well-designed government legislation is in place, medical records are appropriately managed and preserved over time for accountability and historical reasons. It is thus imperative to assert that legislation is an essential component of the wider legislative base of accountable and effective government. It provides the essential framework that enables the health sector to operate with authority in its dealings with other agencies of the state.

2.4 MEDICAL RECORDS INFRASTRUCTURE

Roper & Miller (1999d: 8) note that to ensure the safety and security of records in a records office, the appropriate equipment and conditions must be provided. Appropriate conditions not only protect the records but also ensure that they are accessible and managed cost-effectively. Whether conditions are appropriate or not, is largely determined by the purpose, form, use and value of the records (ISO/TR 15489 2 (2001:18). According to Tsabedze (2012:14), in order to ensure proper maintenance of records, all the information regarding the records storage and retrieval must be gathered and proper strategies implemented before the records are created. This information will determine the way the records will be captured in the various records management systems, be they manual or automated (Tsabedze 2012).

Section 17 of the National Health Act, 2003 (Act no. 61 of 2003) which deals with the protection of health records, stipulates that the person in charge of a health establishment must set up control measures to prevent unauthorised access to those records and to the storage facility in which, or system by which records are kept. Thus, for example, appropriate equipment should be in place for secure storage of records within the clinics. There should be an appropriate space where the equipment will be located so that there is enough space to fit the equipment and give records management staff a working area.

Horsman (2001:14) notes that records must be stored in a storage medium where they may not be altered, but rather maintain permanent authenticity and reliability. Thus, in manual storage, for example, the storage medium and handling processes must take into account the physical and chemical content of the paper to ensure that it can be preserved for a long time. Such records are prone to deterioration due to acidity, temperature, humidity, rodents, air pollution, light, water, mould, insects and so on (Roper & Miller 1999f:6-7). The organisation must, therefore, use the

records storage media that will maintain the records' usability, reliability, authenticity and preservation for their entire life span (ISO 15489-1 2016). The National Guideline for Filing, Archiving and Disposal of Patient Records 2017:11) further states that all records that are inactive for two years must be archived in a separate lockable storage space at the facility and if there is no storage space available, the records must be taken to the provincial/district archives.

2.5 SECURITY MEASURES RELATING TO MEDICAL RECORDS

National Hospitals Office (NHO) (2007:21) states that "every healthcare record is a confidential document of patient care and as such must always be kept secure." Patients have a right to demand and expect the confidential treatment and secure storage of their healthcare records. Securing patient records involves the taking of management measures designed to protect the confidentiality and integrity of the records, as well as ensuring that the possible consequences of any security breaches are managed within an acceptable predefined level (Coppieters and Levêque 2013). Security measures need to be taken into consideration by health and information professionals in all the PHCs through a methodological evaluation of risks.

The Health Professions Council of South Africa (HPSA) (2008:5) states that patient information can be used for a variety of purposes that include education and research, epidemiology and public health surveillance among other things. In addition, health care providers access medical records to help with the diagnosis of illnesses and to formulate treatment plans for patients. Other users of medical records include researchers who access medical records when gathering research data, insurance companies that use medical records for claims payments, the legal fraternity that uses medical records in litigation. It is clear that many different categories of people can obtain and use confidential medical information for a vast range of activities. However, because such medical records could be potentially used to the detriment of the patient, it is of supreme importance to control access and secure the records against inappropriate use.

Thus, when a patient's information is released it should be done in the best interests of the patient and without violating the patient's rights. Appropriate and reasonable measures must be taken to prevent unauthorised access or processing of patient records. ISO 15489 (2016:15) states that "categories of access and permissions rules that are applicable to records should be based on the results of the appraisal, in particular on the identification of agents and the determination of records requirements".

2.5.1 Human resource security

MPS (2014:14) stipulates that confidential records should not be left where unauthorised persons can access to them. Personal information about patients should be protected with privacy and confidentiality measures to ensure that it does not end up in the hands of a person without the required authority to access them. To achieve this, there is a need to set up robust records management policies that incorporate strong security controls that can protect the physical integrity of the records(MPS 2014:23). Such policies should be capable of applying to both computerised and manual record systems. Thus, it is of paramount importance to protect medical records from unauthorised access of records or copies of records during operational and non-operational periods.

Restrictions to accessing medical records should be applied to both internal and external users. Contractors or other external workers of the PHC can be a threat to the security of medical records. These may include network administrators, suppliers, cleaning services, security services, and students on industrial attachment, maintenance services and auditors. Thus, even within the clinic, not everyone should have the authority to access patient records. ISO 27002 (2005:24) states that as part of their contractual obligation, employees, contractors and third-party users should agree to abide by their responsibilities for information security. Employees with access to confidential information must sign a non-disclosure agreement, to ensure confidentiality and security to PHC medical records. Employees must ensure that medical records are not exposed due to negligence, ignorance, or carelessness and must abide by the confidentiality rules of the PHC.

Wiant (2003:13) notes that the "inappropriate access to medical record information is of special concern to workers who may be discriminated against by their employers, or individuals who are denied health insurance based on the disclosure of their health problems", especially those related to genetic testing. There are, however, cases in which disclosure to patient information is permissible or even mandatory without the patent's consent i.e. when the law or a court order requires disclosure of such information. In instances where patient information is needed for research, the researcher must adhere to principles of privacy and not disclose information that can lead to the unique identification of a patient.

2.5.2 Physical environment security

Physical and environmental security deals with the best practices PHCs can use to alleviate and prevent unauthorised physical access to health premises and minimise theft of medical records.MPS (2014:13) underscores that the obligation of confidentiality goes beyond undertaking not to divulge confidential information; but also includes the duty to ensure the security of patient records. ISO

27002 (2005:29) states that security perimeters and physical barriers should be used to restrict access to areas where medical records are kept and processed. These barriers should be physically sound (ISO 27002 2005:29) and protected by locks, alarms and so on. Thus, the PHC structure must be physically secure to prevent unauthorised access to the building and to the records.

2.5.3 Technological security

PHC technological security pertaining to medical records includes the use of information communication technologies (ICT) to manage medical records, network controls, backups and the health information system controls. Technological advancement has added momentum to the need to have information security. PHCs must have electronic records management auto audit trail which will enable record managers to trace any attempts to access medical records and any changes made to the records thereof. Medical records should also be encrypted, and firewalls should be in place to protect records from external hackers. Authorisation codes to the system should also be in place. ISO 27002 (2005:61), notes that using unique user identification number (ID) enables users to be linked and to be held responsible for their individual actions. The use of group IDs should only be permitted where they are necessary for business or operational reasons and should be approved and documented.

2.6 SKILLS AND COMPETENCIES OF RECORDS MANAGEMENT STAFF

This section discusses literature relating to skills and competencies of records management staff to determine the availability of relevant skills needed for the management of PHC records. ISO 15489-2 (2001:23) states that "organisations need to employ personnel who have professional qualifications in records management or archives, to manage their records programme and to undertake highly technical processes such as classification, preparing disposition authorities and system design." IRMT (2000:35) notes that records management must be seen as a worthwhile career, not as the posting of last resort for those who are unqualified, incompetent, or idle. Records need to be managed according to professional standards and practices to ensure efficient and effective service.

Sayudi (2013:27) postulated that the success or failure of records management systems is dependent on the quality and quantity of staff handling the management and maintenance of patient records. To realise PHC's vision and values, staff education in records management is crucial. Records management staff needs to be equipped with the necessary skills to manage complete and authentic records. The International Federation of Health Information Management Information (IFHIMA) (2012:10-11) notes it is, therefore, the responsibility a qualified medical records

administrator is to establish systems and procedures to ensure the efficient production of health records for patient care, medico-legal purposes, statistics, teaching and research.

Records management staff must be trained and equipped with knowledge and skills, which will enable them to create and manage proper records keeping infrastructure. This can be achieved through in-house training and workshops, and so on (Marutha 2011:47). In addition, staff can also be trained through vendor-sponsored programmes, professional seminars, as well as college or university-level courses (Yusof and Chell, 1998). In terms of the content of such training, ISO 27002 (2005:26) notes that it should include security requirements, legal responsibilities and business controls. The correct use of information processing facilities, equipment and software should also form part of the training. Green and Bowie (2011:38) further identify competencies in the coding and abstraction of data, statistics; database management; quality improvement methods; and computers as hey requirements for staff in records management.

Organisations cannot operate effectively without competent people. Part V of the National Archives and Records Service of South Africa Regulations (2002), states that a person designated as a records manager of a governmental body in terms of section 13(5) shall:

(a) Be in possession of an appropriate university or technikon qualification, and/or have appropriate professional experience;
(b) Have successfully completed the NARS' Records Management Course;
(c) Possess a thorough knowledge of the body's organisational structure, functions and records system; and
(d) Be responsible for promoting the effective, efficient and accountable management of the body's records and ensuring, by inspections and other means, the body's compliance with the Act and all other relevant legislation.

Records management professionals must also be qualified to belong to an association or a body that will govern their professional practice and ethics. Records managers must be governed and registered under professional bodies like Eastern and Southern Africa Regional Branch of the International Council on Archives (ESARBICA), the International Records Management Trust (IRMT) and South African Society of Archivists (SASA). These umbrella organisations make sure that records managers operate within the specified professional standards of competence, care, conduct and ethics. These professional bodies also serve to enhance continuous professional development (CPD) through educational workshops, newsletters, and conferences.

The literature reviewed shows that there are no practitioners and academics in archives and records management employed by the PHC. Instead, records are managed by clerks, who only have matric Tsabedze (2011:27) also notes that in many African countries most records management officials are not necessarily trained or qualified in records management, and are, therefore; mostly incapable of handling records management problems. According to Ngoepe (2008:78) records management is seen as a low-level function often assigned to registry and records clerks without the necessary authority or competencies to formulate and implement effective and enforceable records management policies. It is, therefore, the duty of the records manager to identify training courses that are relevant to the duties of the registry staff and ensure that the registry staff are trained appropriately.

National Archives and Records Service of South Africa (NARS) (2007)states that "a governmental body may choose a third-party supplier to provide records management training, if the supplier is well versed in the requirements of the National Archives and Records Service Act, 1996 as amended." Untrained and inexperienced records management staff creates setbacks in achieving the objectives the records were created for in the first place. Roper & Miller (1999e:23) state that records managers will most certainly need to have some knowledge of data collection and coding techniques. Among others, people responsible for managing medical records must be able to create and maintain records, design systems, classify, index and file records, knowledge of information retrieval systems, appraise and dispose of records, archive and preserve records.

ISO 15489-1 (2016:10) states that "people with assigned responsibilities relating to the creation, capture and management of records should be competent to perform these tasks and competence should be regularly evaluated, and training programs to develop and improve such competencies and skills should be designed and implemented where required". IRMT (2000:37) notes that records professionals manage, appraise, select, acquire, preserve and make available for use records and archives, ensuring their intellectual integrity and physical protection for the benefit of users both in the present and future and thus such responsibilities should be matched with adequate skills and competencies.

2.7 MEDICAL RECORDS FILLING SYSTEM

The fundamental objective of this section is to discuss literature related to medical records coding, indexing, classification, and file storage systems with the intention to gain contextual information about the appropriateness of file movement, tracking, security and retrieval in Diepsloot clinics.

Roper & Miller (1999e:47) postulate that there is a need for clear procedures for establishing whether or not a file exists for each patient who may arrive at the hospital, and where such a file exists, to retrieve it. Edwards (2008:15) propounds that the medical record staff must, with tact and diplomacy, ensure compliance with the rules and regulations set for dealing with or processing the medical records.

Green and Bowie (2011:206) note that a well-organised numbering and filing system is essential to the effective storage and retrieval of medical records. Such a filing system would serve as a framework for the systematic management of medical records. The type of system used depends upon the nature of the business, size of business, security and the technology used. National Guideline for Filing, Archiving and Disposal of Patient Records in Primary Health Care Facilities (2017:1) provides guidelines for the secure, efficient and orderly storage, filing and retrieval of medical records. This section will discuss records coding, indexing, classification then file storage.

2.7.1 Medical records coding

Green and Bowie (2011:304) state that a coding system organises a medical nomenclature according to similar conditions, diseases, procedures and services and establishes codes. Thus, coding gives a narrative translation of medical records into numeric codes using the International Classification of Diseases (ICD) and Clinical Modification (CM) codebooks such as the ICD-9-CM and ICD-10-CMcodebooks. This enables disease classifications to be consistent with current clinical practice and medical technology advances. Walker and Nicholson (2009) note that clinical coding is the translation of medical terminology describing a patient's complaint, diagnosis and treatment, into a coded format which is nationally and internationally recognised. Coding is done in order to group conditions and procedures that are similar for statistical tabulation and it enables classification of records. Ensuring accuracy in medical coding is crucial to administering proper healthcare. National Hospitals Office (NHO) (2007:38) notes that "coding performs an essential function in providing quality, accurate and uniform health information and greatly contributes to the continuous growth of health knowledge." Figure 1.2 below illustrates the coding process.

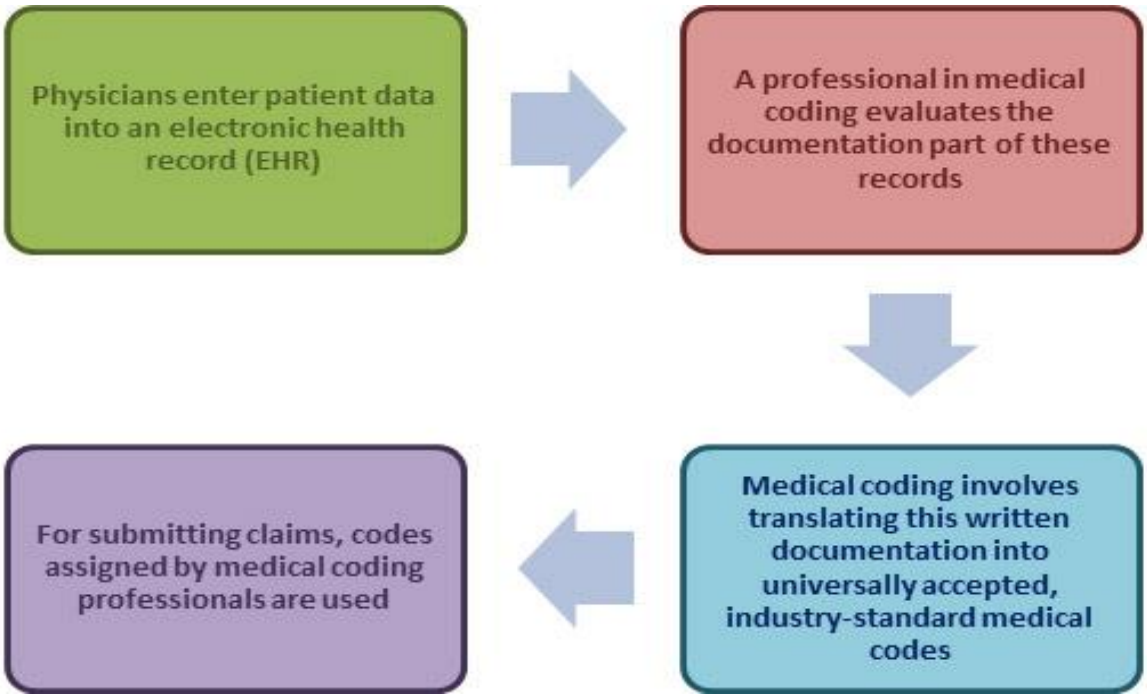

Figure 1.2: Coding process as adapted from the Mentor Health (nd).

2.7.2 Medical records indexing

Indexing is the representation of a document, primarily of its topic or content. Instead of going through boxes or filing cabinets, an index acts as a central location showing exactly where a file is located therefore saving time and enabling ease of access to medical records. Roper & Miller (1999e:48) note that the master index of case note files is a key tool to help clarify whether or not a file exists for each patient. Thus, a master index is an aid for files and contains identification information about all patients whose files are kept in the clinic. The master index enables quick retrieval of information as it gives the exact location of the file.

During indexing, key concepts are extracted from documents by a process of intellectual analysis and then transcribed into indexing terms. Both analysis and transcription should be performed with the aid of indexing tools such as thesauri and classification schemes. Thus, the first step in indexing is to examine the document and establish its subject content, then identify the principal concepts present in the subject and lastly express these concepts in the terms of the indexing language. ISO 15489-1(2016:17) states that indexing metadata such as subjects, location or personal names, is also useful in making records retrieval easier. Specific indexing terms are mostly derived from the format or nature of the record, its heading, subject matter, abstract, or dates associated with transactions recorded in the record, amongst other things ISO 15489-2 (2001:12). Avillach, Joubert and Fieschi, (2007) states that the manual indexing of medical documents needs

qualified professionals with specialised knowledge of the terminology used for coding and is heavily time-consuming, its performances depend on the regularity and consistency of the indexers. The major types of manual indexes are book index, card index, and rotary index.

A book index involves a large bound volume set up alphabetically. It looks like a large version of an address book with the alphabet laid out on the right side of the index. The records are notated within the book and state where each is located in the office. Card indexing the records are notated on strong quality cards of a uniform size, and then filed in a cabinet in an order specific to the business. The cards can be filed alphabetically or numerically. This allows for constant adding of records over time, because the cards can be added to the original set without any issues. Card indexing uses individual and unattached cards so the card can be pulled out of the file and put back when needed. A rotary index is similar to the card index but, placed in a simple wheel, so the numeric or alphabetic filing system on top of the cards is visible. Rotaries can contain many files, and cards can be added as more records are created (Avillach *et al* 2007).

2.7.3 Medical records file classification

Roper & Miller (1999g: 95) notes that classification is a process of identifying and arranging records and archives in categories according to logically structured conventions, methods and procedural rules represented in a classification system. The process of classification helps describe, organise and control information, according to its context within an organisation. ISO 15489-1(2001 or 2016) defines classification as "the systematic identification and arrangement of business activities and/or records into categories according to logically structured conventions, methods, and procedural rules represented in a classification system". Classification organises records into categories, based on the functions and activities so that decisions about their organisation, storage, transfer and disposal may be made on a category not file by file. ISO/TR 15489-2 (2001:9) also states that classification systems can be used to support a variety of records management processes in addition to facilitating access and use, for example, storage and protection, and retention and disposition. For example pre-defined classes of records ensure the correct retention policies are enforced on that particular category of records.

Classification ensures that documents are named or labelled in a consistent manner, which also enables easy retrieval by knowing what records exist in the PHC and where they are kept. Medical records filing systematically arrange patient records in a specific sequence so that retrieval is fast and easy. International Federation of Health Information Management Information (IFHIMA) (2012:10) notes that daily procedures in many areas of a clinic or hospital can be severely affected

by poor management of health record services. A proper filing system ensures that records are available when needed. The classification of medical records can be alphabetic, chronological, numeric and hierarchical.

In alphabetic classification, records are arranged by the name of a person. IFHIMA (2012:11) postulates that when no health record number is assigned, and the patient's name is the only identifier, then the alphabetical filing is the only possible method to use. Filing is by the patient's surname first, then the first name. Records of patients with exactly the same name and surname should then be filed according to their date of the birth date. This filing system poses many challenges due to spelling error or change of surname due to marriage. IFHIMA (2012:11) notes that alphabetical filing is not recommended and is only useful for facilities with a limited patient population and a small files area, with a very low patient turnover rate. In the alphabetic classification, names must be spelt correctly to avoid misfiling of records as illustrated by figure 1.3 below.

ZULU, AKIM
ZULU, ANGEL
ZULU, BLESSINGS
ZULU, NAKANANI

Figure 1.3: Alphabetical classification

Chronological classification is by sequential date order. Thus, files are numbered in a chronological order e.g. 251, 252, 253 and 254. This filing system is easy to retrieve consecutive numbers in active storage. Edward (2008:2) notes that the medical record should be compiled chronologically and should contain sufficient data to identify the patient, support the diagnosis or the reason for the treatment, justify the treatment and accurately document the result. Patient records are more secure because unauthorised personnel cannot retrieve a record according to name, one need to know the patient's number. However, misfiling increases as the number of digits, increases e.g. 19841212 can be misfiled as 19841221.

Under the hierarchical classification system, the business of an organisation is broken into a hierarchy of levels. The broad functions are at the top of the hierarchy. This can be subdivided into narrower functions and activities reflecting functions or subjects within a hierarchy e.g. chronic

patients then sub categorise to TB, HIV and BP. The terminology used when classifying records must be derived from the functions and activities of the PHC. Hierarchical classification form chains of concepts that are subordinated one to the other (Mata Caravaca 2017:24).

Proper and systematic classification schemes are essential in the management of medical records as noted by Pyrene (2015:23) that it is also likely that more than one patient could share a similar medical record number, making it difficult for medical staff to use previous patient health information. Sharing of medical numbers can make it difficult to follow the chronology of treatments prescribed to each patient. ISO 27002 (2005:21) poses that an appropriate set of procedures for information labelling and handling should be developed and implemented in accordance with the classification scheme adopted by the organisation. Thus, classification enables easy retrieval; help determine access, security and disposal decisions across all PHC departments.

2.7.4 Medical records file storage

National Guideline for Filing, Archiving and Disposal of Patient Records in Primary Health Care Facilities (2017:7) postulates that the filing of patient records must be done systematically, using a standard record registration system and it must be stored in a record storage room that adheres to requirements for records storage areas. Green and Bowie (2011:217) opine that paper-based patient records require filing equipment for storage purposes, and the selection process must consider the location of files, the number of records to be filed, the length of time records will be stored, and type and cost of filing equipment. Filing equipment should also promote the easy retrieval and preservation of medical records. Where appropriate, files should be colour coded and supports should be provided to prevent files from slipping down. It is of paramount importance that files and cabinets should be properly labelled.

The National Guideline for Filing, Archiving and Disposal of Patient Records (2017:9) postulates that it is the responsibility of clinic administrative staff working at reception to file-back patient records into the filing system after the designated person has consolidated all patient records used for the day. The basic ways of storing files are lateral, vertical and stacking. Any page seen to be falling out must be reinforced and filed back into the appropriate place. NHO 2007 states that it is considered to be in the best interest of patients and their care that the full history of their care is available to the current multidisciplinary team. It is thus, essential that all documentation relating to the patient is filed promptly in the healthcare record.

Roper & Miller (1999d:38) postulate that lateral filing is done in four-drawer filing cabinets, with the files held upright on their long narrow edge, often within a ‘hanging folder’. Roper & Miller

(1999d:38) further note that vertical filing is where files are held upright on their short narrow edge with their 'spines' facing outwards and is done in cupboards or on racking or shelves. The stacking method stores files flat, one on top of the other, with the spines of the files facing out. Supports should be in place to prevent files from slipping down. Shelves and cabinet drawers which hold files should be clearly labelled to indicate the file number ranges. Sufficient space should be left on shelves or in drawers to allow for easy withdrawal and replacement of files. National Guideline for Filing, Archiving and Disposal of Patient Records (2017:9) posits that patient records must be filed on labelled shelves or in cabinets according to the unique registration number.

2.8 THE ROLE OF RECORDS MANAGEMENT IN SUPPORTING PHC SERVICES

Pemberton (1991) and Ngoepe (2008), as cited in Mampe and Kalusopa (2012:1), assert that better service delivery always begins with better records management practices. Luthuli and Kalusopa (2017) note that at the core of the delivery of service has been the need for effective records and information management delivery systems of reliable and authentic information so that patients are able to receive quality medical services. Thus, high-quality information underpins the delivery of high-quality evidence-based safe healthcare for patients, and many other key service deliverables. NHO (2007:11) notes that to ensure that patients are treated efficiently and effectively the current medical team need easy access to high-quality healthcare records. All staff should be aware of their responsibilities for the upkeep, correct filing and acceptable presentation of healthcare records to support the provision of high-quality patient care. The World Health Organization (WHO) (1978:1) stated that the proper collection, management and use of information within healthcare systems "will determine the system's effectiveness in detecting health problems, defining priorities, identifying innovative solutions and allocating resources to improve health outcomes".

2.8. 1 Information retrieval

NHO (2007:13) notes that information is only valuable if it can be accessed when it is required. This is particularly true for healthcare records. It is essential that policies and procedures are in place in each hospital to ensure the successful, timely location of the missing record. Mampe and Kalusopa (2012:9) state that it is imperative that organisations should have effective records management programmes that would make available records and information contained therein when required. Marutha and Ngoepe (2017:1) posit that if medical records are not managed properly, it becomes difficult to retrieve such records, which results in hospitals not being able to render healthcare services or these services being rendered incorrectly, especially for chronic patients. The study conducted by Marutha and Ngoepe (2017:1) revealed that missing medical records negatively affected timely and effective healthcare service delivery. This resulted in

patients having to wait longer to be treated and in some instances; patients are being treated without their medical history.

2.8.2 Integration of PHC services

Rigby, Roberts, Williams, Clark, Savill, Lervyand Mooney (1998) state that an integrated primary care record that integrates the functions of general practice and community health systems is the necessary prerequisite to the successful implementation of effective, efficient, and good quality primary care. Rigby *et al* (2008) further stipulate that for integrated PHC to work effectively, it is important for all information about a patient to be drawn together into a single record that can be used by any health professional involved. An integrated record would enable common sharing of all the elements of the clinical process i.e. history taking, assessment, the planned pattern of care, delivery of care, and ongoing evaluation. It would thus show one integrated plan for the support of a patient, with common care objectives, giving a framework for all team members to use and to adjust when they identified a change in requirements. Rigby *et al* (2008) note that prerequisites to implementing the integrated primary care record includes a good record structure, shared concepts of professional process, unique patient identifier, core set of information about patient, protocols to maintain confidentiality, common terminology and coding, interfaces between agencies, appropriate information technology and acceptance by patients.

2.8.3 Infrastructure

With a proper records management programme in place, appropriate records infrastructure will be in place thus saving office space, enhancing enough working area. Yazdi-Feyzabadi *et al* (2005) note that strengthening information and communications technology infrastructure and developing the computerised process on recording, collecting and producing the health system data and information can play a significant role in PHC services, especially to increase efficiency in the management of the health system.

2.8.4 Correct Identification

It is useful to assert that patient identification and the matching of a patient to an intended treatment are of paramount importance in a PHC setting. Risks to patient health may occur when there is a failure to correctly identify patients and match that information to an intended clinical intervention, which results in the wrong person being given wrong diagnostic testing and wrong medication. It is vital that the patient's name be on each side of each page where patient information is documented and each page to have the correct unique patient identification number so that missing pages can be traced back to their correct file. Correct identification is also important for ward transfers, blood

transfusion, maternity and confirmation of death. NHO (2007:1) notes that "throughout the health-care industry, the failure to correctly identify patients result in medication errors, transfusion errors, testing errors, wrong person procedures, and the discharge of infants to the wrong families".

2.8.5 Communication

The healthcare record and its content form an essential part of care allowing communication between healthcare professionals and demonstrating that the practitioner's duty of care has been fulfilled. NHO (2007:13) states that the way in which information is given to the patient can help the patient to understand their illness, management options and the reasons for intervention. The healthcare record contains sufficient information to identify the patient, support the diagnosis, justify treatment, document the treatment course and results and facilitate continuity of care among healthcare providers. NHO (2007:13) notes that the content of the healthcare record shall provide an accurate chronology of events and all significant consultations, assessments, observations, decisions, interventions and outcomes. Records kept in an ad hoc manner may reduce medical staff morale as missing records may make it difficult to function at the same time repeat the process of entering data. Rigby*et al (*1998) opine that good healthcare, best use of healthcare resources, and an overall good service delivery can be achieved only with good communications and is difficult to achieve without seamless information.

2.9 SUMMARY

This chapter reviewed pertinent literature that guided the current study and evaluated the information from literature searches to provide baseline information on which to base new evidence. Relevant literature was identified, analysed and evaluated to produce an empirical body of new knowledge. The study on the management of the medical records mainly focused on paper records as it remained the norm in many PHC settings and is the main format used in the PHC of Diepsloot. This chapter pointed out that there is a need for a proper records management system in the primary health sector. The theoretical framework in managing medical records was highlighted by authors and the life cycle concept was chosen from the onset of the study.

The study highlighted the existing legal and regulatory frameworks in support of medical records and archives management. The standard qualification for e records managers was also discussed and the literature revealed that skill and competence formed the basis for achieving the PHC objectives. Roper & Miller (1999e:71) note that the failure to maintain full records, particularly in the case of admissions, discharges, births and deaths, may have serious consequences not only for patients and their families but for the hospital itself in cases where information about past patient

episodes is sought. Issues regarding the security and infrastructure of medical records were reviewed as they concern the rights of the citizens as well as protect the PHC against any legal action. The next chapter discusses research methodology.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

The previous chapter reviewed the literature related to the management of medical records in the primary health care sector, in order to provide a theoretical basis for the study. This chapter takes the reader through the methodologies applied in this study. The different approaches, methods and techniques used in gathering information shall be explained. A research methodology is a scientific approach employed to collect the desired information based on a research problem of the study. Williamson (2010:321) states that sound research principles require that researchers consider appropriate methodologies. This sentiment is echoed by Masuku (2013:109) when he noted that research outcomes are often judged based on the methodologies. When the wrong methodology is applied in a particular context of research, the results may easily be disputed and the credibility of the findings will be questionable. Therefore, for the present study, the appropriate methodology was carefully chosen.

Research methodology serves as a framework for conducting research as its focus is on the principles that govern how research is conducted (Labaree 2014:2). Thus, the research methodology explains how the research questions will be answered by explaining how the research was executed.

The chapter includes a discussion of the research paradigm and approach used, study population, sampling methods and sample size justification. In addition, the chapter discussed data collection instruments; the validity and reliability of the instruments; data collection procedures; processing and analysis of data; ethical considerations and evaluation of research methodology.

3.2 RESEARCH PARADIGM

Creswell (2014:35) defines paradigms broadly as the "basic sets of beliefs that guide action." The term paradigm originated from the Greek word *paradeigma* which means pattern and was first used by Thomas Kuhn in 1962 to refer to a conceptual framework commonly employed by a community of researchers to examine problems and finding solutions to them (Mouton, 1996:203). In other words, research paradigms refer to established research traditions in a particular discipline including the accepted theories, models, body of research and methodologies in a particular field.

Guba and Lincoln (1994:105) also defined a paradigm as "the basic belief system or worldview that guides the investigator, not only in choices of the method but in ontologically and epistemologically fundamental ways". Academic research is formulated on the basis of some underlying philosophical assumptions about what constitutes 'valid' research and which research method is appropriate for the development of that particular research.

According to Polit and Beck (2008:13), the paradigms of human inquiry are characterised by the way they respond to philosophical questions such as "what is the nature of reality (Ontology), what is the relationship between the inquirer and the phenomenon being studied (Epistemology) and how should the enquirer obtain knowledge methodology". Creswell (2007:15) indicates that the research process begins with philosophical assumptions that the enquirers make when deciding to undertake a study. The choice of an approach should be guided by research aims and objectives of the study, as well as the conceptual framework within which the researcher operates.

Interpretivism, positivism and the pragmatism paradigms are the main paradigms mostly used in records management research. The current study was, however, guided by an interpretive paradigm as discussed in detail in section 3.2.3 below.

3.2.1 Positivism

Babbie (2011:35) postulates that positivism, as a paradigm, was coined in the 19th century by the French Philosopher Auguste Comte when he asserted that only scientific knowledge; experiment and observation reveal the truth about reality. However, given the fact that different researchers use positivism in different contexts and settings, it is difficult to explain the positivism research philosophy in a precise and succinct manner (Dudovskiy (n.d). The positivist philosophies tend to be related to hypothesis testing that uses quantitative research methods to analyse data and usually on large-scale phenomenon (Dudovskiy: n.d). According to Sutton (1993:4), as cited in Katuu (2015:173), "positivists prioritise fact and objectivity while interpretivists prioritise the identification of separate understanding for each observation in order to provide its own explanatory context."

The starting points for positivists are models and theories which are then used to define variables, frame and test the hypotheses. Positivists adopt scientific facts and systematise the knowledge generation process through analytical quantification of data to enhance precision. Dudovskiy (n.d) states that the disadvantage of positivism is that, whilst it relies on experience as a valid source of knowledge; it ignores the fact that important concepts such as cause, time and space are not based on experience. Positivists are, therefore, criticised in the literature for their reduction of complex

organisational reality into a statistical deduction. The dominance of positivism was also challenged by critics like Bryman (2008) and Guba and Lincoln (1994) who attack its lack of subjectivity in interpreting social reality. Social reality is regarded as complex and cannot easily be subjected to statistical deduction. However, positivists maintain that it is possible to adopt a distant, detached, neutral and non-interactive position (Morris, 2006:3).

3.2.2 Interpretivism

Patton (2001:39) defines qualitative research as "an approach that uses a naturalistic approach which seeks to understand phenomena in context-specific settings, such as real-world settings, where the researcher does not attempt to manipulate the phenomena of interest. Thus, interpretivists have no dependent and independent variables; they are flexible to the setting and subjects of their study and are open to new knowledge that emerges from the participants. The interpretive methodology is directed at the understanding phenomenon from an individual's perspective, investigating interaction among individuals as well as the historical and cultural contexts which people inhabit (Creswell 2009:8). Interpretivism is associated with qualitative research approach but quantitative methods may be used as well (William, Burstein and McKemmish, 2000). The advocates of the interpretive stance consider that social reality is constructed from the meanings made by people as they interpret the world in a natural setting (William, Burstein and McKemmish, 2000). Interpretive paradigm is applicable in case studies, ethnography, phenomenological study, grounded theory and content analysis (Leedy and Ormrod 2013).

3.2.2.1 Justification of interpretivism

The interpretivism paradigm was chosen at the outset as the philosophical assumption underlying this research study. The researcher's intention was to make sense of the 'meanings' others have about the world (Creswell, 2007:21). In addition, the interpretive perspective would enable the researcher to achieve the purposes of the study, namely to gather detailed explanations of matters surrounding the management of medical records in PHCs. Creswell (2009) states that the discipline area, beliefs, and previous research conducted influence one's worldview. Therefore, using the interpretive perspective enabled the researcher to have a deep understanding of the critical, social and organisational issues related to the management of medical records in the PHC.

Patton (2001:39) notes that the interpretive paradigm "produces findings not arrived at by means of statistical procedures or other means of quantification, but instead the kind of research that produces findings derived from real-world settings where the phenomena of interest unfold naturally." Thus, the interpretive approach enabled the research to better understand the records management conditions in the PHCs of Diepsloot. Qualitative research implies an emphasis on the

qualities of entities and on processes and meanings that are not experimentally examined or measured (Denzin & Lincoln, 2005:10). The researcher's interpretive stance was concerned with understanding the world from subjective experiences of individuals.

It is unlike in the other paradigms, like the positivism paradigm, where the researcher uses a structured approach defining the research problem (Joubert and Ehrlich 2007:77). Thus, the researcher adopted an interactive stance towards the reality under investigation. Social constructions such as beliefs and shared meanings in the interpretive approach produced a profound understanding of context and placing phenomenon within its context.

3.2.3 Pragmaticism

Pragmatists use the mixed method approach where they utilise all research approaches to fully understand the problem. Creswell (2007:23) notes that researchers using the pragmatist worldview will use multiple methods of data collection to best answer the research question and will also employ both quantitative and qualitative collection methods. Pragmatism is an achievable and vital research paradigm for qualitative research. The study did not employ the pragmatism paradigm as it found not suitable for the current study and was found to be having a shallow and amputated worldview.

3.3 RESEARCH APPROACH

Bryman (2004:36) propounds that the selection of a research approach has a bearing on the questions asked, the methods used, the statistical analyses used, the conclusions made and the ultimate goal of the research. Although there are other distinctions in the research approaches, the research approaches are mainly the qualitative, quantitative and mixed-method approach. Quantitative research methods have its origins in the natural sciences and qualitative research methods have its origins in the social sciences. Neither of these methods is better than the other. The suitability of use depends on the context, purpose and nature of the research study. All the three research approaches were discussed below so as to enhance the justification of why the researcher chose the qualitative approach in the research regarding medical records management.

3.3.1 Quantitative approach

The quantitative approach involves the use of closed survey methods and laboratory experiments and usually ends with confirmation or disconfirmation of the hypotheses tested (Creswell 2008). Quantitative research is usually defined as an objective approach which includes collecting and analysing numerical data and applying statistical tests to the data to deduce conclusions. Kumar

(2011:13), Creswell (2007:37) and Leedy and Ormrod (2010:96) ascertain that a quantitative approach is highly formalised.

Barbie (2010) notes that quantitative methods emphasize objective measurements and the statistical, mathematical, or numerical analysis of data collected through polls, questionnaires, and surveys, or by manipulating pre-existing statistical data using computational techniques. According to Leedy and Ormond (2005:135), data collection methods in quantitative research include questionnaire, structured interviews, structured observation, secondary analysis and official statistics, content analysis according to a coding system, quasi-experiments, and classic experiments.

3.3.2 Mixed method approach

The mixed-method research approach integrates both qualitative and quantitative data in the research (Creswell 2014:24). Harrison & Reilly (2011:8) also postulated that mixed-method approach is known to be a profoundly comprehensive technique for research in social sciences through integration of thematic and statistical data. Many studies advocate methodological triangulation because it bridges issues of reliability and validity.

Researchers prefer to use mixed methods approach by taking advantage of both quantitative and qualitative methods, and combine these two methods for use in single research depending on the kind of study and its methodological foundation (Brysman and Burgess, 1999:45). However, Creswell (2014:27) advised against using both paradigms in a single study because the whole exercise can be "expensive, time-consuming and lengthy". Although the mixed method was acknowledged and appreciated, it was not used in the study because the researcher holds an interpretivists philosophical position and a mixed methods research was found to be challenging because of the tensions created by different beliefs. The mixed-method was also found not suitable for the study as the theoretical and conceptual orientation of the study called for an interpretivist's stance to answer the research questions relating to medical records management.

3.3.3 Qualitative approach

The aim of qualitative methods is to determine whether the predictive generalisations of a theory are true (Silverman 2010:8). Thus, the qualitative research approach mainly gives answers to the questions of why and how and involves collecting data by observing what people say and do. Punch (1998:234) also notes that qualitative methods yield non-numerical data that provides depth and detail through description of situations and observed behaviours in order to generate patterns, themes and ideas.

Qualitative data collection tools include observations, document analysis, focus groups and interviews. These data collection tools help the researcher to understand the social phenomena and to elucidate the mental processes underlying people's behaviours. The qualitative research approach is based on the belief that human behaviours are fundamentally different and cannot be categorised. Powell (1997) asserts that qualitative research applies a holistic and natural approach to the resolution of a problem and therefore it can be useful especially in exploratory studies.

In summary, Creswell (2009:175-176), Leedy and Ormrod (2010:94-97) and Kumar (2011:13) state that the characteristics of a qualitative approach are that the research is conducted under natural settings. The researcher is the key instrument, the researcher can use multiple sources of data, uses inductive data analysis, the meaning of a phenomenon is derived from participants, the initial plan for research cannot be tightly prescribed and it forms an interpretive enquiry.

Table 1.1: The basic differences between qualitative and quantitative research approaches

Process	**Qualitative**	**Quantitative**
Questionnaire design	Rely on indirect, projective and open-ended questions.	Rely on direct and structured questions.
Data collection	Researches deal with a relatively small number of informants who are interviewed at length.	A large number of people are interviewed from pre-coded questionnaires.
Analysis and interpretation.	Looks at the total pattern of responses and basis of the analysis on people.	Typically analyse responses to questions across a larger number of people
Instruments	Interviews, focus group discussion, observation and non-numerical analysis	Questionnaires, tests, inventories, checklist and statistical analysis.

Having stipulated the differences and similarities above, the qualitative design was the most suitable for this study.

3.3.4 Justification of the qualitative approach

After considering the objectives of the study, the consequent choice of a qualitative method was found to be suitable for the preliminary inquiry as well as the entire study. Critics of qualitative

research claim that it is purely descriptive and therefore not rigorous and that the data is flawed due to the subjective role of the researcher (Goulding: 2002). The researcher however regarded the qualitative method as appropriate for this study as it allowed flexibility and change of question depending on the current situation. The qualitative approach also promoted increased involvement of the researcher in the research process rather than a situation where the researcher is dissociated with the research.

The researcher has limited understanding of numerical hypotheses and theory testing. Therefore, a qualitative approach was the best approach to this study as it was descriptive in nature. Also, the nature of the study, which is the management of medical records, required the researcher to carefully craft a qualitative research approach and go beyond quantitative statistical results. Table 1.1 demonstrates the basic differences between the quantitative and qualitative research approaches (Bahari, as cited in Chaterera 2013:52).

3.4 RESEARCH DESIGN

Labaree (2004) notes that the research design refers to the overall strategy that you choose to integrate the different components of the study in a coherent and logical way, thereby, ensuring you will effectively address the research problem. It constitutes the blueprint for the collection, measurement and analysis of data. The research design was considered to be the master plan of research that will enlighten the reader on how the study was conducted. Joubert and Ehrlich (2007:77) refer to research design as the structured approach followed by the researcher to answer a research question.

Babbie and Mouton (2001:75) also share the same sentiment that attention has to be given to the research question and the research problem when choosing a research design. Thus, a research design is significant in the ultimate plan to answer the research questions. Coolican (2004:19) explained that research design refers to the steps that researchers follow to complete their study from the start to the end. Research design is a road map to various research operations, thereby making research as economical as possible yielding maximum information with minimum expenditure of effort, time and money.

The research design pinpoints the procedure of how the research is going to be conducted. The choice of a research design by a researcher depends on the nature of the research, the type of research question that the study is trying to answer. The research design outlines the study population, sampling procedures, sample size, data collection instruments, and data analysis to be

employed by the study. The qualitative research designs include the case study design, ethnography, phenomenological study, grounded theory and content analysis. The research design used in this study was the case study design.

3.4.1 Case study

Yin (2009:18) defines a case study as an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly defined. Yin (2009:4) also notes that the case study investigates a contemporary phenomenon within its real-life context. According to Yin (1984), as cited in Zanial (2007:3), there are three types of case studies, namely exploratory, descriptive and explanatory. The exploratory case study aims at exploring a phenomenon in the data that attracted the interest of the researcher while the descriptive case study, the researcher aims at describing a phenomenon, which occurs, on data being analysed (Yin 1984, in Zanial 2007:3).

The researcher intends to use the explanatory case study to clearly explain a phenomenon of data from the surface to the innermost level (Yin 1984, in Zanial 2007:3), regarding the management of medical records at Diepsloot Clinics. Critics of the case study research pose that it is subject to criticism on the basis of non-representativeness and a lack of generalisability in the statistical sense however the researcher is of the notion that analytical generalisation can be achieved through multiple case studies.

3.4.2 Justification of the case study

The case study design was found to favour the qualitative research approach where the focus was on Diepsloot as it alludes to a collection and presentation of information about a small group. The study employed a case study design as it was found to be the best applicable design to enable the researcher to gain a detailed and in-depth understanding of issues surrounding the management of medical records at a local, practical level in the PHC of Diepsloot. Zanial (2007:1) notes that a case study is a noble research method in the sense that it allows the researcher to go beyond quantitative statistical results. Therefore, the case study approach was particularly useful in situations where contextual meanings of the events being studied can be scrutinised to gain more detailed insight. Yin (2009:4) states that the "case study method allows investigators to retain the holistic and meaningful characteristics of real-life events such as individual life cycles, small group behaviour, organizational and managerial processes".

Yin (2004:08) argues that 'the case study allows an investigation to retain the holistic and meaningful characteristics of real-life events such as individual life cycles, organisational and

managerial processes. Yin (2004:09) also notes that in collecting case study data, the main idea is to "triangulate" or establish converging lines of evidence to make your findings as robust as possible. This was achieved when different records management personnel were interviewed and all appear to be giving similar evidence about how the records are managed.

3.5 STUDY POPULATION AND JUSTIFICATION

Mouton (1996:134) also defines a population as a collection of objects, events or individuals having some common characteristics, which the researcher is interested in studying. In this research, the population was the entire group of people that were of interest to the researcher to accomplish the study objectives. The population of the study was regarded as one of the fundamental aspects of the research design as it determines the feasibility of the study. Furthermore, it was of vital importance that the target population is properly and accurately selected in order to answer the research question and also to obtain adequate results.

Alvi (2016:10) notes that the target population refers to all the members who meet the particular criterion specified for a research investigation. The population of the study consisted of the staff members of the two primary health care facilities, namely the OR Tambo Clinic and Diepsloot South Clinic. The population included managers, medical records staff, nurses, laboratory technicians and community health workers of the PHC centres of Diepsloot. The criterion that was used to select the population of the study was purposive sampling. The researcher purposely selected everyone who directly involved with managing medical records. Below is table 1.2 showing the population distribution of the respondents:

Table 1.2: Population distribution of the respondents

Population distribution of respondents according to their respective PHC	OR Tambo clinic	Diepsloot South Clinic	Total
Admin clerks	9	9	18
Data Capturers	6	5	11
Doctors	1	1	2
Nurses	10	9	19
Total	26	24	50

3.6 SAMPLING

The use of an appropriate sampling technique is very important to make a research to be meaningful and successful. A non-probability technique was used in this qualitative research. Alvi (2016:28) notes that the various types of non-probability sampling are volunteer sampling, convenient sampling, purposive sampling, quota sampling, snowball sampling, matched sampling and genealogy-based sampling. The current study however, adopted the purposive sampling method.

3.6.1 Purposive sampling

Patton (2002) defines purposive sampling as a technique widely used in qualitative research for the identification and selection of information-rich cases for the most effective use of limited resources. The purposive sampling technique was viewed as appropriate for this qualitative study as it allowed the researcher to specifically handpick population for the study so as to get a detailed and comprehensive explanation about medical records management issues that the study sought to investigate. The participants chosen in the study were selected through subjective judgement and clearly defined. Individuals were selected on the assumption that they possess knowledge and experience based on their specialised expertise and close involvement in records management and are able to provide information that is detailed.

The different types of purposive sampling as postulated by Palinkas, Horwitz, Green, Wisdom, Duan and Hoagwood (2013:2) are maximum variation, extreme case, and homogeneous, typical case and total population case. This study, however, adopted the total population case. Total population sampling is a type of purposive sampling technique that examines the entire population with specific attribute, knowledge and skills.

Total population sampling was the ideal sampling technique as the population size is comparatively small. All the people involved with the management of records in the three PHCs were selected to get deep insights into the phenomenon. Ngulube (2005:130) asserts that it is generally agreed that there is little point in sampling populations of less than 100. Selecting the whole population involved in the management of medical records reduced sampling error and achieved the desired level of precision. Figure 1.4 below summarises the sampling procedure undertaken by the study.

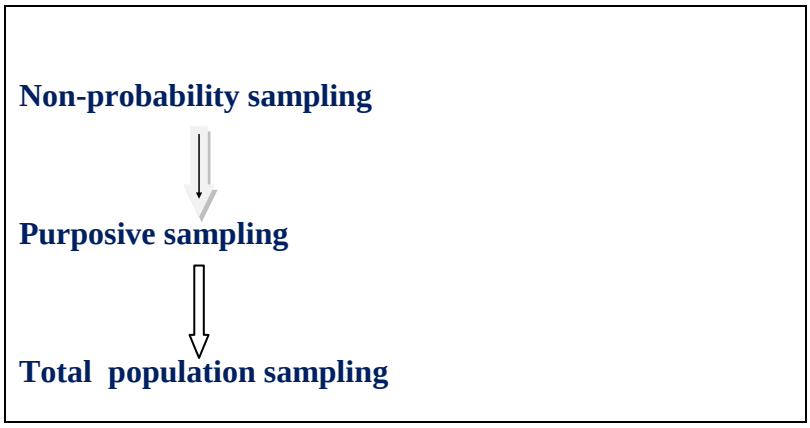

Figure 1.4: Summary of the sampling technique

3.7 SAMPLE SIZE

The sample size of this study consisted of a target population of 26 participants at OR Tambo and 24 participants at Diepsloot South Clinic. The sample size was 50 respondents, which is the total number of people responsible for the management of medical records in these two PHCs. Kumar (2011:197) noted that as a general rule when there is a larger sample size, the findings will be more accurate. However, the researcher's approach was to select a balanced population, which is neither too big nor too small, guided by the availability of time and money needed for travelling and equipment required to conduct the research.

3.8 DATA COLLECTION INSTRUMENTS

It is of paramount importance that selecting the manner of obtaining data be done carefully with sound judgment. The qualitative data collection instruments include structured and unstructured interviews and observations, focus groups, documents and audiovisual materials as noted by Creswell (2009:178). According to Thurmond (2001:256) and Cohen, Manion and Morrison (2000:112), using more than one data collection instrument is called the methodological triangulation technique. The triangulation technique permitted the researcher to use more than one data collection instrument. Triangulation was used as verification and complementation of findings through the convergence of different tools.

The research instruments that were used in this study included face-to-face interviews, focus group interviews and observations. These instruments were designed specifically to allow the researcher to systematically collect information on the management of medical records in PHC centres of Diepsloot. The main factors that the researcher considered when selecting the appropriate type of

data collection tools where scope, objectives of the study, type of data required, time frame, financial constraints, how will the data be analysed and accuracy.

3.8.1 Face-to-face interviews

Interviews were used as the means to collect primary data through oral questioning and probing of respondents. The researcher used face-to-face interviews because the population was small, and it also allowed the researcher to clarify ambiguous questions. Interviews enabled a focused exploration of individuals' perceptions of events relating to the management of medical records. The study used structured, semi-structured and non-structured interviews. Ngulube (2003:223) noted that in the structured interview the researcher strictly adheres to a script or interview schedule. The use of structured interviews lessened the chance of important topics being omitted. Ngulube (2003:223) continues to note that semi-structured interviews are less formal than structured ones in that the interviewer can explore issues that emerge by further asking follow-up questions. Unstructured interviews can be time-consuming as well as being possibly influenced by interviewer bias but, they help discovery of new aspects of the problem by exploring in detail the explanations supplied by the respondents (Bless & Higson-Smith 2000:108). Each interview session was recorded on audio tape and later transcribed into Microsoft Word. The researcher also took back-up notes.

The open-ended questions for the interviews were derived from the objectives of the study and refined to develop the interview guide. Views are more freely expressed when the format of the interview is more flexible and open-ended than where the interview style is guided and restricted to a standard set of questions. These questions sought information from interviewee's perspective about their knowledge and usage of legislative and regulatory instruments and their records management skills and competences. Unlike questionnaires, the researcher had the opportunity to clarify and interpret questions for better understanding by respondents and explain why sensitive questions, like the records management training and qualifications, were asked.

The interviews gave non-verbal communication like gestures, glances, pauses and facial expressions, as they were a valuable source of information. Semi-structured interviews provided an opportunity to gain in-depth data through probing and asking additional questions. The respondents were also made aware of the time when the researcher will conduct the interviews. The respondents were given a letter explaining the purpose and significance of the study and that their participation will be important towards improving the management of medical records in the PHC of South Africa. Unlike questionnaires, interviews had no adverse effects like low response rate, reporting errors, completion of by the wrong person, and lack of control over how respondents

interpret questions. To achieve reliability the interview guide was pre-tested in order to uncover any defects in questions, polish and improve the standards of questions. The questions asked were exhaustive in their elements of inclusion and most appropriate questions were asked to elicit empirical data. The interview guide was divided into subsections according to the objectives of the study.

3.8.2 Focus group interviews

According to Rabiee (2004:655), a focus group is a technique involving the use of in-depth group interviews in which participants are selected because they are a purposive depiction of a specific population. The participants in focus groups were purposely selected in order to select information-rich participants. Jamieson and Williams (2003:272) note that the philosophical underpinning of the focus group methodology is based on the premise that attitudes and perceptions are not developed in isolation but, through interaction with other people. Each focus group consisted of 8 participants so as to yield more responses and a wide array of data; at the same time, it was deemed to be a manageable number. The focus group participants involved all the doctors, nurses, admin staff all the records staff. The focus group participants were 50 in total.

3.8.3 Observations

This technique was used primarily to gain insights through visual surveillance and through systematically recording phenomenon and evaluating components in greater detail. There are structured and non-structured observations as noted by Ngulube (2003:225) that in structured observation, the observer knows in advance what aspects of a situation are to be observed and which criteria would apply. On the other hand, in unstructured observation the aspect of the situation to be observed is not specified in advance, the researcher will interact directly and intensively with the subjects of their research a set timeframe. The researcher employed structured observations while taking comprehensive notes and photographs. Appendix 7 has the observation checklist.

The researcher observed participants on how the medical records are managed by the PHC of Diepsloot. The 50 participants where made aware that there were being observed. Burns (2000:412) noted that observational data could be quantified as long as the researcher knows what is to be observed and record. Observations will provide crucial statistical data as interpretive research is generally accepted when researchers interact directly and intensively with the subjects of their research over a given period of time. The observation process was guided by the objectives of the study. The observational categories that researcher observed were the infrastructure, storage

equipment, storage environment and handling procedures used at Diepsloot clinics in order to gain significant depth to the case analysis.

3.9 ESTABLISHING TRUSTWORTHINESS IN QUALITATIVE RESEARCH

Rowley (2002:18) pointed out that the case study researchers should appreciate how issues of validity and reliability can be established in their investigations. In a qualitative approach, reliability and validity are conceptualised as "trustworthiness, rigour and quality" (Golafshani 2003:604).

3.9.1 Data reliability

Parahoo (1997:265) states that the reliability of a questionnaire refers to "the consistency with which respondents understand, and respond to, all the questions". Burns (2000:417) notes that reliability of a research tool depends on how other researchers can replicate the steps of the original research and have similar conclusions. The aim of the research procedures and research tools was to yield consistent measurements, for the researcher to satisfactorily draw conclusions, formulate theories and make claims about the generalisability of the research. When a wrong methodology is used in a particular context of research, results might be debatable and may lack credibility. Chaterera (2013:84) notes that to achieve reliability of the research instruments, an adequate, broad and representative population must be used. To yield consistent and reliable results, questions and instructions were made very clear so that they can yield the same results when the study is repeated.

Rowley (2002:20) notes that one way of achieving reliability in a case study is by documenting procedures of the study and keeping proper records of the study. In testing reliability, one would be examining its feasibility as a measurement device. Thus, reliability is the degree to which a test consistently measures what it sets out to measure while at the same time yielding the same results (Babbie and Mouton 2001:119).

3.9.2 Data Validity

Validity refers to the extent to which a study precisely reflects a specific concept that the researcher is attempting to measure. The four common methods of validity testing are: content validation, criterion-related validation, faces validity and construction validation. To ensure content validity, the research instruments were pre-tested through delivery to known and appreciated experts in the field of records management and to a research methodologist who provided their inputs in content validation.

Content validity was achieved by ensuring that the questions addressed set objectives of the study relating to the management of medical records. Construct validity was achieved by linking the items in the measuring instruments to the theoretical components of the research topic covered in the previous chapters.

3.10 ETHICAL CONSIDERATIONS

Ethical issues are very important in any academic research. The research was based on the philosophy that a sound thesis is a product of ethically obtained data. The researcher adhered to the standards of professional conduct and behaviour. The foundational principles that formed the basis of the researcher's ethics are objectivity, honesty, confidentiality, integrity, courtesy and consideration. If the outcomes of the study were to be implemented, they would contribute to better the practices in the management of medical records.

The study acknowledged Creswell (2009:87) when he says, "It is important for researchers to protect their participants, develop a trust with them and promote the integrity of research and guard against misconduct." The participants in this research were provided with information about the objectives of the study. Participants were also allowed time to ask questions and get clarity before responding to any questions so that they could make an informed decision for consent to participate in providing the information required.

During the interview process, the respondents were advised that they are under no obligation to answer any given question and could opt-out of answering if they so desired as stated in the UNISA Policy on Research Ethics (2014:13-14). In conducting the study, the researcher ensured that the rights and dignity of respondents were respected, and that the respondents are not harmed, and the information gathered was strictly used for research purposes only. The respondents to the interviews and those that participated in the observations were told the purpose of the study and they willingly took part.

Before conducting the study, the researcher obtained ethical clearance from the UNISA ethics review committee. Formal letters requesting permission from the Department of Health as well as from the managers of the concerned PHCs to conduct the research were also be sent. The letters communicated the objectives of the study and how the study will help the Department of Health in managing their medical records.

The researcher made an effort to comply with the University of South Africa's (UNISA) policy on research ethics (2012) which amongst other principles call for acknowledgement of other authors or colleagues' work through correct citation. Thus, the researcher avoided plagiarism, falsification of information, incorrect citation or misinterpretation of other people's work.

3.11 EVALUATION OF THE RESEARCH METHODOLOGY

The researcher addressed how the study overcame criticisms posed by Goulding (2002) that qualitative research is purely descriptive and therefore not rigorous and that it is too subjective and impressionistic. This chapter also explained why the case study method was the chosen design and how the researcher overcame issues of validity and reliability of the data collecting instruments.

3.12. DATA ANALYSIS AND PRESENTATION

Flick (2013:5) notes that qualitative data analysis is the classification and interpretation of material to make meaning in the material that is represented in it. The data collected were qualitatively analysed using the planned qualitative content analysis system in order to describe and interpret different phenomena in greater detail. According to Alreck and Settle (1995:271), as cited in Ngulube (2003:229), qualitative content analysis involves collecting and organising information systematically in a standard format that allows the analysts to draw conclusions about the characteristics and meaning of recorded material. Thus, the analysis of the interview responses regarding medical records management in the PHC was incorporated into the qualitative database and coded accordingly to present data in an intelligible and interpretable form. The researcher used the qualitative computer-aided content analysis software called ATLAS.ti^{tm}. ATLAS.ti^{tm} enables the researcher to analyse data faster as noted by (Creswell, 2008:249).

According to Newby (2013: 459), the process of analysing qualitative data entails shaping data into a form where it can be interpreted in such a way that it contributes to an understanding of the research issue. In the qualitative paradigm, which formed the basis this study, data analysis entails categorising and summarising data in order to answer the research questions. The researcher provided an analysis of the state of records management in the primary health sector in Diepsloot, based on the data that was collected in line with the research questions. During data analysis, the principal aim was to extract all the relevant information, hidden in the mass of collected raw data through content analysis.

The research used data analysis tools such as tables, graphs and charts. Ngulube (2005:48) found out that, a survey of thesis tables, charts, graphs and statistical summaries are popularly used in research data analysis. Data presented by data analysis tools will be explained in detail in the next chapter.

3.13 CHAPTER SUMMARY

This chapter covered the research methodology used in the study. The chapter described and used the literature, mostly from records management, to justify and explain the philosophy and design strategy that underpinned the study. The study explained the research paradigm; the research approach adopted and discussed the researcher's interpretivist's stance to research and the subsequent choice of the qualitative approach. The chapter also outlined the reasons why a case study was the selected study design in the management of medical records on the PHC of Diepsloot. The study population was clearly outlined

The chapter also discussed issues of reliability and validity within the context of the qualitative research approach. The researcher explained how ethical issues were considered in this study and provided an overview of the data collection and analysis methods used in the study. The next chapter will focus on the analysis and presentation of the research results obtained from the study.

CHAPTER 4

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 INTRODUCTION

The preceding chapter discussed the methodology and study design employed in this study. In this chapter, the qualitative data gathered in the study is presented, analysed and interpreted in a systematic manner to examine the management of medical records at the PHC sector of Diepsloot.

The chapter is presented in line with the Information Science: Guidelines for Masters and Doctoral Studies (2018:54) which states that "in most cases, the results and interpretation are effectively combined in one chapter". The study focused on Diepsloot PHCs, namely the OR Tambo Clinic and Diepsloot South Clinic.

4.1.1 Overview of qualitative data presentation

The data presented were the focal point in answering the research questions. Data presentation was done according to Brink (2006:170-171), through categorising, ordering, summarising and describing the data in meaningful terms. Even though the study had a target sample size of 50 participants from Diepsloot PHCs, only 45 (90%) were available to participate in the study. These interview participants in this study were carefully chosen as discussed in chapter three, to include only those who are directly involved in the creation and management of medical records. Thus, data presented in this chapter was collected from medical professionals as they record data for the monitoring and evaluation of patient care and from administrators who are directly involved in records management, in order to gain integrated insights into the matter under study.

The qualitative data presented in this study was from data collected from carefully constructed face-to-face interviews, focus group interviews and observations (Miles & Huberman 2004 and Polit & Beck 2008). For focus group interviews, the records officers were arranged into five groups of four members and each group was given five research questions relating to medical records. The groups were given 20 minutes to brainstorm the answers and thereafter asked to report on the issues, which they considered to be the most important. An interview and observation guide was prepared as part of the study, using information drawn from the objectives of the study and the literature to ensure consistency in the questions asked.

However, presenting the in-depth qualitative results was found to be challenging as they cannot be set out in a neat sequence of graphs, as would be typically found within quantitative research. The

findings were descriptively presented and further expounded using symbolic representations such as words (primarily participants' words), pictures, tables and bar graphs. The purpose of this chapter was to transform raw, imprecise and diffuse data from interviews to present meaningful results of the study. The qualitative study was presented according to imaging themes in order to answer the why and how questions from the participants' interpretations of phenomenon. Data presentation was the foundation for analysis and interpretation.

4.1.2 Overview of qualitative data analysis and interpretation

Data analysis and interpretation of this study were also based on data presented from the interviews and observations conducted at Diepsloot PHCs and were both incorporated into the discussion. It is noted by Flick (2013:1) that data analysis is an essential step in qualitative research, and it is the analysis of data, in a decisive way, which forms the outcomes of the research. The process of data analysis followed in the current study was postulated by Burns and Grove (2005:452) when they noted that data analysis begins with preparing data for analysis; confirmatory analysis guided by questions and objectives, and interpreting results of statistical procedure. As clearly outlined in chapter three, the research used qualitative data analysis guided by an interpretive paradigm, which aimed to narrate the viewpoints of the participants. This involves sifting raw information, ordering it and constructing a framework for making sense from the mass of collected data. Robson (2011:468) also stipulates that the central requirement in qualitative analysis is clear thinking on the part of the researcher. The analytical process, as stipulated by De Vos, Strydom, Fouche and Delport (2011:333), entails reducing the quantity of the information, sorting out significant from irrelevant facts, identifying patterns and trends and constructing a framework for communicating the essence of what was revealed by the data.

The qualitative data analysis in this study about medical records management was done according to the qualitative content analysis process. According to Garbich (2013:190), content analysis is a systematic coding and categorisation approach used to explore large amounts of existing textual information in order to establish the patterns of words used, their frequencies and the relationships. The first steps in qualitative content analysis were to record interview responses using audio tapes and later transcribe them into MS Word format. The next step in the content analytical process was to code the interview responses according to emerging related themes to form an understandable framework. According to Punch (2011:175) and Polit and Beck (2004), coding must be carried out as a first step in the analysis of data. It acts as a preparation of the data for more advanced analysis. The researcher used the qualitative data analysis software, ATLAS.ti8. ATLAS.ti8 enabled categorisation of coded phrasing, context, wording, frequency and specificity of responses through analysing recurring features. The codes were then evaluated and compared for thematic

relationships. Emerged data were descriptively presented, according to Neuman (2011:510-514). The qualitative content analysis process is summarised in figure 1.5 below.

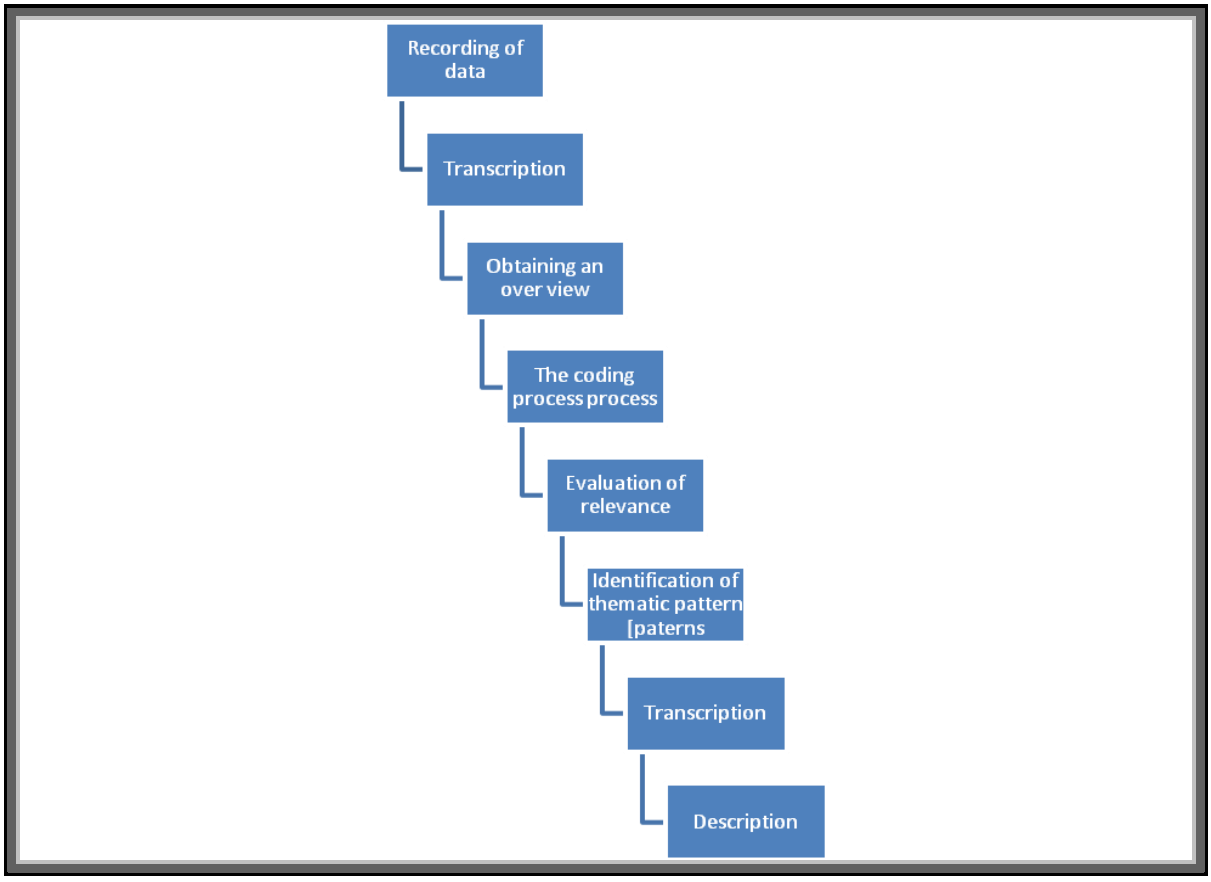

Figure 1. 5: Qualitative content analysis process

The study also employed inductive reasoning in analysing the qualitative data in order to constructively gain rigour. Creswell (2008:175) states that inductive process illustrates working back and forth between the themes until the researchers have established a comprehensive set of themes. Creswell (2008:175) states that inductive reasoning involves collaborating with the participants interactively so that participants have a chance to shape the themes that arise from the process. Figure 1.6 below graphically depicts the nature of inductive reasoning adapted from Leedy (2010:34).

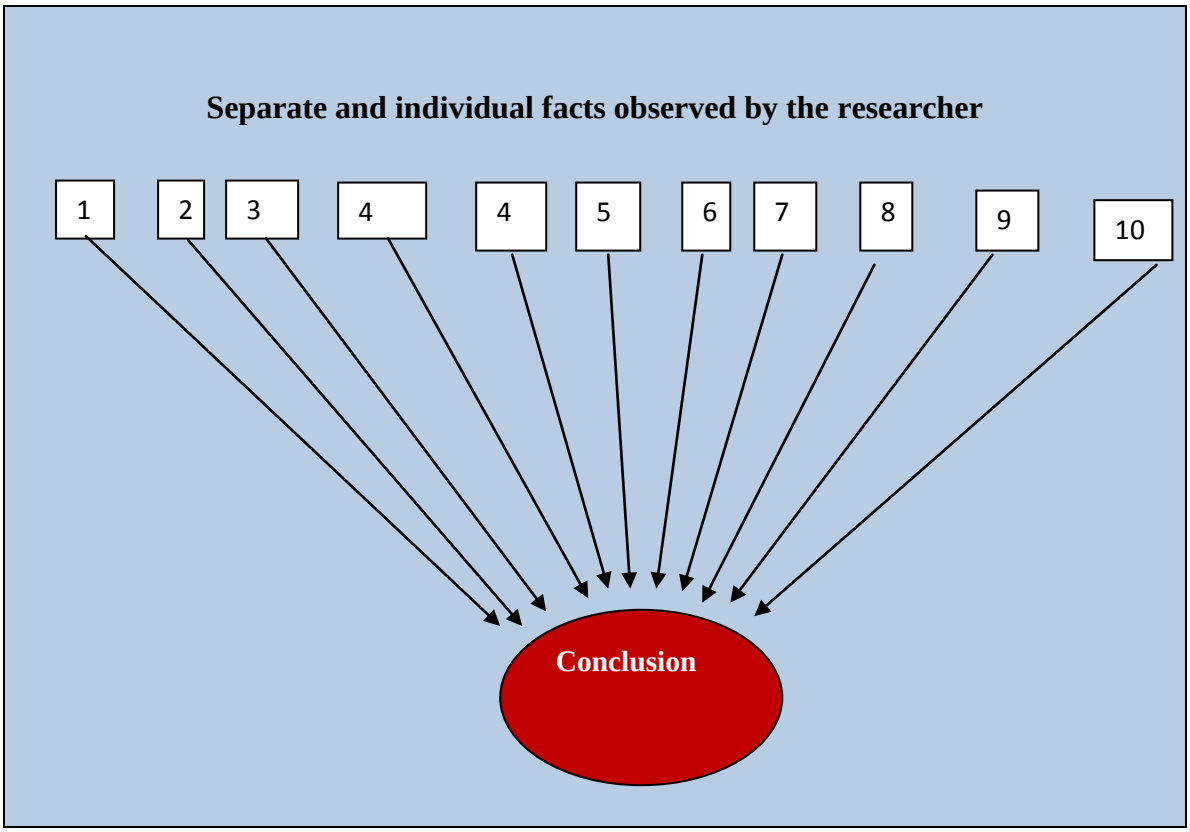

Figure 1.6: Inductive process

Data presentation, analysis and interpretation were done according to the objectives of the study. Each research objective was divided into two sections: the first section presented the findings, and the second section presented the analysis and interpretation of the findings. The purpose of this study was to examine the management of medical records in support of primary health care services of Diepsloot in the Gauteng province of South Africa.

4.1.3 Response rate and participants' profile

The researcher had a target population of 50 participants. The response rate of the selected participants to the invitation to participate in the interviews was more than anticipated. A total of 45 participants were available for the interviews. According to Kothari (2004:23), a response rate of fifty per cent is sufficient for data analysis; while a response rate of sixty per cent and seventy per cent is considered to be good and very good respectively. The 45(90%) response rate obtained in this study was considered adequate to make impartial presentation, analysis and interpretations of data. The high response rate was because the participants were enthusiastic to participate and contribute to having an improved medical records management system. The other possible reason for the high response rate was that the District Office of the Gauteng Department of Health had authorised the research (see appendices 3 and 4 for the letter of request and approval letter).

Interviews as a data collection tool made the response rate very high as cases of non-response were avoided.

A question on job categories was also asked in order to assist the researcher to determine whether participants were balanced in terms of these categories. The participants hold various positions in the PHCs, with at least some of their duties being related to the management of medical records. The participants to the study included medical practitioners, who are the main creators of medical records and the administrators who are responsible for the maintenance of the records. Health practitioners (nurses, doctors and other health professionals) are responsible and accountable for ensuring the entry of high-quality medical records for each individual patient. The participants comprised of 10 data capturers, 18 admin clerks 15 nurses and 2 doctors. The numbers of participants per job category are presented in figure 1.7 below:

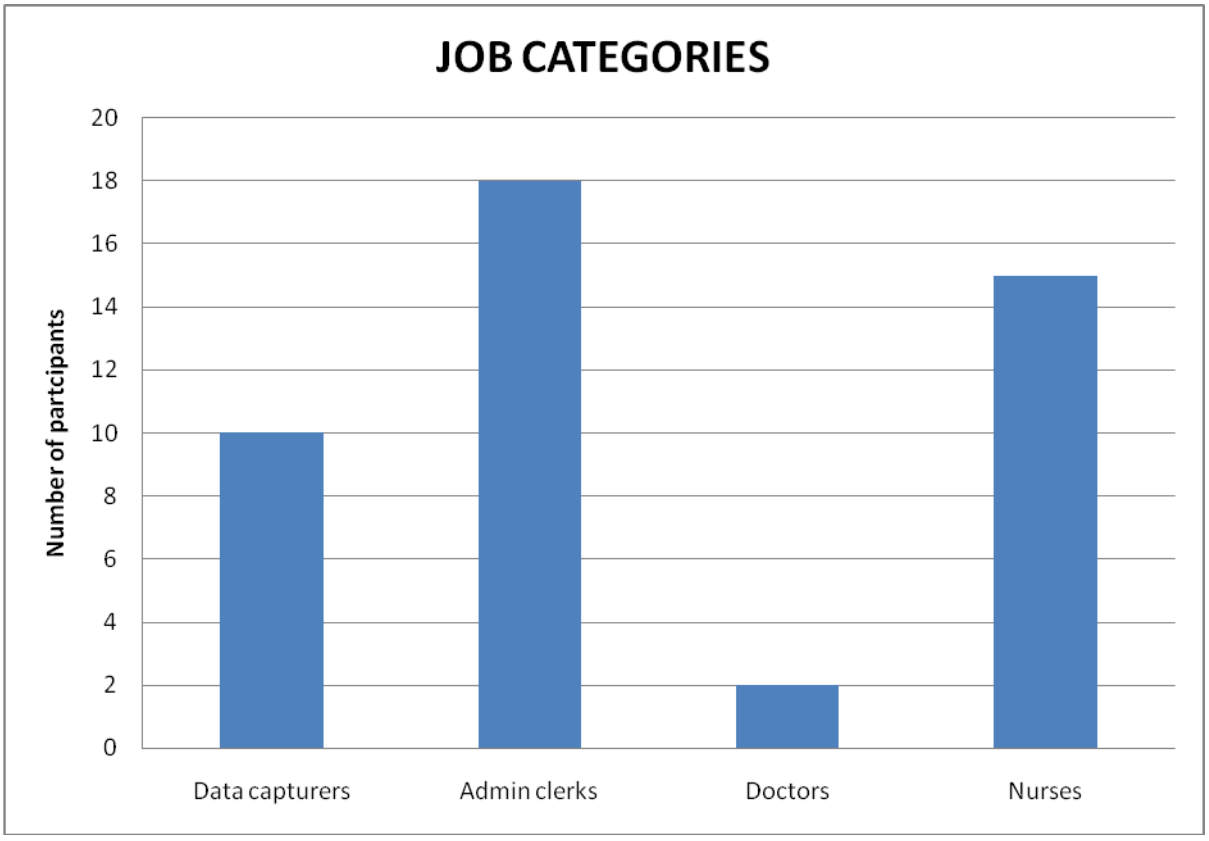

Figure 1.7: Responses per job category

Table 1.3 below illustrates the codes given to participants.

Table 1.3: Participants codes

JOB TITLE	PARTICIPANTS' CODES
Doctors	1 2
Nurses	3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
Admin Clerks	18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34
Data Capturers	35 36 37 38 39 40 41 42 43 44 45

4.1.4 Types of medical records created by the Diepsloot PHC

The objective of this section was to identify the types of medical records created by the PHCs of Diepsloot. From the interview results and observations, the researcher found out that the Diepsloot PHCs basically create and keep three classes of medical records, which are;(i) mother and child files, (ii) acute files, and (iii) chronic files. Mother and child files include family planning files, antenatal care files, postnatal care files and well-baby or Expanded Programme on Immunisation (EPI) files. Acute files include Integrated Management of Childhood Illness (IMCI), oral health and minor ailments files. Chronic files include HIV Comprehensive Care, Management and Treatment (CCMT) files, tuberculosis (TB) files, Non-communicable diseases (NCD) files and mental health files. Table 1.5 below presents a summary of the medical records created by Diepsloot PHCs.

Table 1.4: Medical records created by Diepsloot PHCs

MOTHER AND CHID FILES	CHRONIC FILES	ACUTE FILES
Family planning	CCMT	IMCI
Antenatal	TB	Minor ailments
Postnatal	NCD	Oral health
EPI	Mental health	

A follow-up question was asked to determine the processes and procedures followed by the participants in creating medical records. The 45 participants indicated that these records were either created when the patient visited the PHC or was received from a referral or transfer cases

from other PHCs. Medical practitioners indicated that upon attending to a patient, all the clinical procedures carried out were captured and documented in the medical record. The study further found out that the records existed to document patient information and give evidence on the care given. This is in line with the stipulations of Comeford (2003), who states that medical records provide evidence on the quality of patient care and is used to evaluate and enhance patient care.

Medical records documented patient care which comprised personal information, medical history, symptoms, diagnosis, treatment plan, instructions given to patients, medication prescribed to patients and additional comments. The Diepsloot PHC records are created, in accordance to Green & Bowie (2011:71), when they ascertain that medical records are a repository of information that includes demographic data, documentation to support diagnoses, justify treatment, and record treatment results. The study revealed that patient records also save as legal documents, which could be used as evidence in a court of law.

4.2 LEGAL AND REGULATORY FRAMEWORK

The first objective of this study was to ascertain if there are any specific policies and procedures governing the management of medical records in Diepsloot clinics. Here, the study also sought to determine the level of staff knowledge on the implementation of records management policies and procedures at the Diepsloot PHCs. The main themes in this section covered:

- Policies in place for medical records management.
- Compliance with relevant legislation and regulations.
- Records management programme.
- Responsibility for medical records management.

4.2.1 Policies in place for medical records management in Diepsloot PHC.

The interview question was aimed at establishing if the participants knew about any policies regarding the management of medical records in the PHCs of Diepsloot. Whilst the participants indicated that they were not aware of any specific policies, 26 participants were aware of the 'Mission Statement'; five participants were aware of "The Ideal Clinic" and 14 participants were aware of the Standard Operating Procedure: Facility Level (SOP).

To put the reader into perspective, The Ideal Clinic is defined in the Ideal Clinic Manual (2018:1), as a programme initiated by South Africa's National Department of Health (NDoH) in July 2013 as

a way of systematically improving and correcting deficiencies in public sector PHCs. The Ideal Clinic Manual (2018:1) further stipulates that an ”ideal clinic” is “a clinic with good infrastructure, adequate staff, adequate medicine and supplies, good administrative processes and adequate bulk supplies that use applicable clinical policies, protocols, guidelines as well as partner and stakeholder support, to ensure the provision of quality healthcare services to the community”. Thus, the Diepsloot PHCs operate according to the guidelines stipulated in the Ideal Clinic document.

Participant 45 explained that the SOP, in the context of medical records management, is a guideline which enables records handlers to achieve standardisation in data collection, capturing, collation, storage, analysis and transmission to other levels of the health system. The District Health Management Information System (DHMIS) Standard Operating Procedures: Facility Level (2012:10) stipulates that: “these SOPs present basic and practical steps to be followed by health care providers and health information management personnel to ensure that data is appropriately handled and used to improve service delivery at local level, prior to submission to the next level of the health system, within the specified time frames”. The researcher observed that the SOP guidelines for data capturing and records management were placed on the notice boards for all the staff to read. However, the SOP is not exhaustive and does not extensively cover basic and essential records management issues, like medical records retention periods, disposal and archiving. The SOP acts as a guideline for procedures to be followed when managing PHC records to ensure good quality and harmonised medical records.

A follow-up question was asked to establish if the management of PHC medical records operates in conjunction with key pieces of legislation that supports the development and implementation of health information. The key legislation including the National Health Act 2003 (Act No. 61 of 2003), Constitution of South Africa (Act No. 108 of 1996), the National Archives and Records Service of South Africa Act (Act. No. 43 of 1996 as Amended), the Promotion of Administrative Justice Act (Act No. 3 of 2000) (PAJA, the Promotion of Access to Information Act (Act No. 2 of 2000) (PAIA) and Protection of Information Act (Act No. 84 of 1982) (POPI).

Only the two facility managers indicated that they were aware of these Acts and the other 43 participants indicated that there were not aware of them. The researcher concurs with Chachage and Ngulube (2006:10), when they stipulated that the way in which records are created, maintained, handled, stored, indexed, retrieved, controlled, preserved, retained and disposed of must be done in

compliance with legislation and standards. Thus, records management practices must meet with the stipulated national and international standards set by the applicable regulatory framework.

4.2.2 Compliance with relevant legislation and regulations

This section was aimed at ascertaining from the perspective of the participants if the PHCs comply with relevant legislation. The participants pointed out that the PHCs did not comply with the Ideal Clinic and the Standard Operating Procedure: Facility Level (SOP). According to participants 25, 26 and 27, who happened to be temporary Economic Work Programme (EWP) workers, they pointed out that the lack of training by the PHC to temporary staff leads to non-compliance and lack of awareness of the legislation in place.

Other participants pointed out that shortage of resources like cabinets, storage files and other storage equipment was also a contributing factor to non-compliance. Although it is stipulated by the Gauteng Department of Health Annual Report (2016/2017:10), that Gauteng province was ranked highest at 59% (217/367) by the National Office of Health Standards Compliance based on the proportion of clinics that have achieved Ideal Clinic status; the study revealed that Diepsloot clinics do not comply with the stipulations of the Ideal Clinic in managing medical records. Non-compliance with the Ideal Clinic guidelines was confirmed through interviews as well as observations, as the researcher observed inadequate infrastructure, inadequate staff, compromised administrative processes and non-use of applicable clinical policies, protocols and guidelines.

4.2.3 Records management programme

A records management programme plays a vital role in the creation, maintenance and disposal of records in any institution. All the 45 interview participants indicated that there was no records management programme in place for all the PHCs. The participants, however, indicated that the facility managers brief them about how they should manage records during monthly meetings. Participant 1 indicated that the implementation of a records management programme requires strategic planning and a records management committee.

All governmental bodies that fall under the purview of the National Archives and Records Service Act (Act No. 43 of 1996) are mandated to implement a records management programme, in order to conform to the standards and codes of good practice in records management stipulated by the National Archivist. It is noted by Wong and Bradely (2009:256) that a well-planned medical records management programme is valuable in enhancing the accessibility and completeness of

patient information to support clinical practice. A records management programme enables the PHC to establish which functions should be involved in keeping the medical records, and also give a guideline on how these functions are going to be performed and the people involved in performing those functions.

4.2.4 Responsibility for medical records management

The participants pointed out that there are no qualified records managers employed by the PHCs. The clerks and data capturers are responsible for the management of medical records.

Interview results indicated that apart from the Mission statement, Ideal clinic and SOP guidelines, there are no detailed policies available to govern medical records. In any government institution, records management policies are of paramount importance because they set out the goals that need to be achieved, as well as give a guideline for records management (Roper & Miller 1999g). The National Archives and Records Service of South Africa emphasises that all government institutions should have a records management policy that regulates records management activities.

Records management regulatory framework must be communicated and implemented throughout the organisation. The ISO 15489-1 (2016) notes that a records management policy and procedures of an organisation should apply the regulatory environment to their business processes. ISO 15489-1 (2001:5) also stipulate that a records management policy should be adopted and endorsed at the highest level and promulgated throughout the organisation. The unavailability or non-compliance to available policies will lead to records to be managed in an ad hoc manner, as there will be no stipulations regarding creation, maintenance, retention and disposal guidelines. Hounsome (2001:2) also underscored that the lack of records management regulatory framework as the main cause of poor records management.

The District Health Management Information System (DHMIS) (2012:6) stipulates that the facility manager must co-ordinate team members to follow procedures and understand the standard operating procedures' objectives and other inter-related activities. The Facility Manager must ensure that team members must sign that they have read and understood these SOPs. According to the guidelines stipulated from The Ideal Clinic (2016:75), all clinical staff, including professional nurses and data capturers, must be trained and be conversant on the District Health Management Information System Policy and also be trained on the Facility Level Standard Operating guidelines for data management.

4.3. INFRASTRUCTURE FOR THE MANAGEMENT OF MEDICAL RECORDS

The second objective was to establish the state and availability of relevant records management infrastructure and facilities. Infrastructure and storage conditions are of paramount importance as they affect the life span of records and contribute to the deterioration of records. To determine the infrastructure for keeping medical records, the data collection tool used was observations. The observation technique was used to gain insight into the extent of challenges faced by the PHCs with respect to the buildings and equipment used for the management of medical records. The observations were also backed with the interviews as confirmation. The observation checklist included;

- Equipment used for storing medical records at Diepsloot PHC
- Storage place for medical records
- Storage space
- Environmental conditions for medical records

4.3.1. Medical records storage equipment

The observations, confirmed by the interview responses, revealed that there was no standard regulated equipment for the storage of medical records in the PHCs. Files were stored in file covers and boxes that are torn. The torn boxes were placed on the floor supported with planks and bricks. Some files are just stacked up in open cabinets. However, at the Diepsloot OR Tambo clinic HIV Comprehensive Care, Management and Treatment (CCMT) files were given first priority, as they are stored in a separate storage room in closed cabinets. The researcher observed that at the Diepsloot South clinic some CCMT patient files were stored in a cabinet in a floor area where patients sit and some files were stored in the records storeroom. However, Wong and Bradely (2009:257) stipulate that organising the files, clearly labelling the shelves and using recommended folders improve efficiency and reduce time to retrieve the medical records. The records must be stored in appropriate infrastructure in such a way that they cannot be altered and will be easily maintained for enduring value (Horsman 2001:14). District Health Management Information System (DHMIS) Standard Operating Procedures: Facility Level (2012:17) stipulates that, among other things, the facility manager must provide enough resources for routine medical records management, such as filing cabinets, files and an effective filing system.

4.3.2. Storage place of medical records

The medical practitioners removed records from their offices when there was no space available to store them. The clerks indicated that shortage of space was the greatest challenge hindering the effective management of medical records. The storerooms functioned more as a dumping ground for records. The storage areas were generally cleaned and cleaning was done daily. All the 45

participants noted that most of the medical records were hardly accessible, as most of the records are piled haphazardly on the floor.

4.3.4. Storage space

All forty-five participants noted that the storage space is very small, making it very difficult to retrieve files. The space allocated to medical records must accommodate the growth in the number of patients. The researcher also checked the condition of the records in the records storage rooms and found that most damages to the records were caused by mishandling, because records staff climbs on top of piles of files. Piles of files were caused by the shortage of storage space. The medical records were not in storage boxes, or in file cabinets, because there is no space for more cabinets, and this resulted in records being filed on the floor of the reception and the records storage rooms. According to ISO 15489-1 (2001), organisations must have records storage media that will enable to maintain the records' usability, reliability, authenticity and preservation for their entire life span. This was therefore not the case at Diepsloot PHC, which had inadequate infrastructure.

Figure 1.8 below, shows the stacking of medical records at Diepsloot OR Tambo PHC where files are stacked up to the ceiling. This is in contradiction with the stipulations of the Ideal Clinic Manual (2016:117) which states that the lowest shelf starts at least 150mm off the floor. Ideal Clinic Manual (2016:117) further stipulates that top of shelving must not less be than 320mm from the ceiling to allow airflow Aisle and shelves labelled correctly according to SOP. The teacups and spoons captured in figure 1.8, gives evidence that the records staff eat and drink in records storage rooms. Eating and drinking in storage rooms has a risk of spillage, which can damage records.

Figure 1.8: File condition

4.3.5. Environmental conditions for medical records

Observations on the physical and environmental conditions revealed the following environmental conditions;

- the temperatures in records storerooms were not controlled,
- fire extinguishers were not in place,
- no adequate light exposure,
- no ventilation,
- pests, rodents and insect control measures are in place,
- eating and drinking by staff,
- no dust,
- no water leakages.

Temperature, light and relative humidity in records storage areas are of paramount importance in the preservation records of because inappropriate temperature and humidity contribute to the deterioration of files due to oxidation. Pest control measures are in place for all the PHCs. Government outsourced a company that is responsible for fumigating the building and the participants indicated that they have never seen any rodents. Although eating and smoking are not allowed in PHCs, during the observation period, administrators were seen eating and drinking in the

records storerooms. Eating and drinking in records rooms can result in infestations by insects, rodents, and other pests as well as damage of files by spillages, (Roper & Miller 1999g).

Organisations must have disaster preparedness plans in order to minimise the risk to both human resources and medical records. This can be achieved through the installation of facilities, like burglar-proofing, smoke detectors and water detectors. Architectural design also plays a vital role in disaster preparedness. Portable fire extinguishers to complement automatic fire suppression systems were recommended by experts. It is noted by Ngulube (2003:301) noted that however, archivists and records managers should be familiar with the brand names of fire suppression and detection systems used in their repositories.

The study found out that the volume of records and the small storage area lead to difficulties in retrieving files, which eventually led to patients waiting for long hours for health service. Mixing of current and non-current files of transferred patients on the shelves increases the chances file wear and tear due to congestion. As noted by Black (2005), the equipment used to store records must prevent unauthorised access, meet fire safety standards and regulations and allow maximum access to the information.

The current record storage conditions in Diepsloot PHCs is not in compliance with ISO 15489-1 (2001:18), which notes that appropriate storage equipment should ensure that records were protected, accessible and managed in a cost-effective manner. Marutha (2011:172) and Pyrene (2015:96) recommended the use of the electronic records management system in their findings. The literature reviewed from Kemoni, Ngulube& Stilwell (2007) states that the storage of records should follow all the storage systems, processes, facilities and devices used in the storage of records.

According to Ideal Clinic Definitions, Components and Checklists (2018:4) "an Ideal Clinic is a clinic with good infrastructure, adequate staff, adequate medicine and supplies, good administrative processes, that use applicable clinical policies, protocols and guidelines to ensure the provision of quality health services to the community". Poor and inadequate records infrastructure leads to difficulties in the implementation of medical records management policy requirements.

4.4. SECURITY OF MEDICAL RECORDS

Research question four was intended to determine the methods used for the security of medical records in the PHCs of Diepsloot. It was of vital importance to establish the extent of security

regarding medical records because medical records are confidential and should be accessed by authorised personnel only. It is in line Green and Bowie (2011: 272), that any information communicated by a patient to a health care provider is regarded as a privileged communication, which means it is confidential. To determine the security of medical records, the questions asked included;

- Physical security for medical records
- Technological security for medical records
- Human security for medical records
- Missing medical records
- Movement of patient folders
- Tracking system for medical records

4.4.1. Physical security for medical records

There are security guards to monitor the PHCs. Windows have burglar bars. Only the management staff has keys to the data capturing rooms and records storage rooms. 42 (93%) of the staff were aware of their obligation to comply with patients right to privacy and access conditions when using the information contained in medical records. It is, however, noted by Green and Gowie (2011:271) that security safeguards must be implemented to ensure that facilities, equipment, and patient information are safe from damage, loss, tampering, theft, or unauthorised access.

4.4.2. Technological security for medical records

All the 45 participants indicated that CCMT patients have paper files but, their details are also captured in an electronic record. The electronic records are updated by data capturers, as soon as the patients have been seen by the nurse or doctor. A question was further asked to determine computer security measures. To secure the computers, all participants noted that data capturers have passwords and one needs a registered username and a password in order to access the system. Data capturing rooms are only open to authorised staff and they are locked after working hours.

4.4.3. Human security for medical records

Out of all the participants, 44 noted that only authorised personnel were allowed access to medical records. All 45 participants, both medical and administrative staff indicated that before commencement of employment, they signed a confidentiality agreement. The signing of a confidentialit agreement is in line with Medical Protection Society (MPS) (2014:26), which stipulates that confidentiality is an ethical and legal obligation any person employed in the health sector, is bound by a confidentiality clause in their contracts.

Medical Protection Society (MPS) (2014:26) stipulates that the obligation of confidentiality goes beyond undertaking an oath not to divulge confidential information but, involves the responsibility to make sure that all medical records are kept securely and are not left where other people may have casual access to information about patients. It was a different case with the PHCs, as 35 of the participants indicated that the records rooms were left unlocked during working hours and only 10 indicated that they lock the records rooms. A follow-up question was asked to gain more insight as to why the records storage rooms were not locked and the participants indicated that there are signs on the doors that states that only authorised staff are allowed. It is always of paramount importance to lock the records rooms to avoid unauthorised access.

Participants 21 and 9 pointed out that the contents of medical records should only be accessible to authorised staff. This is in conformity with Section 17 of the National Health Act (Act No. 61 of 2003), which stipulates that a person working with the health institution's medical records must put in place effective security measures to ensure access control and prevent unauthorised access to medical records. All the 45 participants indicated that, as another human security measure, the PHCs have burglar bars and a 24-hour armed security company which guards the premises to prevent unauthorised entry. The security guards also check if all the entrances are locked, especially at night. The study revealed that EWP workers are employed by the PHCs and they rotate departments. Lack of permanent records management staff means that there is a lack of accountability which in turn compromises the security of records, leading to their loss,

The two facility managers were asked a question of security, as far as the third-party users of medical records were concerned. The third-party users among others include researchers, the legal fraternity and insurance companies. Both facility managers indicated that third parties must apply to the district head office situated in Johannesburg CBD for permission to access the PHC premises. The District head office will make the third parties sign an agreement to abide by the health ethics of confidentiality and security. The interviewer in her capacity as a researcher was also instructed by the PHC management to make an application to the district head office to gain access to PHC records to prevent disclosure of sensitive information. The application to conduct a research and access PHC records is attached in appendix 3.

4.4.4. Missing medical records

The interview participants indicated that missing medical records were caused by shortage of filing equipment, misfiling, shortage of filing space, frequent records demand, shortage of records staff, incompetent records staff and insufficient budget. It is crystal clear from the responses that the PHCs are faced with a challenge of missing files. Missing files may hinder timeous and effective service delivery to the patients. Marutha (2011:178) also attest that lack of education and training are the major contributing factors to missing files, especially if records management is not an interesting career for the officials.

All the interview participants were asked about the procedure followed when a medical record is not located. Only participant 2 pointed out that they search for the record until they found it. Participants confirmed that temporary medical records are created, in the event the original cannot be retrieved when it is required. The participants also clarified that temporary files are created to keep the PHC functioning. Rather than sending patients back home, temporary files are created and then eventually merged with the original record once it has been found. If the original file is not found, the implication is that the patient will have two or more files. The duplication of files for the same patient can result in compromised health care due to lack of patient's complete medical history. The study by Luthuli (2017: 128) also revealed that a new file is created in the Umhlathuze hospital when an old one is not found and revealed that the creation of the new file is time-consuming is and a waste of stationery.

4.4.5 Movement of medical records

All interview participants indicated that a new file is created at the reception. The file is then taken to the medical practitioners, who will then record the diagnosis and prescription. From the medical practitioners, the film moves back to the clerks and receptionists for filing. The same process is followed for an existing file, which is retrieved by clerks and used by medical practitioners then sent back for filing.

4.4.6 Tracking system for medical records

The purpose of this section was to establish if the PHCs document the movements of medical records, so that they know where their records are at any given time. A record tracking system is also used to ensure that a medical record is being used by an authorised person. To establish the records tracking system, participants reported that the tracking system used is manual registers. Earlier studies, such as Luthuli (2017) Pyrene (2015), Marutha (2011) and Katuu (2015), all concur that the flow of file tracking was not good in most public hospitals in South Africa and also suggested that electronic systems be implemented.

4.5. STAFF SKILLS AND COMPETENCE

On objective four, the researcher sought to establish the level of staff capacity, skills and training in records management at PHC level. Records managers need to be equipped with the necessary skills to perform their duties. The skills and competences are fundamental to the overall management of records. The questions asked included:

- Formal records management training.
- Competency levels in records management.
- In-house training for records management.
- Scope of records management training.

4.5.1. Formal records management training

In this interview question, the researcher aimed at establishing the level and need for staff skills and training in records management at the PHC level. The formal records management training of participants shows that one of the participants had received advanced training in records management, one had an intermediate training, 11 had received basic training and 32 had not received any records management training. Figure 1.9 illustrates the participants' level of training.

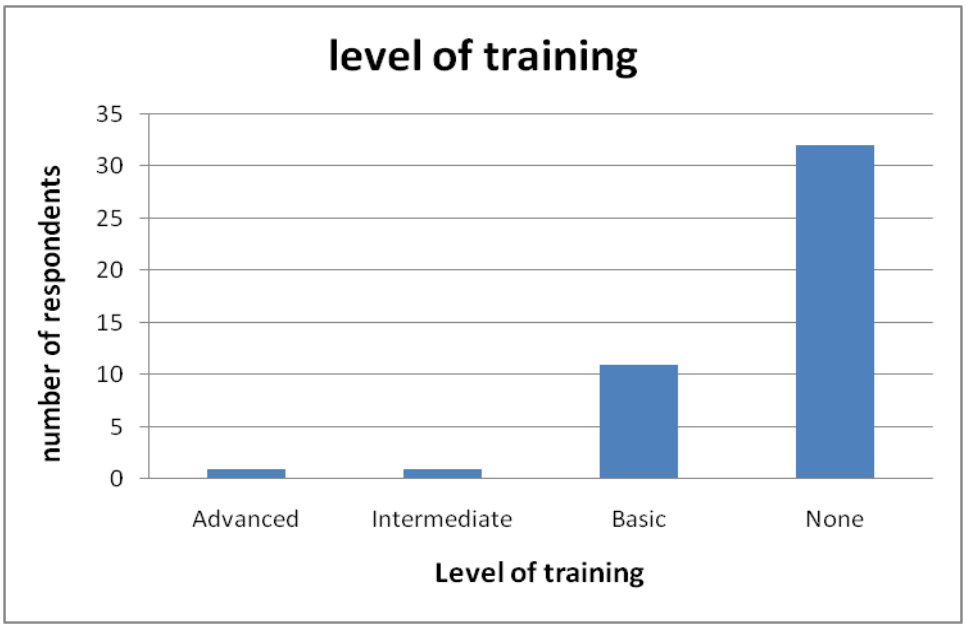

Figure 1.9: Formal records management training

4.5.2 Competency levels in records management

Interview questions in this section were aimed at ascertaining if participants have the necessary skills and are competent in managing medical records. The researcher aimed at determining if participants were aware of the records management processes, like the records life cycle, the records continuum, preservation, disposition and records appraisal. With the exception of the two facility managers, the participants indicated that they were not well versed with such records management processes.

4.5.3. In-house training for records management

The interview results revealed that the PHC employees permanently employed by the Department of Health have been trained in clinical statutory and SOP. It was evident from the interview responses that contract workers employed by EWP did not receive any formal training in records management from the department of health. Thirty-five (35) participants indicated that the EWP general workers received induction training from the facilities on how to register patients and how to do filing. District Health Management Information System (DHMIS) Standard Operating Procedures: Facility Level (2012:12) stipulates that the facility manager must ensure that all new staff are oriented on health information management system in the facility and also ensure training on data elements and data quality for all staff responsible for records management.

The study established that the people who are employed to manage medical records in both PHCs, their best qualification was an administration certificate. The interview results show that the EWP people who are employed by the PHC to manage records were not trained in records management. The study revealed that the skills were gained only through experience. Mnjama and Wamukoya (2006) note that people who have the responsibility of managing records needs to be qualified in records management, in order to be able to perform efficiently. Records managers needs to understand their role in the management of medical records in order for them to deliver good service.

Research was done in South Africa in the secondary health sector also showed that medical records were managed by unskilled personnel (Khoza (2011), Marutha (2011), Katuu (2015), Pereyne (2015), Luthuli (2017) and Tsabedze (2011)). Marutha (2011:179) found that lack of records management training contributes to file loss in most hospitals. It was also noted by the World Health Organisation (W.H.O) (2010) that management of medical records requires knowledge of medical record management as well as management skills by trained personnel. Apart from relevant

records management credentials, the medical records personnel must be able to uphold to ethical practices, value their reputation and maintain standards of service and quality.

4. 6. FILING MEDICAL RECORDS

The purpose of this section was to establish if the Diepsloot PHC had an approved record-filing system and whether the records are managed according to the approved system. Accessible and properly filed medical records are key to the efficient administration of any PHC.

4.6.1. Medical records filing system

Participants were asked if their records were arranged according to a classification scheme. Forty-five responded that the medical records were classified and filed using an alpha-numeric system. At Diepsloot OR Tambo clinic the first three letters of the filing system are ORT, for OR Tambo then the six numbers for the patient's date of birth and lastly the first three letters of the patient's surname, for example, a patient file would be filed as ORT 841204 NGW. At Diepsloot south clinic, its DSC (Diepsloot South Clinic) followed by the patient's date of birth and lastly the first three letters of the surname example a patient file will be filed as, DSC 841204 NGW. File numbers are written on top of file covers and are also written on the patient's visiting card to enable easy retrieval when the patient revisits the PHC.

However, participants 34, 36, and 41 of the medical staff mentioned that they were never trained on how to use the classification scheme, and those who were using it were not using it properly. A follow-up observation was made, and the researcher observed that some files were labelled incompletely, for instance, 841204 instead of ORT 841204 NGW. From the interview responses, it can be said that alphanumeric classification of records was the most adopted in the primary Health Care Centres of Diepsloot. However, medical records were classified according to an alphanumeric system but, were stored randomly not following the system.

Section 13(2) (b) (i) of the National Archives and Records Services Act, states that the National Archivist determines the records classification systems applied by governmental bodies. Classification enables easy access to records. Roper & Miller (1999e: 47) states that there is a need to have clear procedures for establishing whether, or not, a file exists for each patient and to retrieve the file where it exists.

Observations for the filing system revealed that Diepsloot PHCs did not follow the convention of a standardised format. Some files did not have complete reference numbers and file titles. Unmethodical filing system causes delays in file retrieval leading to loss of files and poor service delivery. WHO (2006) notes that:

"Each institution must have a Master Patient Index (MPI); it is an index that includes all the patients that have visited the institution. The MPI should contain identifying and demographic information to be able to identify a patient's medical record. This index would include the patient's full name, institution unique number, and address, date of birth, age and national identification number."

Complete medical record keeping is an integral component in good professional practice and the delivery of quality healthcare. Good medical record-keeping practices should enable retrieval, continuity of care and enhance communication between different healthcare professionals. According to the paper presented by Mbatha (nd:3) titled "The Gauteng Province: state of records", it is stipulated that all records created by governmental bodies must be classified, arranged, and described in line with records classification systems determined by the Provincial Archives and Records services.

According to ISO 15489-1 (2001:13), a classification is a powerful tool which helps capture records in a system, thus allowing appropriate linking of records, ensuring consistency, retrieval, security and protection of records. The DHMIS (2012:7) stipulates that for monitoring and optimising data quality, facilities should ensure standardised activation of relevant data elements of each health care facility to optimise patient care. It is recommended by Wong and Bradely (2009: 158), that a computerised master patient index, standardisation of medical record handling and standardised filing procedures should be in place.

4.7. MEDICAL RECORDS MANAGEMENT IN SUPPORT OF PHC SERVICES

4.7.1. Medical records management challenges at Diepsloot PHC

The responses from the interviews revealed several challenges that were being experienced at the PHCs. The emerged themes on the challenges of medical records management were presented and interpreted within the context of the research study. Of all the participants, 30 responses noted that misfiling was the main cause for the delays in records retrieval, 15 stated missing files, 33 stated shortage of equipment, 34 lack of medical records staff and 13 stated incompetent officials coming

from EWP program. Table 1.6 illustrates the themes that emerged regarding the causes of records management challenges in PHCs.

Table 1.5: causes of medical records management challenges

# Themes	Frequency of participants mentioning the Theme
Misfiling	30
Missing files	15
Shortage of infrastructure	33
Shortage of records staff	34
Staff incompetence	13

Theme 1: Misfiling

Respondent 34 noted that *when medical records are misfiled, we end up taking more time to retrieve the file as we have to go through all the shelves in the clinic in order to get the file.* Respondents were further asked to determine the reason for misfiling. Respondent 17 noted that *the reason why I misfile some medical records is that the files are not properly labelled and some file numbers are incomplete.* Another cause of misfiling as stipulated by respondent 2 was the lack of knowledge of the existing filing scheme and the inability to interpret the filing scheme codes which resulted in misfiling.

Theme 2: Missing files

Respondent 22 noted that *missing files cause serious challenges of having to duplicate a patient file.* Respondent 34 indicated that *a patient ends up having many files even up to four files because it is faster to open a new file than spending many hours looking for a missing file.* According to respondents 13 and 12, duplication as a result of missing files for the same patient resulted in a lack of continuity in medical procedures, due to absence of the patient's complete medical history.

Theme 3: Shortage of infrastructure

Respondent 6 noted that *there are no file covers, no clips so files are falling off.* Respondent 1, 4, 6 and 7 noted the physical space was too small to cater for the fast-growing volumes of medical records. The challenges of infrastructure impact negatively on the preservation of records and archival institutions as noted by Bhebhe, Masuku and Ngulube (2013:48). The observations also revealed that large quantities of paper-based records generated by the PHC resulted in the increased

volumes causing difficulties in retrieving information and were also exacerbated by shortage of medical storage rooms.

Theme 4: Shortage of records Staff

Respondent 34 who happened to be an admin clerk noted that *look today I am alone at the reception and I have to create files and at the same time retrieve files for existing patients and when the patients are done with the nurses I have to file back the patient files. It is hard work so I end up piling the files on the floor.* It was observed that shortage of staff contributed to low staff morale and a compromised service.

Theme 5: Staff incompetence

Respondent 15 noted that *the EWP program just employs matriculants who know nothing about records management.* Respondents 10, 11 and 16 noted that lack of professional records managers in the PHC of Diepsloot causes medical records not to be managed in a professional manner, as per the guidelines of the National Archives of South Africa.

The PHC records management challenges presented in the Diepsloot PHC were similar to those found in the PHCs in the study conducted by Katuu (2015:280-282) who found out that the PHC challenges were;

- inadequate staffing for the records management function,
- poor implementation of technology to improve records management and rudimentary records management processes,
- Lack of records management training,
- the lack of infrastructure and the lack of technology skills,
- Patient records consisted of pieces of papers kept in boxes while in other clinics there were no files or boxes, just pieces of papers.

4.7.2. Patient waiting time for records retrieval

The researcher also established the average time taken to retrieve medical records. Out of all the participants, 10 indicated that the waiting time was between 1 to 30 minutes, 8 indicated that the waiting time was one hour, 25 stated that the waiting time was one hour 15 minutes, two participants said there was no record retrieval waiting time. From the above interview results, more participants took a long time to retrieve patient files. A follow-up question was asked to gain more insight as to why participants took longer time to retrieve medical records. Participants indicated

that reason for slow medical records retrieval was missing files, misfiling, and shortage of records staff, untrained records staff and incorrect labelling. The overall medical retrieval time affected the PHC service delivery.

4.7.3. Other relevant solutions to records management challenges

In light of the problems mentioned in 4.7.1, participants were also requested to suggest possible solutions to records management problems experienced in PHCs. All forty-five participants identified moving to electronic records management, 24 identified providing sufficient budgets to be allocated to records management, 34 identified staff training, four identified employing permanent staff, 23 mentioned more storage equipment, and 36 identified bigger storage space. Table 1.7 illustrates the emerged themes on the suggested solutions to medical records challenges and the number of participants who mentioned the theme.

Table 1.6: suggested records management solutions

# Themes	Number of participants who mentioned the theme
Electronic records management	45
Sufficient budget	24
Staff training	34
Employing permanent staff	4
Sufficient infrastructure	23
Bigger storage space	36

Theme 1: Electronic records management

Moving to electronic records management theme emerged as an enabler and solution to PHC records management challenges. Respondent 34 noted that *if only we were using computers in this clinic were going to be fast in providing services.* Respondent 19 and 17 noted that a fully-fledged

electronic records management system will enable multiple accesses to medical records by authorised personnel. When properly implemented, electronic medical records management is an important component of the PHC health care delivery system as it provides an indispensable informational integration amongst all sectors of the PHCs in terms of the referral of patients, supervision, and patient management. Kleynhans (2011:21) stipulated that "an electronic medical record is more than a database because it offers many functions, such as an integrated view of patient data, clinical decision support, clinician order entry, integrated communications support, and access to knowledge resources."

Theme 2: Sufficient budget

Participant 2 noted that *the clinic needs to be allocated sufficient budget to enable the clinic to buy all the equipment needed for the smooth running of the clinic.* Pyrene (2015:103) noted that medical records are the foundation to quality and efficiency of patient care in the medical sector, as they contain a complete and accurate chronology of treatments and future plans for care. From the postulation of Pyrene (2015), it can be said that medical records are a vital asset to the health sector and the records management department should be given sufficient budget in order to run efficiently.

Theme 3: Staff training

Respondent 43 noted that *some of us ever since we started working in this clinic we have never received any training, or have we been sent to any workshop and at the end of the day they blame us for not doing our work well, thus we need training in order to be competent.* As discussed in section 4.5 of this chapter, it is of paramount importance to have qualified and experienced records managers in order to deliver efficient and professional service, which is in line with the government Batho-Pele principles.

Theme 4: Employing permanent staff

Respondent 10 noted that *these EWP workers who come and go and are not permanently employed by the clinic mix up files then leave or are shifted to another department; we need the department to employ more permanent staff.*

Theme 5: Sufficient infrastructure

The need for sufficient infrastructure was noted from the extracts below;

Respondent 37 noted that *we have no choice but to put the files on the floor.* Respondent 29 noted that *these storage rooms are very small, and we end up mixing patient files because there is nowhere where we can put them, we need more infrastructure.* The need for a regulated and sufficient infrastructure in health care facilities was recommended in the studies conducted by Marutha (2011), Tsabedze (2012), Pyrene (2015), Ngidi (2015), Katuu (2015), Marutha (2016) and Luthuli (2017).

Theme 6: Bigger storage space

Respondents 23 noted that *there is no working space to retrieve files and we end up climbing on top of files to retrieve files which are on top, these records storage rooms need to be purpose-built with more space.* In terms of the National Health Act (Act 61 of 2003), the National Department of Health (NDoH) is required to facilitate and coordinate the establishment, implementation and maintenance of health information systems at all levels.

4. 8.CHAPTER SUMMARY

This chapter focused on the presentation, analysis and interpretation of the qualitative data. Important information emerged from the analysis of the interview and observation data, which assisted the researcher to summarise the findings and give the reader a reflection of the meaning of the data collected. Data obtained from interviews was crosschecked with the information obtained from observations.

The data showed that the Diepsloot PHC has numerous records management setbacks at both policy and operational level and that there is no proper records management programme in place to guide the medical records management in PHCs. The poor service delivery is to a certain extent attributed to poor records management practices in PHCs due to lack of staff training, poorly maintained infrastructure and poor filing. 42 participants revealed that key records management policies were not implemented or communicated, resulting in the SOP and the ideal clinic used as the guidelines. The study also revealed that the PHCs lack qualified and competent records management personnel to manage the medical records. Shortage of filing equipment and space was also amongst the setbacks hindering proper medical records management. Inconsistent filing system led to missing files and poor service delivery.

Findings from this study were consistent with the findings of several related studies, such as Khoza (2008), Marutha (2011), Tsabedze (2011), Katuu (2015), Pryne (2015), Marutha (2016) and Luthuli

(2017). Findings from other researchers researching on the secondary health sector specifically from South Africa were used to substantiate some of the findings and to give a comparison between records management at hospitals and clinics.

The themes that emerged from the structured interviews also relate directly to the conceptual framework of this study and these were used to consolidate the concluding arguments of this study in the following chapter. The researcher concurred with the Ideal Clinic Definitions, Components and Checklists (2018:4), which states that an ideal clinic is a clinic with good infrastructure adequate staff, adequate medicine and supplies, good administrative processes and sufficient bulk supplies, that uses applicable clinical policies, protocols, to ensure the provision of quality health services to the community. In some cases, results were presented using graphs, tables and charts. In view of the above discussion, the results of the study are summarised as follows:

- There are no records management specialists in Diepsloot PHCs.
- There is a shortage of space, leading to records being placed on floors.
- There are no records managers, leading to the employees not being aware of how to take care of different types of medical records
- There is a shortage of basic equipment like files, cabinets, clips and boxes.
- Records management regulatory instruments are not communicated to records management staff.
- The existing records management staff are not well trained and experienced in records management.
- Shortage of staff.

Chapter 5 gives the summary, discussion and conclusion of the study. The chapter will also give recommendations for an improved records management system and further research.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

The empirical results of the study were presented, analysed and interpreted in detail in the previous chapter to answer the stated research questions. This chapter presents and highlights the summary and conclusion of the research, in relation to the research objectives and how they have been addressed by the study, and thereafter gives the recommendations of the study. According to Vosloo (2013: 601), the aim of the summary of the study is to provide an overview of the study and to specify the line and sequence of reasoning of the research. The research conclusions were formulated from the foundations of content analysis, objectives of the study, as well as the findings of the study.

Based on the conclusion of the research findings, the researcher formulated several recommendations and possible areas for further study. The conclusion and recommendations were formulated in line with Williamson (2000:300), who postulated that conclusions and recommendations should be related to findings of the study and should avoid unwarranted conclusions and generalisations in order to answer the research questions. In a nutshell, the intention of this chapter was to:

- Summarise and integrate the literature reviewed and the findings of the empirical study;
- Draw conclusions of the findings reported in chapter 4, in order to indicate whether the problem statement has been responded to or not; and
- Present recommendations based on the research findings and literature review.

The rationale behind the purpose of this study was to determine the management of medical records in support of PHC services of Diepsloot in the Gauteng Province of South Africa. The Diepsloot clinics are mainly the OR Tambo and Diepsloot South Clinic. The findings emanated from the objectives of the study and the literature review which provided a conceptual and theoretical context for the study. The nature of the study, which is the management of medical records, required the researcher to carefully craft a qualitative research approach. The study was conducted using observations, face-to-face interviews and focus group interviews with health professionals and medical records officers. The collected data were analysed through content analysis, presented

and interpreted in the previous chapter. The summary, conclusions and recommendations of the study were in line with the objectives of the study, as stated in chapter one.

5.2 SUMMARY OF THE LITERATURE REVIEW

Before presenting the summary, conclusion and recommendations from the empirical study, this section provides a summary of the findings from the literature review. The rationale for presenting the summary of the literature is that the review of literature placed the research study within the conceptual and theoretical context of the general body of scientific knowledge (Punch 2005) Literature reviewed from several scholars like Medical Protection Society (MPS) 2014:26), Chamisa and Zulu (2007:94), Mann and Williams (2003:329), Green and Bowie (2011:70), Marutha(2011), Marutha (2016), Katuu and Van Der Walt (2016), Bokwe (2016:14) and Practitioners Council of South Africa (HPCSA) (2008) identified common emphasis on the importance of medical records. The literature reviewed from Medical Protection Society (MPS) (2014:26) generally revealed that keeping good medical records is essential for continuity of care and it is an integral part of good professional practice. The review of literature for this study reveals that medical records underpin PHC facility's operations, as effective healthcare to patients depends on the availability of accessible medical records.

5.2.1. Literature review summary on the medical records legal and regulatory requirements

The literature reviewed from scholars, like Green and Bowie (2011:270) highlighted that the medical record is a legal business record that must be maintained according to accreditation standards, legal principle, professional practice standards and regulations. ISO 15489-1(2001:6) notes that "organisations should establish, document, maintain and promulgate policies, procedures and practices for records management to ensure that its business need for evidence, accountability and information about its activities is met". Katuu and Van Der Walt (2016:1) postulate that any improvement in the management of records must be done in full cognisance that records are generated in an organisational setting and based on a national legislative and regulatory framework. Literature reviewed revealed that the management of PHC medical records operates in conjunction with pieces of legislation discussed in detail in chapter two, like the Constitution of the Republic of South Africa, 1996, the National Health Act 2003 (Act No. 61 of 2003) , the National Archives and Records Service of South Africa Act (Act. No. 43 of 1996 as Amended), the Promotion of Administrative Justice Act (Act No. 3 of 2000) (PAJA) and the Promotion of Access to Information Act (Act No. 2 of 2000) (PAIA). The literature discussed in section 4.2.1 of the study revealed that the PHCs are also guided by the Ideal Clinic document and the Standard Operating Procedures (SOP).

5.2.2. Literature review summary on the infrastructure for medical records

With regards to the medical records infrastructure, literature reviewed from ISO/TR 15489-2 (2001:18) revealed that appropriate storage conditions ensure that records are protected, accessible and managed in a cost-effective manner and the purpose served by the record, its physical form and its use and value will dictate the nature of the storage facility and services required to manage the record for as long as it is needed. According to Tsabedze (2012:14), in order to ensure proper maintenance of records, all the information regarding the records storage and retrieval must be gathered and proper strategies implemented before the records are created. The organisation must use the records storage media that will maintain the records' usability, reliability, authenticity and preservation for their entire life span (ISO 15489-1 2016:4-5). Horsman (2001:14) noted that records must be stored in an appropriate storage medium in such a way that it may not be altered and will be easy to maintain for permanent authenticity and reliability. In a nutshell, the reviewed literature advocated for appropriate environmental conditions and relevant medical records storage infrastructure.

5.2.3. Literature review summary on the security of medical records

According to literature reviewed from Coppieters and Levêque (2013), information security is the set of management measures that safeguard the confidentiality, integrity and availability of all forms of information, in order to ensure continuity of information and keeping the possible consequences of information security incidents within an acceptable predefined level. MPS (2014:14) stipulates that confidential records should not be left where unauthorised people may have access to them. Information about patients should be sent under private and confidential cover, with appropriate measures to ensure that it does not go astray. ISO 27002 (2005:24) states that as part of their contractual obligation, employees, contractors and third-party users should agree to, and sign the terms and conditions of their employment contract, which should state their and the organisation's responsibilities for information security. To encapsulate the literature reviewed, reasonable technical and organisational measures should be in place to ensure the integrity and confidentiality of medical records. Prevention of loss, damage or unauthorised access to personal information is of paramount importance in the management of medical records.

5.2.4. Literature review summary on the medical records staff skills and competences

To be able to make sound judgement on the skills and competencies required for medical records management personnel, reasonable literature was reviewed. The literature reviewed from ISO 15489-2 (2001:23) states that organisations need to employ personnel who have professional qualifications in records management or archives, to manage their records programme and to undertake highly technical processes such as classification, preparing disposition authorities and

system design. IRMT (2000:35) notes that records work must be viewed as a worthwhile career, not as the posting of last resort for those who are unqualified, incompetent, or idle. Records need to be managed according to professional standards and practices to ensure efficient and effective service. The volume of literature reviewed revealed that people responsible for managing medical records must be able to create and maintain records, design systems, classify, index and file records, have knowledge of information retrieval systems, appraise and dispose of records, archive and preserve records.

5.2.5. Literature review summary on the filing of medical records

The fundamental objective of this section was to discuss literature related to medical records coding, indexing, classification, and file storage systems with the intention to gain contextual information about the appropriateness of file movement, tracking, security and retrieval in Diepsloot clinics. Green and Bowie (2011:206) note that a well-organised numbering and filing system is essential to the effective storage and retrieval of patient records. Edwards (2008:2) stipulates that the medical record should be compiled chronologically and should contain enough data to identify the patient, support the diagnosis or the reason for the treatment, justify the treatment and accurately document the result. In summary, if medical records are classified, named or labelled in a consistent manner, it will enable easy retrieval. Review of literature also revealed that a proper filing system ensures that records are available when needed. The classification of medical records can be alphabetic, chronological, numeric and hierarchical.

5.3 SUMMARY OF THE RESEARCH FINDINGS

The aim of this study was to investigate how medical records management support primary health care services of Diepsloot in the Gauteng Province of South Africa, with an intention to propose improvement strategies**.** With respect to this aim, a significant amount of information was obtained from observations and interviews with45 participants. The summary of the research findings was presented, according to Babbie (2004:490), who states a research the summary must be more focused on the noteworthy points, rather than on providing every specific finding. Based on the data collected and the analyses made in this study, the major findings of the study are summarised and presented under each respective research objective of this study as follows:

5.3.1. Summary on the legal and regulatory requirements in Diepsloot PHCs

The study sought to find out the availability of, as well as the compliance with, legal and regulatory requirements in accordance with service delivery. The study found that the regulatory framework

used by the PHCs was meagre. Although the Diepsloot PHCs has limited guidance on records management guidelines, using the Ideal Clinic and Standard Operating Procedures (SOP), there was no detailed guidance on the policies needed to manage medical records. Most PHC staff was not conversant with the key pieces of legislation such as the Constitution of the Republic of South Africa, 1996,the National Health Act 2003 (Act No. 61 of 2003), the National Archives and Records Service of South Africa Act (Act. No. 43 of 1996 as Amended), the Promotion of Administrative Justice Act (Act No. 3 of 2000) (PAJA), the Promotion of Access to Information Act (Act No. 2 of 2000) (PAIA) and Protection of Information Act (Act No. 84 of 1982).

The study established that the PHC compliance with the relevant legal and regulatory requirements for the management of medical records was very low. The policies and regulations are not appropriately communicated to staff for awareness as well as the importance of complying with and implementation such policies and regulations. It is in that regard that lack of policies on how records should be managed implies that there is no consistency in the way things are done and this might have negative effects.

5.3.2. Summary on the infrastructure for medical records in Diepsloot PHCs

With regards to the infrastructure for medical records, the findings are summarised as follows;

- The records were stored mostly in paper format.
- The major challenge facing Diepsloot PHCs is the shortage of storage infrastructure including folders, filing cabinets and filing boxes.
- Lack of storage space led to medical records to be filed up to the ceiling and some records on the floor.
- Lack of infrastructure, like storage files, contributed to missing of important documents inside the file, which in turn led to the loss of patient history.
- Lack of appropriate records storage infrastructure caused a delay in medical records retrieval and the overall service delivery as files to end up being mixed up.
- The environmental conditions such as humidity, temperature, dust, fire and light inside the records storage rooms were not controlled. Uncontrolled environmental conditions made the medical records to deteriorate fast due to wear and tear.

5.3.3. Summary on the security of medical records in Diepsloot PHCs

Medical records in both PHCs were without any doubt containing confidential information with the restricted right of access to authorised staff. The study found out that although some measures are

in place to ensure the security of medical records and their confidential information, the measures were not adequate and needed to be improved. The results of the study indicated that the PHC keeps all medical records in secured, safe and lockable records storage rooms, however, the staff leave the storage rooms unlocked. The study findings also established that the PHC controls the movement of medical records by registering the movement of files, which is also used as a tracking system to ensure that medical records are properly accounted for.

5.3.4. Summary on the staff skills and competences in Diepsloot PHCs

The results of the study provide compelling evidence that those appointed to the position of records management officers were not fully trained in records management and were not prepared to professionally handle all the records management problems faced by the PHCs. The level of education for the PHCs staff responsible for the management of medical records was found to be mostly dominated by those with certificates and diplomas, which are not in any way in line or related to records management. The staff was not competent in records management processes and procedures, like records creation, preservation, classification, appraisal, retention and disposal. Nurses and doctors had diplomas and degrees in the medical field only.

5.3.5. Summary on the filing of medical records in Diepsloot PHCs

The classification system used by the PHCs of Diepsloot is alpha-numeric. The classification system consisted of the three letters of the clinic, then the patient date of birth and lastly the first three letters of the patient's surname, for instance, ORT 841204 NGW. The study found out that there was lack of consistency in following the stipulated filing system, which led to delays in medical records retrieval. Some files did not have file titles, which also led to mixing up of files. The main cause for misfiling and inconsistency was the lack of training of the CWP staff, which were employed to manage the medical records.

5.4. CONCLUSION

The study achieved its objective of investigating the management of medical records in support of PHC services of Diepsloot. The findings on the management of medical records in the PHC centres of Diepsloot were very similar to findings from various other studies on the secondary health sector, as highlighted in the previous chapter. The findings in this study evidently demonstrate the significance of establishing proper records management practices in PHC centres. From the summary of the findings, the following conclusions on the management of medical records were made:

5.4.1. Conclusion on the legal and regulatory requirements

The study investigated the legal and regulatory framework governing the Diepsloot PHC and the level of compliance to standard operating procedures and policies used in medical records management. It is of paramount importance that medical records are effectively managed in accordance with appropriate policies and procedures to provide consistent and robust governance for records. The following conclusions were made in relation to research objective one, which sought to assess whether the medical records management policies and procedures support the management of medical records at Diepsloot clinics.

- The Diepsloot PHC is guided by the Ideal Clinic and the Standard Operating Procedure regulations.
- With regards to the level of compliance to the set legal and regulatory requirements, the study concludes that the PHCs do not comply with all the legislative and regulatory requirements pertaining to medical records keeping.
- Without the support of the Provincial Archivists, the attempts to implement a records management programme are destined to failure. Disinterest by the Provincial Archivist to actively engage with the PHC in the execution and adherence of records management functions led to poor record-keeping practices.
- EWP workers are not aware of the policies and procedures that govern the creation, use and maintenance of medical records at the PHCs.

5.4.2. Conclusion on the infrastructure for the management of medical records

The following conclusions were made, in relation to research objective two, which sought to examine the state of medical records management infrastructure for medical recordkeeping at Diepsloot clinics:

- There is no adequate infrastructure for the management of medical records at the PHCs of Diepsloot, which causes non-compliance to the Ideal Clinic regulations.
- Medical records are created on a daily basis resulting in the increase of volumes of medical records stored on boxes and floor, which in future could be a hindrance to effective healthcare service delivery.
- In densely packed shelves, the paper files get easily damaged during retrieval.
- Torn files contribute to the loss of documents inside the file, which makes the medical records to be incomplete, unreliable, imprecise and unauthentic.
- Uncontrolled environmental conditions in records storage rooms increase the rate of records deterioration.

5.4.3. Conclusion on the security of medical records

Objective 3 sought to establish security measures relating to the management of medical records at the Diepsloot clinics. Given the findings regarding the security of medical records at Diepsloot PHCs, it is logical to conclude that the PHCs are not taking adequate measures to ensure the security of medical records. Records stored in the floor and in the patient waiting area put medical records at risk of unauthorised access.

5.4.4. Conclusion on the staff skills and competences

Regarding the staff skills and competences, the level of expertise in dealing with medical records is relatively low. The study concludes that there is a risk, therefore, that when the records officers do not have the full mandatory skills, this can compromise the quality of patient record management and affect the overall service delivery in PHCs. It is also stipulated by Schellnack-Kelly (2014:216) that in local governments, records managers are supposed to understand complex legislation and observe good governance in order to provide a transparent, accountable government to all South Africans. This study also concludes that the Diepsloot PHC do not have a clear reporting and hierarchical structure, as all records staff only report to the facility manager who only holds a nursing qualification.

5.4.5. Conclusion on the filing of medical records

The study concludes that while there was a classification system that was used by the PHC, there was, however, a challenge of non-compliance and inconsistence by the records staff as the classification numbers were incomplete. Non-compliance to filing systems can cause delays in retrieving medical records and also contributes to missing files. Missing files have adverse implications on patients' medical prescription, diagnosis and the loss of patient medical history.

5.5. RECOMMENDATIONS

In line with the findings of the study, several practical recommendations were made to the Diepsloot PHC. The aim of these recommendations was to improve the overall service delivery of the PHCs. It was evident from the findings stipulated in chapter four that there is a need for proper medical records management in Diepsloot PHCs. The recommendations made to the management of medical records in the PHC of Diepsloot were based on the findings of the study, the literature review and the objectives of the study. The recommendations were also based on the need to ensure compliance with relevant legislative requirements and international standards such as the ISO 15489-1. In the light of the above considerations, the researcher made some recommendations,

which, if implemented, may bring some helpful changes to the management of PHC medical records.

5.5.1. Legal and regulatory requirements

The study recommends the implementation of a legal and regulatory policy that will guide and ensure effective governance of medical records in PHCs. The Diepsloot PHC should develop and implement a good records management programme and set up standards and guidelines. This would encourage uniformity within the PHC as far as the management of medical records is concerned. Detailed policies should cover how records should be maintained throughout the life cycle and continuum. It is not enough to adopt national acts, policies and regulations but also communicate and train staff about the regulatory policies guiding the PHC. It is also recommended according to ISO 15489 (2016:13) that the records regulatory framework "should be authorised and endorsed at an appropriate decision-making level and should be promulgated internally and externally as appropriate".

5.5.2. Infrastructure for the management of medical records

In accordance with infrastructure for the management of medical records in Diepsloot PHC, the researcher recommends that the Gauteng Department of Health must allocate sufficient budget to the PHC to cater for infrastructure required for proper records management. The budget should cater for infrastructures like filing cabinets, paper file covers, storage boxes and file clips. It is also recommended that the architectural design of PHCs should provide for controlled environmental conditions and provide a larger records storage area to cater for the fast-growing number of medical records and enable easy retrieval of records.

Retention and disposal policies should be in place and functional so that archival and records that need to be disposed of do not take up space for current and records of continuing value in records storage rooms. This should be done in line with a comprehensive records appraisal schedule. Retention and disposal schedules also enhance retrieval of records as it reduces congestion and mixes up of both current and non-current records.

It is evident that paper format medical records are not the best option and format for storing medical records. It is therefore recommended that the PHC should back up paper files with electronic records, in order to save on storage space and enhance a quick retrieval of medical records. In the health sector where it is of paramount importance to provide quick service because it involves the life and death of a patients, automated management of medical records will help improve service delivery as retrieval of files will be fast. Electronic records management enables the integration of

PHC services; for example, all departments can access a patient file concurrently thereby avoiding the creation of multiple files for one patient. Hard-copy medical records are only accessed by one person at a time, thereby creating a slow service delivery.

5.5.3. Security of medical records

Given the importance and nature of patient information, it is imperative that medical records should be protected from misuse by unscrupulous individuals, who might use it for wrong purposes. The recommendation to medical records security is in accordance to ISO 27001, which states that security requirements should be identified by a methodical assessment of security risks to determine the appropriate management action and priorities for managing records and for implementing controls selected to protect against these risks. Medical records contain very crucial information on all the diagnosis and treatment given.

It is therefore of utmost importance that medical records should be kept in a lockable and safe place with security technology such as card or fingerprint access control, as well as surveillance cameras, and not on the floor, or in open boxes or at a reception area as was observed in this study. To strengthen the security, the personnel with access to storage rooms need to take extra care and ensure that the storage rooms are always locked, despite the availability of facility security guards. As an option, to make sure that the doors are always locked, the PHCs must replace the manual doors with automatic doors with auto-lock facility to make sure the storage rooms are locked at all times.

It is recommended in accordance with ISO 27001, that records security should be achieved by implementing an appropriate set of controls, including policies, processes, procedures and these controls should be established, implemented, monitored, reviewed and enhanced to ensure that the specific security and business objectives of the organisation are met. Records security education and training should be rendered to everyone with the responsibility of managing records for awareness and compliance. Commitment to medical records security should be done by all levels of the PHC management for appropriate funding and support to all other employees involved in records management.

5.5.4. Staff skills and competences

PHC records management department needs to be run by experienced professionals and skilled specialists who understand their roles and responsibilities. It is, therefore, recommended that the PHCs should constantly upgrade and train the records management staff to have a qualification in

records management, in order to enable them to cope and comply with records management requirements. Skills development forms a crucial part that enables efficiency and service delivery in any health sector as technology keeps on advancing.

The PHCs needs to regularly undertake training needs assessment for medical records management personnel to develop a training plan to support the needs identified. It is also recommended in the study conducted by Schellnack-Kelly (2014:215) that entities should employ competent and committed records management officials and should be adequately positioned to vigilantly advocate compliance with policies, good record keeping and actively participate in the selection, roll-out and maintenance of electronic solutions.

Employing qualified records management personnel and providing skills development could help to minimise issues relating to misfiling and improper handling and facilitate easy retrieval. Records management training is also required on the part of medical professionals on all important issues relating to data entry, handling and the overall good records management practices for effective and efficient service delivery. Workshops will also be advantageous to new, temporary and existing staff so that they can always be alert on what they are doing.

To increase staff competence in records management processes, there is a need for staff training. Staff training can be provided in house or outsourced from a records management training third-party service provider. It is in line with NARS (2007:45) that states that a governmental body may choose a third-party supplier to provide records management training, as long as the supplier is well versed in the requirements of the National Archives and Records Service Act, 1996 as amended.

5.5.5 Filing of medical records

The filing system should be organised so that records can be easily accessible to enhance effective service delivery by the PHC sector. Poor filing and classification of medical records could undermine service delivery and therefore compromise transparency and accountability in any health institution. The researcher,, therefore, recommends that there be a coherent and consistent filing system in all the PHCs. The staff responsible for the management of medical records should comply with the set filing and classification systems.

5.6. AREA OF FURTHER RESEARCH

Most information science medical records management masters dissertations and doctoral theses have alluded to the management of medical records in the secondary health sector. The current

empirical study sought to break the ground and research on the management of medical records in the PHC sector. The study has highlighted several researchable aspects that could be pursued further by records management experts and researchers. The study brought to light several issues that will require to be fully explored through further research. The following recommendations for further research were emphasised:

- a similar study should be conducted in a broader spectrum from PHCs situated in different geographical areas throughout South Africa. The researcher, therefore, recommends undertaking a multiple-case study in order to obtain broader information about the management of medical records in PHCs.
- the PHC is currently using paper records management system, the study recommends another research that will investigate the feasibility of the implementation of the electronic medical records management system.
- comprehensive research can be conducted to determine the roles, skills, competencies, qualifications and responsibilities of medical records officers

5.7. CHAPTER SUMMARY

The summary, conclusion and recommendations were all guided by the research objectives of the study. Recommendations for further research in line with medical records management were also highlighted in this chapter. The study found out that there is a correlation between medical records management and the provision of healthcare service delivery. Medical records management negatively affected the Diepsloot PHC service delivery due to misfiling, poor record infrastructure, unskilled and incompetent records staff. The study concludes that good medical records management is of paramount importance for improved service delivery, for the fulfilment of the PHC vision, mission, and goals and for the attainment of the government mandate of the Batho-Pele principles. Schellnack-Kelly(2014:202) states that the result of poor record-keeping in the local government sector is unreliable information, which in turn hampers accountability and transparency.

5.8 CONCLUDING REMARKS

The purpose of this section is to provide a summary of all the preceding chapters. In a nutshell, the study has endeavoured to examine the management of medical records in support of the PHC services of Diepsloot in the Gauteng region of South Africa. A summary of the preceding five chapters has been outlined. Chapter one gave an introduction and background information to put the research into context by highlighting issues and challenges on medical records that the study is addressing and why it was important for those issues to be addressed. The chapter also gave the

problem statement to clarify the research problem and research questions to put the study into context. The chapter had objectives and the significance of the study to establish the purpose of the study and provide the scope and logical development of the study. Definition of the terms was also included in the chapter.

Chapter two reviewed the relevant literature relating to the management of health records. This chapter put the study into context by highlighting what other scholars have written on the management of medical records, thereby enabling the researcher to further understand issues regarding medical records through critically analysing gaps and contradictions in the existing literature. The review of the literature was guided by the objectives of the study and the theoretical framework that guides the management of records.

Chapter three discussed the methodology of the study, the paradigms and the research designs employed by the study. The research design for this study was a descriptive and interpretive case study that was analysed using qualitative methods. The chapter also justified the use of a qualitative research approach as well as give the justification of why case study design formed the study. The chapter also focused on the population of the study, purposive sampling technique, the data gathering tools including interviews and observations as well as validity and reliability issues.

Chapter four presented the data analysis and interpretation. The chapter presented the data guided by the objectives of the study. The data presentation tools consisted of graphs, pictures, tables and plain text. The findings of the study were discussed based on the literature reviewed, the specific objectives that guided the study and the raw data collected.

Chapter five dealt with the study summary, conclusions and recommendations to the study. Taking into consideration that one of the objectives of the study was to propose recommendations that can improve the general management of primary health care records in Diepsloot clinics, the recommendations were based on the findings of the study. This dissertation is concluded in the faith that the findings and recommendations made will be constructive and add value to the body of knowledge.

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APPENDIX 1: INFORMED CONSENT FORM

PARTICIPANT INFORMATION SHEET

July 7, 2018

Title: Management of medical records in support primary health care services of Diepsloot in the Gauteng province of South Africa

Dear Prospective Participant

My name is Nakanani Ngwenya, I am doing research with Dr Isabel Schellnack-Kelly, a lecturer in the Department of Information Science towards a Masters degree at the University of South Africa. We are inviting you to participate in a study entitled Management of medical records in support of primary health care services of Diepsloot in the Gauteng province of South Africa.

WHAT IS THE PURPOSE OF THE STUDY?

This study is expected to collect important information that could help gain indepth understanding on how medical records management support primary health care services of Diepsloot in the Gauteng Province of South Africa with an intention to propose improvement strategies**.**

WHY AM I BEING INVITED TO PARTICIPATE?

You have been chosen as the participant as the target population are all records administrators of all the Diepsloot clinics .The approximate number of participants is 50 .

WHAT IS THE NATURE OF MY PARTICIPATION IN THIS STUDY?

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Preller Street, Muckleneuk Ridge, City of Tshwane
PO Box 392 UNISA 0003 South Africa
Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150
www.unisa.ac.za

The study involves semi-structured interviews and observations. The questions asked will be related to records infrastructure, records security, records filing systems, legal and regulatory issues relation to records management and staff skills and competences. The expected time of completing the interview is approximately 20 minutes during each interview session.

CAN I WITHDRAW FROM THIS STUDY EVEN AFTER HAVING AGREED TO PARTICIPATE?

Participating in this study is voluntary and you are under no obligation to participation. If you do decide to take part, you will be given this information sheet to keep and be asked to sign a written consent form. You are free to withdraw at any time and without giving a reason before interviews commence.

WHAT ARE THE POTENTIAL BENEFITS OF TAKING PART IN THIS STUDY?

Participation in this study will contribute to enhancing the understanding regarding the importance of a sound records management program at a primary health level. Participants will benefit from this research, as it will create awareness and provide baseline information to formulate further research and the implementation of corrective measures.

ARE THEIR ANY NEGATIVE CONSEQUENCES FOR ME IF I PARTICIPATE IN THE RESEARCH PROJECT?

There will be no negative consequences to the participants as the names will not be mentioned thus the participants will remain anonymous.

WILL THE INFORMATION THAT I CONVEY TO THE RESEARCHER AND MY IDENTITY BE KEPT CONFIDENTIAL?

Your name will not be recorded anywhere and no one will be able to connect you to the answers you give. Your answers will be given a code number or a pseudonym and you will be referred to in this way in the data, any publications, or other research reporting methods such as conference proceedings.

Your answers may be reviewed by people responsible for making sure that research is done properly, including the transcriber, external coder, and members of the Research Ethics Review Committee. Otherwise, records that identify you will be available only to people working on the study, unless you give permission for other people to see the records. The research data may be used for other purposes, such as a research report, journal articles and/or conference proceedings but individual names will not be identified.

HOW WILL THE RESEARCHER(S) PROTECT THE SECURITY OF DATA?

Hard copies of your answers will be stored by the researcher for a minimum period of five years in a locked cupboard/filing cabinet for future research or academic purposes; electronic information will be stored on a password protected computer. Future use of the stored data will be subject to further Research Ethics Review and approval if applicable. After the stipulated storage time copies will be shredded and electronic copies will be permanently deleted from the hard drive of the computer through the use of a relevant software program.

WILL I RECEIVE PAYMENT OR ANY INCENTIVES FOR PARTICIPATING IN THIS STUDY?

There will be no payment for participating in the study.

HAS THE STUDY RECEIVED ETHICS APPROVAL

This study has received written approval from the Research Ethics Review Committee of the Collage of Human Sciences, Unisa. A copy of the approval letter can be obtained from the researcher if you so wish.

HOW WILL I BE INFORMED OF THE FINDINGS/RESULTS OF THE RESEARCH?

If you would like to be informed of the final research findings, please contact Nakanani Ngwenya on email address nakanani85@gmail.com. The findings are accessible for 5 years.

Should you require any further information or want to contact the researcher about any aspect of this study, please contact Dr Isabel Schellnack-Kelly on 012 429 6936. Should you have concerns about the way in which the research has been conducted, alternatively you may contact Isabel Shellnack-Kelly on schelis@unisa.ac.za.

Thank you for taking time to read this information sheet and for participating in this study.

Thank you.

n ngwenya

Nakanani Ngwenya

APPENDIX 2: REQUEST FOR PERMISSION LETTER

Request for permission to conduct research at Diepsloot OR Tambo clinic and Diepsloot South Clinic

Research Topic: Management of medical records in support of Primary health care services of Diepsloot in the Gauteng Province of South Africa

05-07-2018

JHB METRO DISTRICT HEALTH

Office: Director

Dear sir/ Madam

I, Nakanani Ngwenya am doing research with Isabel Schellnack-Kelly a senior lecturer in the Department of Information Science towards a Masters Degree at the University of South Africa. I hereby request to do a study entitled Management of medical records in support of Primary health care services of Diepsloot in the Gauteng Province of South Africa

The aim of this study is to investigate how medical records management support primary health care centres of Diepsloot in the Gauteng Province of South Africa with an intention to propose improvement strategies**.** Your organisation has been selected because the researcher is a resident and will like to contribute in the effective management of the records created by your clinic. The study will entail interviews and observations.

The benefits of this study are the overall improvement of medical records management at Diepsloot clinics. The study will contribute to enhancing the understanding regarding the importance of a sound records management program at a primary health level. Participants will benefit from this research, as it will create awareness and provide baseline information to formulate further research and the implementation of corrective measures.

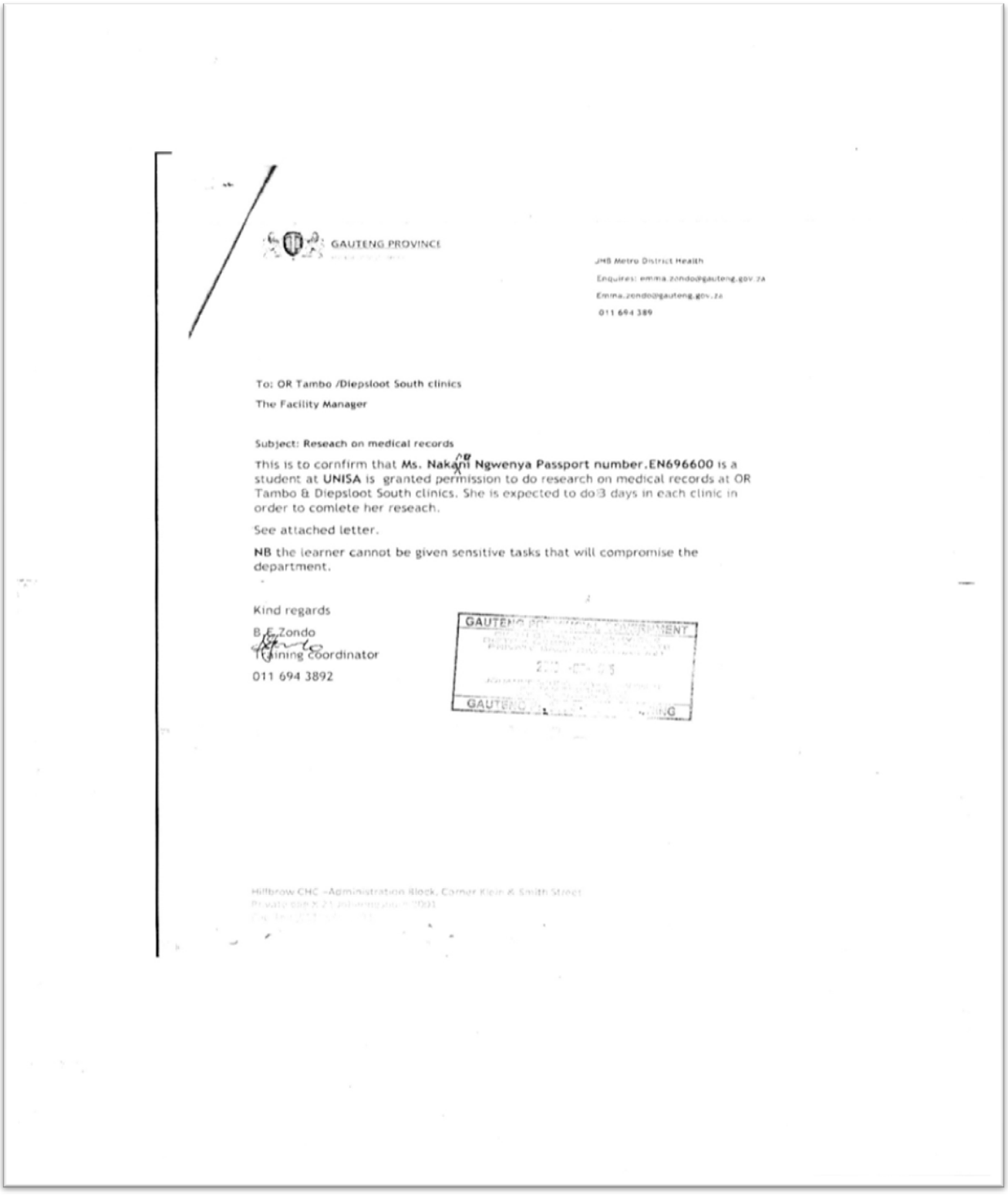
No potential risks. There will be no negative consequences to the participants as the names will not be mentioned thus the participants will remain anonymous. Patients will not be part of the study

and files will only be observed for physical appearance and no personal patients' information will be accessed. The researcher is also aware of the ethical considerations in the process of conducting the study. The researcher Feedback procedure will entail a competed copy of the researcher's dissertation freely given to the clinic.

Yours sincerely

Nakanani Ngwenya
Master of Information science student

APPENDIX 4: APPROVAL LETTER FROM DEPARTMENT OF HELTH: GAUTENG



GAUTENG PROVINCE

JHB Metro District Health
Enquiries: emma.zondo@gauteng.gov.za
Emma.zondo@gauteng.gov.za
011 694 389

To: OR Tambo /Diepsloot South clinics

The Facility Manager

Subject: Reseach on medical records

This is to cornfirm that **Ms. Nakani Ngwenya Passport number.EN696600** is a student at **UNISA** is granted permission to do research on medical records at OR Tambo & Diepsloot South clinics. She is expected to do 3 days in each clinic in order to comlete her reseach.

See attached letter.

NB the learner cannot be given sensitive tasks that will compromise the department.

Kind regards

B.E.Zondo
Training Coordinator
011 694 3892

GAUTENG PROVINCIAL GOVERNMENT

GAUTENG

Hillbrow CHC –Administration Block, Corner Klein & Smith Street
Private Bag X 21 Johannesburg 2001

APPENDIX 5: ETHICAL CLEARANCE LETTER

UNISA university of south africa

COLLEGE OF HUMAN SCIENCES RESEARCH ETHICS REVIEW COMMITTEE

17 August 2018

NHREC Registration # : Rec-240816-052
CREC Reference # : 2018-CHS-0031
Name : Nakanani Ngwenya
Student #: 55771548

Dear Nakanani Ngwenya

Decision:
Ethics Approval from 17 August July 2018 to 16 August 2019

Researcher(s): Nakanani Ngwenya

Supervisor(s) : Dr I Schellnack-Kelly
Department of Information Science
schelis@unisa.ac.za

Management of medical records in support of primary health care services of Diepsloot in the Gauteng Province of South Africa

Qualifications: PhD (Information Science)

Thank you for the application for research ethics clearance by the Unisa College of Human Sciences Research Ethics Committee for the above mentioned research. Ethics approval is granted for one year.

The ***low risk application*** *was* ***reviewed and*** **expedited** by the Chair of College of Human Sciences Research Ethics Committee on the 24th July 2018 in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.
The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.

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2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the Department of Psychology Ethics Review Committee.
3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.
5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data require additional ethics clearance.
7. No field work activities may continue after the expiry date (**16 August 2019**). Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

Note:

The reference number **2018-CHS-0031** *should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.*

Yours sincerely,

Signature : Surya Chetty

Prof AH Mavhandu-Mudzusi
Chair : CHS Research Ethics Commitee
E-mail: mmudza@unisa.ac.za
Tel: (012) 429-2055

Signature :

Professor A Phillips
Executive Dean : CHS
E-mail: Phillap@unisa.ac.za
Tel: (012) 429-6825

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APPENDIX 6:INTERVIEW GUIDE

INTERVIEW GUIDE

A. LEGISLATIVE & POLICY FRAMEWORK FOR MANAGEMENT OF MEDICAL RECORDS

1. What policy is use in managing medical records?

2. Who is responsible for the implementation of such a policy?

3. How is the policy communicated to PHC staff?

4. Are there any laws governing the use of medical records that your clinic adheres to?

5. Do you have a records management policy for medical records management in this PHC and if so does the policy cover all records management functional requirements?

6. Do you have a retention or disposition policy for records no longer needed by the clinic?

7. Is there a records management or information management committee in the clinic?

8. How important is the records and Information Department in the clinic?

9. What is the role of the National Archives of South Africa in this clinic regarding records management?

10. Are you aware that the National Archives keep all in active records of government that have continuing value?

11. If you do not transfer your medical records to the national Archives, what strategies have you put in place to ensure the preservation of records for long term use?

B.RECORDS INFRASTRUCTURE

12. Where do you keep your medical records?

13. Who is responsible for the maintenance of the records building?

14. What are the problems leading to the loss of files records in your primary health care centre?

15. What are the problems leading to the damage of files records in your primary health care centre?

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

17. C.MEDICAL RECORDS SECURITY

18. 4. What measures are in place to ensure the security of medical records?

19. 5. What measures are there to ensure the security of patient health information from unauthorised persons?

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

21. Do you have a file tracking system in place and how does it work?

22. How is the movement of patient folders within the clinic regulated?

D.STAFF SKILLS AND COMPETANCES

23. What records management qualification do you have?

What other qualification do you have?

.....

24. What records management training has the clinic provided?

25. In what way did the training you receive enhance the oval management of records

E.MEDICAL RECORDS FILING

26. How are medical record created or received in this PHC?

27. How are these medical records arranged?

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

29. What are the precautionary measures to keep track of borrowed patient folders by other PHC units?

30. How are medical records retrieved?

31. What are the perceived problems in medical records arrangement in your primary health care centre?

32. What kind of clips (fasteners) are used to hold together records?

33. What criteria do you use in choosing those fasteners?

34. What classification scheme are you using in this PHC?

35. What indexing method are you using in this PHC?

F. SERVICE DELIVERY

36. What effect do medical records have on the continuity healthcare service delivery?

37. What problems have you encountered in the management of clinic records and service delivery?

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38. What recommendations do you have regarding patient record management?

APPENDIX 7: OBSERVATION CHECK LIST

OBSERVATION CHECKLIST

SECURITY

Is the medical record storage site protected from unauthorised access?

INFRASTRUCTURE

a) Storage equipment
   Office layout
   Floor space
   Storage
   Generally cleanliness
   Shelving types
   Files types

b) environmental conditions
   Temperature
   Relative humidity
   Light intensity
   Atmospheric pollution
   Insects
   Fire
   Water
   Dust:

FILING

c) Indexing
d) Classification
e) Coding
f) File retrieval
g) File physical conditions