INFORMATION MANAGEMENT PRACTICES AT MANKWENG PUBLIC HOSPITAL, LIMPOPO PROVINCE, SOUTH AFRICA

by

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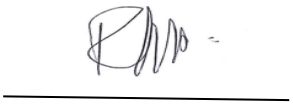
DECLARATION

I, Philly Tlou Tshegofatso Phoshoko declare that INFORMATION MANAGEMENT PRACTICES AT MANKWENG PUBLIC HOSPITAL, LIMPOPO PROVINCE, SOUTH AFRICA is my original work and that all sources used and borrowed ideas have been acknowledged by way of complete references and citations. I further declare that this work has not been submitted for any degree purposes at any institution, including the University of Limpopo.

Phoshoko P.T.T 

Surname and initials **Signature**

DEDICATION

I dedicate this dissertation to my loving mother, Linah Mapaologa. It is through her words of motivation, words of assurance, constant reminders that I am capable and unwavering support that I was able to complete the dissertation. I also dedicate this dissertation to my siblings Hellen, Tshepo, Abram and Jacob for their support.

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ABSTRACT

Over the years, information management (IM) has become a key anchor in the successful delivery of healthcare services, facilitating access and provision of information to those providing services at the point of care, as well as informing strategic decision-making and prompting key reforms in hospitals. The aim of the study was to examine information management practices at Mankweng Public Hospital, Limpopo Province, South Africa. The study was guided by the process model of information management. The study adopted a qualitative research methodology through a descriptive case study research using semi-structured interviews as a method of data collection. The key findings showed that information officers recognise and are aware of the users' information needs. The perceptions of the information officers included lack of a larger office space to allow for a coordinated information storage, as well as poor data provided by source points which was believed to be a constant burden hampering the efficiency of the information management section. Tools used by information officers to manage information included physical wards and clinics registers, and daily and monthly input forms which are unique to the ward speciality. Factors that were uncovered to affect the application of information management in this study were limited budget, shortage of staff and equipment, lack of staff training and poor data from source points. Information management strategies that can be implemented to remedy the malady included recruitment of information officers, procurement of equipment, staff training, acquisition of electronic health records and the installation of Wi-Fi. This study recommends that, in light of the fact that many of the problems faced by the information management section stem from financial constraints, adequate budget must be allocated to facilitate the recruitment of information officers, the procurement of the necessary hardware and software, particularly computers, a multifunctional printer and electronic health records. Staff training programmes should be initiated for both information officers and source points, as well as the provision of a larger office space.

Key words: **Information management, Mankweng public hospital, Information officers, Academic hospital, Information management practices.**

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LIST OF ABBREVIATIONS

AI	Artificial Intelligence
CDCP	Centres for Disease Control and Prevention
CDSS	Clinical Decision Support System
Child PIP	Child Healthcare Problem Identification Program
CRM	Customer Relationship Management
DAM	Digital Asset Management
DHIS	District Health Information System
DMS	Document Management Systems
EHR	Electronic Health Records
EIM	Enterprise Information Management
ERP	Enterprise Resource Planning
GDPR	General Data Protection Regulation
HIE	Health Information Exchange
HIPAA	Health Insurance Portability and Accountability Act
ICU	Intensive Care Unit
IM	Information Management
IMS	Information Management Systems
IT	Information Technology

KM	Knowledge Management
KMS	Knowledge Management Systems
NHS	National Health Service
OpenMRS	Open Medical Record System
PACS	Picture Archiving and Communication Systems
POPIA	Protection of Personal Information Act
PPIP	Perinatal Problem Identification Program
TREC	Turfloop Research Ethics Committee
Wi-Fi	Wireless Fidelity

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CHAPTER ONE

INTRODUCTION AND BACKGROUND OF THE STUDY

1.1 INTRODUCTION

It is important that individuals, organisations and governments develop the best practices to manage information to optimise efficiency and productivity. This is because information is the most basic and essential commodity in the world. Information management (IM) today is mainly driven and facilitated by advanced technology at our disposal; hospitals are no exception. Information management is the process of collecting, storing, processing, managing, maintaining, and retrieving information in all its facets. Rouse (2017) defines information management as a broad term that incorporates policies and procedures for centrally managing and sharing information among different individuals, organisations and/ or information systems throughout the information life cycle. The concept is also perceived as the lifeblood of any business or organisation in that it mandates the way in which organisations develop strategies and carry out processes rooted in them (Edology, 2018). Information management necessitates the right information in the appropriate format, thereby facilitating decision-making and supporting the efficient operation of an organisation.

Information services brought by information management best practices continually transform hospital services to be more convenient for patients in accessing hospital files and addressing imbalances in hospitals. Cilip (2018:1690) holds that “information management best practices provide improved leverage/ return on investment of the organisation's technology investments and improved effectiveness/ performance”. Similarly, Malak (2022) posits that information management complements productive capacity and effectiveness, boosts information access and retrieval, betters support of business needs, enhances compliance, augments risk management, and facilitates well-versed strategic planning and business decisions. Additionally, Demain and Walters (2011) state that information management is a much more accurate and appropriate method of exchanging information.

There is a compelling case for a direct connection between information management and service provision. Proper execution of information management translates into higher productivity, ultimately meaning higher revenue and reduced expenses. Ojo (2017) explored the repositioning of health information management practices in Nigeria, and posits that there is a deficiency of adequate health information management systems (IMS) as a result of the dominance of incoherent paper-based health data management systems. Moreover, David and Dube (2013) lament that in Zimbabwe, health information management infrastructure for communication is dilapidated, and that there is a deepened general lack of health communication technology, and health information management personnel capacity to process information is low. Likewise, Koumamaba, Bisvigou and Diallo (2021) delved into health IMS and strategies in African developing countries. It was established that the absence of a national health information management strategy will be an ongoing threat to health information system performance in African countries.

South Africa, like many other countries around the world, is coming to terms with issues of upholding and treating information management with great respect that it deserves as the government is transitioning to e-government (Sihlezana, 2006). Following many past experiences, the majority of governmental institutions in South Africa constantly leave out information management as a key component for successful service delivery. Sihlezana (2006) holds that some selected South African government departments do not have a strong underlying information management infrastructure, and the strategies used to manage information are ineffective. This is a result of the disregard that is prevalent for information management in the country.

The application of advanced information management has brought some challenges in managing information. According to Malak (2022), there are factors that affect proper information management, such as lack of strategy, poor digitisation of documents, automating processes, controlling, securing information access, minimising information silos, and connecting with older systems. Ceruti (2004) contends that with the rise of new technologies in information management, data aggregation exposes information to unpredictable security threat. Ahmadian, Dorosti

and Gohari (2017) mention that some hospitals have poor information management practices because the level of education and work experience in the healthcare environment are greatly connected to the proficiency in addressing hardware challenges. A study by Classen, Resar, Griffin, Federico, Frankel, Kimmel, Whittington, Frankel, Seger and James (2011) found that poor information management was a contributing factor to 36.9% of medication errors in hospitals. A lack of information management can result in medical errors, such as prescribing the wrong medication, misinterpreting laboratory results, or performing the wrong procedure. Again, a study by Blumenthal and Tavenner (2010) found that a lack of information management can result in poor decision-making. Without access to complete and accurate patient information, healthcare providers may make decisions based on incomplete or outdated information. Consequently, this can lead to poor hospital service, data security breaches, and suboptimal treatment outcomes, which can affect the reputation of the hospital (Blumenthal & Tavenner, 2010; Ponemon Institute, 2019; Lomotan & Wetterneck, 2013). Therefore, this study investigated information management practices at Mankweng Public Hospital, Limpopo Province, South Africa. The researcher conducted the study with the aim of recommending new information management practices that can be adopted, new technologies that are incumbent for senior management to procure, and advanced processes and procedures that can be implemented.

1.2 BACKGROUND INFORMATION

Mankweng Public Hospital was established following requests from traditional leaders “Magoshi” in the Thabamoopo region for a medical facility to serve their people around the Mankweng area (Polokwane Mankweng Hospital Complex, 2010). The hospital was built and commissioned on 1 July 1988 and was officially opened by the Chief Minister of Lebowa Government, Mr Noko Ramodike (Polokwane Mankweng Hospital Complex, 2010). The hospital is situated in the Limpopo Province adjacent to the University of Limpopo. Considering the struggles faced by many South African government institutions when it comes to information management, Mankweng Public Hospital is no exception. A prior visit and engagement by the researcher with employees in the information management section at Mankweng Hospital revealed

that the section has in place processes and procedures (practices) that inhibit the effective expedition of information management. One particular practice that stands out among others as a hindrance to the overall efficiency and effectiveness of the information management section is the use of physical paper records to collect data, thereby causing error and duplication of activities as no technological system is in place to collect data. The section lacks adequate information management infrastructure necessary to manage information in an academic hospital.

With Mankweng Public Hospital being an interdisciplinary institution in operations, it is imperative that effective processes and procedures are implemented by the information management section to serve and service the information needs of all the branches of knowledge (disciplines) in the hospital. According to the Parliamentary Monitoring Group (2011), a comprehensive number of clinical departments/ sections exist at Mankweng Public Hospital. These range from paediatrics, intensive care unit (ICU), burns, orthopaedics, neonatal, postnatal, psychiatry, casualty, optometry, gynaecology and surgical. Paediatrics as a branch of medicine focuses on the healthcare of children, and is deeply rooted in finding survival pathways for children (Strouse, Trout & Offiah, 2022). Smith (2022) mentions that ICU is representative of the highest level of patient care in any hospital, and the function of ICU is to deal with, and manage extreme, potentially life-threatening cases. Burns largely deals with the resuscitation and management of burned and scarred skin (Schaefer & Lopez, 2023). Making itself one of the cardinal pillars of medicine, orthopaedics places specialised focus on the treatment of bones, joints, muscles, tendons and ligaments (Altomara, 2024). According to Doherty, Hu and Salik (2023), neonatal care addresses a wide array of medical conditions with particular focus on babies. These include complications detected before a baby is born, breathing complications, heart conditions and birth defects. Furthermore, postnatal units dispense care for mothers and new-born babies, a mother-baby centric care in nature, to nip in the bud maternal and new-born morbidity and mortality (McCauley, Lowe & van den Broek, 2022).

Guthrie (2023) postulates that psychiatry as a branch of medicine focuses on the mental aspects of patients, and the function of psychiatry is to diagnose and treat

mental disorders. Casualty, seen as a significant component of any healthcare system, provides emergency medical care to people with severe trauma, and play a vital role in disaster response (DeNolf & Kahwaji, 2022). Khan (2023) further holds that optometry focuses on eye and vision care, including the detection and treatment of eye illnesses. Gynaecology, foundational to the healthcare of women, zooms into the diagnosis and treatment of female reproductive organs, placing special focus on aspects like prophylactic care, sexual health, cancer screenings, and physical exams (Ratini, 2023). As asserted by Gawande (2012), surgical deals with the treatment of injuries, diseases, and other disorders by manual and instrumental means. Taking into consideration the diverse, specialised information needs of the different sections at Mankweng Public Hospital, effective processes and procedures ought to be in place to cater for the vast facets of information needs.

1.3 RESEARCH PROBLEM

Information management (IM) in hospitals involves the processes of collecting, storing, organising, and disseminating information to facilitate decision-making, ensure compliance, and improve patient care. Organisations should have in place information management best practices due to its importance. Proper information management practices are crucial for hospital operations, as they ensure the effective use of information for strategic decision-making, resource allocation, and maintaining patient safety. Information officers should organise, oversee, and protect patient health information data (Explore Health, 2022). They must have in place stringent access controls and maintain systems for the easy access and retrieval of information.

However, preliminary literature has established that most hospitals in Africa, particularly South Africa are characterised by poor information management practices (Ojo, 2017; David & Dube, 2013; Koumamaba, Bisvigou & Diallo, 2021). This is due to the dominance of paper-based IMS, lack of technological infrastructure for managing information, absence of retention policies, as well as lack of personnel with technical expertise in information management. Ineffective information management practices increase the risk of non-compliance with regulatory requirements, potentially resulting in legal penalties and loss of accreditation. Reshma (2022) explains that poor information management lead to improper utilisation of time and space, disrupted flow

of information, loss of knowledge, mishandling of information, risk of losing clients' trust, loss of reputation, and non-compliance with legal and regulatory requirements. Didlake (2022) states that if a team searches through three or more locations, then it is not operating with modern-day efficiency. There are also limited technological resources provided by senior management in hospitals, as well as an apparent lack of investment in technology to increase efficiency. Technology in information management is a critical part of every institution. It enables the big data type insights that drive institutional strategies and information retention policy for compliance.

Poor information management in hospitals has devastating effects that can cripple healthcare delivery. As a result of poor information management in hospitals, there are complications that are traced to inaccessibility of patient information, absence of health information coordination, and poor quality of information being disseminated, which could result in misinformation and irrational decision-making (Bukolabetty, 2022). These problems directly impact patient care and service delivery. Patients may experience longer wait times. For information officers, the inefficiencies in information management lead to increased workloads and irritation. Furthermore, poor information management in hospitals can lead to implications such as non-compliance with regulatory requirements that could result in hefty monetary penalties (Frisse, 2019). Mankweng Public Hospital, being one of the largest academic hospitals in South Africa, should serve as a model for other hospitals as far as information management is concerned. Therefore, this study investigated information management practices at Mankweng Public Hospital, Limpopo Province, South Africa. The researcher conducted the study with the aim of recommending information management strategies that can be implemented, not only at Mankweng Public Hospital, but also in other hospitals in the country.

1.4 PURPOSE OF THE STUDY

This section provides the aim of the study and the research objectives which serve as guideposts to help achieve the goals of the study.

1.4.1 Aim of the study

The aim of the study was to examine information management practices at Mankweng Public Hospital, Limpopo Province, South Africa.

1.4.2 Research objectives

- To measure the awareness of information officers regarding users' information needs at Mankweng Public Hospital.
- To determine perceptions of information officers towards information management at Mankweng Public Hospital.
- To identify the information management tools used by information officers at Mankweng Public Hospital.
- To establish the factors that affect the application of information management at Mankweng Public Hospital.
- To recommend information management strategies that can be implemented at Mankweng Public Hospital.

1.5 SIGNIFICANCE OF THE STUDY

Academic research facilitates learning, highlights key issues in society, and can promote the growth of businesses. It is therefore important that each piece of research is read by as many interested parties as possible (Mullins, 2022). The significance of this study is based on the premise of providing a thorough overview of the prevalent conditions of information management at Mankweng Public Hospital, as well as highlighting how important it is for the hospital to procure new technologies for information management and implement them, considering that it is technology-driven. As has been witnessed many times, many organisations, especially in the public sector, are struggling with the task of managing information. For example, a report by the International Records Management Trust (IRMT) revealed the persistent challenges faced by the public sector organisations in managing records and information effectively, which often results in inefficiencies and a lack of transparency (IRMT, 2009). This is caused by many reasons, but one that stands out from the others is the disregard for the importance of information management in organisations, especially by senior management. The study underscores the importance of equipping information management personnel with the necessary skills and knowledge. This can lead to targeted training programs and professional development initiatives that empower information officers and improve overall information management capabilities. By identifying and addressing current inefficiencies in information management, the study can help Mankweng Public Hospital streamline its operations, reduce redundancy, and optimise resource allocation. This can lead to cost savings

and more efficient use of staff time. Furthermore, by emphasising the need for new technologies, the study can encourage the adoption of advanced information management systems that enhance data accuracy, security, and accessibility. This study serves as a propellant factor for modification and inception of information management strategies, the necessary skill set required by those working within information management and overall processes and procedures. With the study being fact-finding and probative in nature, it is beneficial to different parties that are interested in this area of study. This study also makes contributions to the body of knowledge that already exists.

1.6 SCOPE OF THE STUDY

With Mankweng Public Hospital being an interdisciplinary health institution with different sections, the scope of this study focused on information officers responsible for information management practices within the information management section. The study focused exclusively on Mankweng Public Hospital, an academic hospital in the Limpopo Province, South Africa. The research targeted the information management section of the hospital, which is critical for managing information of the hospital. The intention was to investigate the information management practices at the hospital, evaluate the information management processes and procedures, assess the personnel responsible for information management, and analyse the technologies used to manage information. The study aimed to understand what information is being managed, how it is managed, the systems and procedures in place, and whether the managed information is accessible to healthcare professionals who use it for the day-to-day running of the hospital. This approach ensured that the researcher gains a detailed overview of the current state of information management at Mankweng Public Hospital. The study did not extend to other hospitals or healthcare institutions, focusing solely on Mankweng Public Hospital. Again, the study did not include healthcare professionals who are solely users of information, such as doctors and nurses.

1.7 DEFINITION OF KEY CONCEPTS

This section provides clarification on the key concepts that are essential to the current study, and the context under which they are used. The key concepts that appear frequently in this study are Information Management (IM); Information Management Practices; Electronic Health Records (EHR); Information Officers; Academic Hospital; Information needs and Information Management Tools.

1.7.1 Information management

Bates (2009) defines information as “all instances where people interact with their environment in any such way that leave some impression on them”. Information is an asset in any organisation, and the management of this information is a means to manage printed and electronic documents during their whole life cycle. For the purpose of this study, the concept “information” refers to all Information that is recorded in printed and electronic documents or records within an organisation. The recorded information, irrespective of whether the information is in a printed or electronic format needs to be managed so that the information can be easily accessed by the users. Effective management of information ensures that information is organised in a manner that meets the needs of the organisation and its users, enabling quick retrieval, accurate processing, and informed decision-making. Detlor (2010) defines information management as the control over how information is created, acquired, organised, stored, distributed and used as a means of promoting efficient and effective information access, processing, and use by people and organisations.

1.7.2 Information management practices

Information is managed by employing a series of steps, otherwise known as processes and procedures, to attain a consistent and accurate flow of information, thereby facilitating access and use (McLeod & Schell, 2019). These processes and procedures are known as practices. Information management practices make information readily available and accessible to all employees and other stakeholders. McLeod and Schell (2019) define information management practices as the activities, processes and strategies employed by organisations to effectively and efficiently handle information throughout its lifecycle. These practices are implemented to enhance information security, collaboration, productivity, risk reduction and compliance with regulatory measures (Malak, 2023).

1.7.3 Electronic health records (EHR)

Storage of patient data is imperative and foundational to the operations of information management sections. Software such as Electronic Health Records (EHR) are used to facilitate the electronic storage of patient data in hospitals. The healthcare sector capitalises on the advent of electronic collection and storage tools due to their advanced benefits such as usability and searchability. EHR refers to a digital version of a patient's medical records that are securely stored and accessible electronically (Häyrinen, Saranto & Nykänen, 2020). It contains comprehensive information about an individual's medical history, including diagnoses, medications and treatments.

1.7.4 Information officer

The processes and procedures implemented to manage information are overseen by individuals working within information management departments. Information management is fulfilled by individuals, or a group of individuals referred to as Information officer(s). The information officers are the individuals responsible for managing information, a key resource essential for prompting key reforms and enabling strategic decisions in organisations. According to Oganisjana and Grundspenkis (2019), an information officer is an individual responsible for managing and overseeing the IM practices within an organisation. They ensure that users have access to accurate and timely information by implementing and maintaining effective information systems and processes.

1.7.5 Academic hospital

Tertiary care hospitals are integrated with medical schools to foster care, research and teaching. An academic hospital is “a medical center where education, research and clinical care are combined to provide the best possible clinical care that uses cutting-edge technologies and resources” (Junior, De Almeida & Krieger 2019:235). Such hospitals are often characterised by their trilateral mission to attain high standards of clinical care, initiate clinical and laboratory research, and upskill health professionals (Edelman, Taylor, Ovseiko & Topp, 2017).

1.7.6 Information needs

According to McKnight (2020), information needs refer to the requirements for information that individuals should have to effectively perform their tasks and make informed decisions. Information needs differ depending on the context, such as the

nature of the tasks being performed and the specific role of a healthcare professional in a hospital (Case & Given, 2016). According to Case and Given (2016), information needs start when an individual identifies an information gap in their knowledge that needs to be filled to achieve a specific goal. Understanding information needs is crucial for ensuring that the right information is available to the right people at the right time.

1.7.7 Information management tools

Support of a technical or technological infrastructure is required for information management activities to take place in any organisation. Information management tools include hardware and software used to capture, store, retrieve, process and transmit data. These information management tools are essential in an organisation to facilitate and expedite the creation, organisation, sharing, storing, distribution, and access of information in a cost-effective and user-friendly manner. The term "Information management tools" encompasses tools such as transaction processing system, executive information system, EHR, decision support systems and content management, and describes technological devices that are utilised in handling activities concerning the management of information (Landoy, Popa & Repanovici, 2020).

1.8 ORGANISATION OF THE STUDY

Chapter One: Introduction and Background of the Study

This chapter covers the introduction and background of the study, research problem, and purpose of the study, research objectives, significance of the study, the scope of the study, and definitions of key concepts.

Chapter Two: Literature Review and Theoretical Framework

This chapter presents the theoretical framework underpinning and focuses on exploring both classical and current research related to the topic.

Chapter Three: Research Methodology

This chapter presents the methodology used in the study for the purpose of collecting data. It covers the research paradigm, approach, design, population, sampling,

sampling techniques, validity and reliability, study area, data collection instruments, data collection procedure, data analysis and ethical considerations.

Chapter Four: Data Analysis

This chapter presents the data analyses and discussion of the findings. The findings are discussed and linked to existing literature and objectives of the study.

Chapter Five: Summary of the Main Findings, Conclusions, and Recommendations

This chapter summarises the key findings of the study with regards to the five research objectives. Additionally, the chapter draws conclusions and makes recommendations based on the findings of the study. Again, this chapter offered areas for further research and discusses the limitations of the study.

1.9 CHAPTER SUMMARY

This chapter provides the background and motivation of the study. It also outlines the research problem, aim and objectives, significance, and scope of the study. The chapter also presents the definitions of key concepts of the study. The next chapter discusses the theoretical framework and literature review relating to information management.

CHAPTER TWO

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

2.1 INTRODUCTION

The preceding chapter has given the introduction to the study. This chapter presents a theoretical framework as well as a review of the literature for the study. In this chapter, the researcher reviews the literature related to IM among information officers in hospitals. A literature review is a critical analysis and synthesis of existing scholarly literature on a particular topic (Creswell, 2014). It involves systematically examining and evaluating a range of published works, such as research articles, books, dissertations, conference papers, and other relevant sources (Brown, 2018). According to Kumar (2011), a literature review includes displaying awareness of a body of knowledge and establishing credibility. It informs the reader that the researcher is familiar with the research in an area and is familiar with the major issues. It further includes learning from others and encouraging new ideas. The researcher begins by discussing the theory that underpins the study, followed by literature review with themes aligned with the research objectives.

2.2 THEORETICAL FRAMEWORK

Bryman and Bell (2011) view theory as observed realities, or what we see and accept around us. This analogy suggests that theory can be practical or abstract. Theory does much more than simply abstracting and organising knowledge. The Academy of Management Review Organisation (2015:1) notes that “theory also signals the values upon which knowledge is built”. The role of theory in research is to provide a credible common principle or body of general acceptable principles put forward to elucidate a phenomenon. In a more philosophical context, what is anticipated from theory is a model competent in forecasting events that are still to happen, or surveillance being tried through examination, or otherwise confirmed through experiential observation (Kawulich, 2009). The theoretical framework involves theories expressed by experts in the field in which one can plan to do research, which one can use as a source to

provide a theoretical coat hanger for data analysis and expansion of results (Kivunja, 2018). In this study, theory assisted the researcher in assessing scientific findings in relation to the theoretical perspective from which they derive and to which they may contribute (Giles & Harrison, 2023). The study adopted a Process Model of Information Management.

The Process Model of IM was established by Choo (1995) to process the lifecycle stages that information goes through from formation, creation to organisation for easy access, subsequently its accessibility, availability and preservation. The process model portrays IM as a non-stop constant route of six interconnected actions: identification of information needs; information acquisition; information organisation and storage; information products and services; information distribution; and information use (Choo, 1995).

In the study, the Process Model guided the researcher in comprehensively examining and probing the steps, activities and relationships involved in the IM process at Mankweng Public Hospital. It provided a drone view of the people, systems, applications and processes involved in IM, and served as a roadmap for understanding the current practices and identifying potential areas for improvement or inefficiencies within the hospital's IMS. By applying the Process Model, the researcher systematically assessed how information is collected at the hospital, including the sources, methods and tools utilised. The model aided in analysing the data entry process, including the accuracy, completeness and timeliness of data input. By applying the model, the researcher looked to optimise processes, create consistency, set expectations, reduce redundancies, increase accountability, visualise steps and identify dependencies.

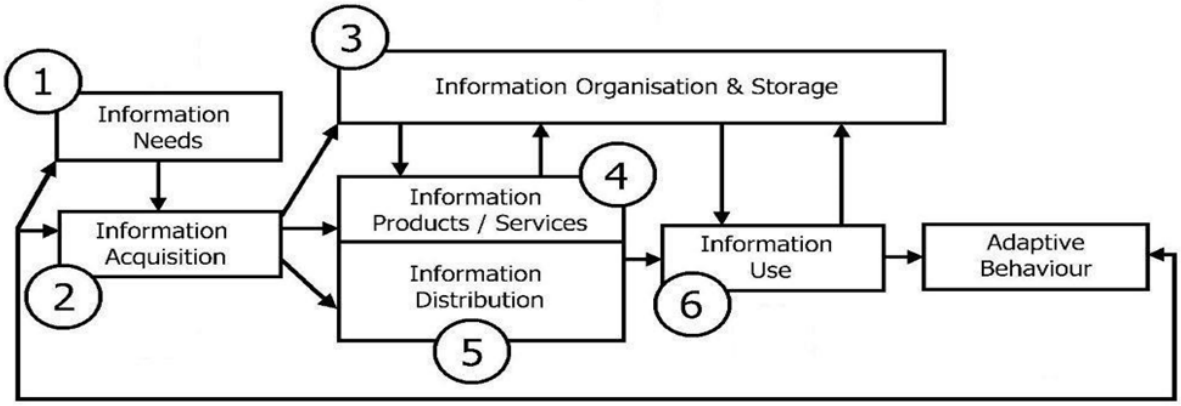

Figure 2.1: Process Model of IM (Choo, 1995)

The process begins at the right-hand end of the cycle with “adaptive behaviour”. The generation of new information results in the organisation's behaviour to adapt and looking for efficient ways to meet the vast demands of the changing situation (Harris, 2018). The organisation's adaptive behaviour with the inception of new information ushers in a new route of decision-making, and an actionable movement is taken that directly affects the outcome. Choo (1995) claims that the process is a series of actions taken with information sequentially to achieve a specific outcome. Below is a discussion of the stages of the Process Model of IM.

2.2.1 Identification of information needs

In the step of attempting to identify information needs, the demand for information emanates when workers search for appropriate information as a means to accumulate knowledge and acumen in the situation or need information pertaining to a specific task (Choo, 1995). The information required by these workers will then assist them in decision-making or problem-solving. The identification of information needs has to start with and aligns with organisational strategy and goals (Harris, 2018). Key users, which are health professionals in this study, have to be identified, and the type of information they need, as well as their key areas of interest, established. Choo (1995) states that a precise explanation of information requirements is essential for effective IM. User information behaviour and preferences have to be identified and clearly understood. In the context of this study, the IM section at Mankweng Public Hospital

familiarises itself with the information needs of the source points, which are the wards. The section plans ward visits with the operational managers of all the wards. During these ward visits, operational managers inform the information officers of the kind of information they need, and the changes and developments in their wards as prescribed by the Department of Health, so that the IM section can provide information in line with those changes and developments. In turn, the information officers inform the operational managers of the format and mode in which they need information from doctors and nurses, with them being key users (and creators) of information in hospitals.

2.2.2 Information acquisition

Information acquisition is guided by information needs, and has become a pivotal function in IM. However, it has also become a complex function in IM and has two opposing demands. On the one hand, the organisation's information needs are diverse, far-reaching and inclusive. On the other hand, there are limitations to human attention and ability to process things. Information acquisition aims to strike an equilibrium between these two opposing demands (Harris, 2018). Choo (1995) alludes that the number of sources employed to keep track of the environment should be adequately diverse and assorted to reflect the extent and sweep of the organisation's interests. One dominant method of managing information variety in organisations is to involve as many people as possible in assembling information, productively generating, and fabricating an organisation-wide information collection network (Gupta & Sharma, 2018). Contextualising this to the current study, the IM section at Mankweng Hospital involves wards and all the other administrative sections in managing information variety to create a powerful information collection associate. During the first week of every month, the wards and all the administrative sections submit information to the IM section detailing their monthly operations and functions. Information acquisition steers the information audit process, information gap analysis, and information collection plan.

2.2.3 Information organisation and storage

With information organisation and storage comes the need for information technology. The organisation and storage of information are mainly concerned with the formulation

of an organisational recollection through the establishment of a depository to store information (Kaur & Kaur, 2021). The primary aim of organising and storing information is to allow for swift retrieval in the future when it is needed (Bartleby, 2022). According to Choo (1995), information technology (IT) provides a platform to aid this step during the information life cycle process. Electronic storage systems are designed to assist employees in accessing information in the necessary format, having the right information at the right time, having appropriate information before making decisions, and the right information that can be used to respond to queries. Onwuchekwa (2012) postulates that electronic databases provide multiple functions such as holding executive data, a compilation of images, or unprocessed numerical data. These databases can also house the actual information resource of interest, making it easy to organise and retrieve information. In the context of the current study, information is organised and stored manually and electronically on separate Microsoft Excel workbooks, with the section working mostly with numbers. Microsoft Excel workbooks are heavily used to store and organise information. Midnight statistics collected from wards, disease profiles, mortality statistics, patient medical diagnoses, patient treatments and patient medications are stored and organised in Microsoft Excel workbooks.

2.2.4 Information products and services

In this step, the refined information gives employees within the organisation an opportunity to access the right information before making decisions. The primary function of information products and services is to disseminate information that is reliable and applicable to users' key areas of interest and specialty (Kaur & Kaur, 2021). Information products and services should provide information in a form that enhances the advantage of usability. The information should be in a form that is easy to use. According to Choo (1995), information products and services must bear and distribute information so that their informational capacity, layout, and other facets address the situational requirements that impact the settlement of the problem. In hospitals, information products and services differ and offer different informational content and attributes as per the ward speciality and needs. Information products and services should provide applicable information, add value by intensifying the calibre, and satisfy the vast facets of users' information needs.

2.2.5 Information distribution

The primary goal of information distribution is to cultivate the habit of information-sharing (McLeod, 2019). Information-sharing in an organisation creates widespread knowledge of problems and situations. Choo (1995) postulates that information distribution makes the reclamation of appropriate information more probable and allows new perceptions to be created by relating various items of information. In the context of the current study, information is predominantly distributed using the vehicle of email and briefings. Choo (1995) asserts that the carriage of information should be conveyed through modes that align well with users' work habits and liking of the users.

2.2.6 Information use

Choo (1995) argues that it is a unique process of inquiry that can lead to the establishment of meaning or the making of a decision. The primary goal of IM is to harness information, making it easy to use. For example, if or when a hospital is being investigated for irregularities by the Department of Health, doctors and nurses use information obtained from the IM section to provide reasons for deviations. The different wards and administrative sections in hospitals use information for the running of day-to-day operations and research purposes. Detlor (2010) holds the view that information use is the process where information sources are utilised by people to create beneficial knowledge as intake to make decisions.

The Process Model of IM was adopted because it provides a structured and systematic approach to managing information. It emphasises the importance of considering information as a valuable organisational resource that flows through various stages or processes. By adopting this model, the researcher can identify and map out the different stages involved in the IM practices, ensuring a clear understanding of how information is created, captured, stored, processed and disseminated within the organisation. Additionally, this model depicts and focuses on the lifecycle stages that information goes through. The model is very detailed, illustrating the stages necessary for proper IM. The model looks deeply into information as a whole. Moreover, the model clearly illustrates that no stage within the lifecycle of information is operationally independent. For IM to be effective, IM requires six stages that must be made to

interlink and harness the appropriate information. The model advocates for the establishment of information needs (with it being the primary stage), meaning that individuals responsible for information provision must know the information needs of information users. Furthermore, the model highlights the pivotality of investment in technology. IM practices are technology-driven. As such, the necessary hardware and software that will help in providing information must be procured. IM can assist an organisation to establish a reputable institutional memory it can utilise for strategic planning and for making crucial strategic decisions (Indeed Editorial Team, 2020). Again, this model goes as far as proposing that the carriage of information used should be compatible with the working habits of the user, implying that the vehicle used to send information should make receiving, accessing and use of that information easy for the user.

2.3 LITERATURE REVIEW

For the purpose of reviewing literature in this study, the researcher relied on online repositories, academic online databases such as EBSCOhost and JSTOR, and some experts in the field of information and knowledge management. All sources cited were referenced under a list of references. The researcher discussed the literature review according to the research objectives and the adopted theory.

2.3.1 Awareness of information officers on users' information needs

In today's information age, the role of information officers in meeting users' information needs is crucial. Understanding the level of awareness among information officers regarding users' information needs is vital for effective IM. IM is practiced in hospitals so that the information needs of users can be satisfied. Users of information in hospitals are mainly doctors and nurses, as well as other health professionals. Therefore, information officers should be aware of their information needs. A study by Almutairi and Alhajri (2021) found that information officers in Saudi Arabia were aware of users' information needs but faced challenges in meeting their needs due to limited resources and a lack of training. Bawack and Kamdoum (2019) and Hess, Grudzen, Thomson, Raja and Carpenter (2015) studied the information needs of health

professionals, and argued that information officers are unaware and fail to understand that the information needs of health professionals emanate from multiple factors, such as the need to provide patient care, patient enlightenment, specialised interest and research. Similarly, Pakenham-Walsh and Bukachi (2009) conducted a study on the information needs of healthcare workers in developing countries. The study focused on Africa. The findings posit that healthcare personnel in developing countries have inadequate access to essential, enabling information that will assist them in rendering safe operative care. This is due to the discord between information officers and healthcare workers.

There are various studies that have been conducted locally, regionally and internationally for information officers in health organisations to become aware of their users' information needs. In the international context, Scott, Albrecht, Given, Hartling, Johnson, Jabbour and Klassen (2013) examined paediatric information-seeking behaviour, information needs and information preferences of healthcare professionals in general emergency departments in Canada. Findings suggested that information officers need to be aware of additional paediatric clinical information in relation to multisystem trauma, severe head injury and meningitis. This is because information officers should know what information healthcare professionals need to provide relevant information and on time. Likewise, Scherrer and Dorsch (2014) conducted a study in the United States that examined the professional roles of hospital librarians. The study highlighted the importance of information officers in hospitals and the need for them to be aware of healthcare professionals' information needs to provide valuable support to healthcare professionals and patients.

Regionally, most studies show that the information needs of health information users are ignored. Additionally, Macha and Maassen (2013) examined the information needs and sources of HIV/AIDS researchers in East Africa. The study highlighted the importance of understanding the specific information requirements of researchers in specialised fields. Information officers should be aware of these needs to facilitate effective information provision. Nwagu and Oshiname (2009) delved into the information needs and seeking behaviour of nurses at the University College Hospital, Ibadan, Nigeria. The findings revealed that nurses reported a lack of access to

information as a major deterrent to providing adequate patient care. It was suggested that the establishment of an information centre with dedicated information officers who will attend to their information needs could help remedy the situation.

In terms of hospitals, De Groote, Doranski and Edwards (2012) explored the role of clinical medical librarians in an academic health sciences centre. They emphasised the critical role of information officers in hospitals, collaborating with healthcare professionals to meet their information needs and enhance clinical decision-making. This clearly means that it is vital for information officers to understand the needs of the users. By understanding and meeting users' information needs effectively, information officers can contribute to improved decision-making, enhanced healthcare outcomes, and better service provision in diverse settings.

2.3.2 Perceptions of information officers towards IM

Information officers in hospitals may have different perceptions about IM. Improved IM incurs advantages that lead to improved service provision. Several studies have examined the perceptions of information officers towards IM. For example, a study by Al-Khatib, Al-Lawati and Al-Muqbali (2021) in Jordan found that information officers perceived IM as important for organisational success. However, they also reported challenges in implementing IM, such as a lack of resources and staff training. Studies have shown that information officers play a pivotal role in shaping IM strategies and practices (McLeod & Childs, 2019; Wang & Hu, 2020). This perspective highlights the importance of aligning IM with organisational goals, promoting collaboration and knowledge-sharing, ensuring data security, and utilising emerging technologies such as artificial intelligence and big data analytics (Wang & Hu, 2020).

Musa, Aina and Opeyemi (2020) researched the perceptions of health IM professionals on the significance and role of computer systems in health IM in Nigerian hospitals. The findings suggest that the majority of health IM professionals coincide and acknowledge that computer science is to be seen as a higher priority in health IM because it was understood to play an important role in adequate clinical documentation and the management of patient care. Okonkwo, Nwokedi and Obianuju (2022) investigated the attitudes and perceptions of health IM professionals on the

conversion from old paper-based patient information to electronic medical record systems in Nigeria. The findings indicate that the attitudes and perceptions of participants were greatly positive, which then led to them totally acknowledging and recognising electronic medical records systems. Most health information professionals are aware of the technological advancements brought about by new technologies in the health sector. They also acknowledge the importance of these technologies, and the developments brought about by these technologies. Those with negative perceptions need to learn about new curricula and familiarise themselves with new technologies to expand their knowledge.

In East Africa, Bwogi and Byamugisha (2018) and Kinyua and Ocholla (2020) revealed that perceptions of information officers towards IM reflect the region's diverse socio-economic contexts. These studies revealed the challenges faced by information officers in areas such as limited resources, inadequate infrastructure, and skill gaps. In West Africa, information officers face similar challenges in managing information, including issues related to limited resources, inadequate infrastructure, and organisational culture (Oduwole & Adio, 2020; Orji & Ukwoma, 2019). These studies emphasised the need for training to ensure that information officers have a positive attitude towards IM to enhance IM practices.

In South Africa, Van Vuuren and Van der Walt (2021) found that information officers believed IM was critical for achieving organisational objectives. Moreover, Botha and Herselman (2019) and Phiri and Ngulube (2020) conducted studies on IM in South Africa and found that the perception of information officers towards IM reflects the country's unique challenges and opportunities. Studies emphasised the role of information officers in promoting access to information, addressing information asymmetry, and supporting evidence-based decision-making.

At the hospital level, perceptions of information officers highlight the unique challenges they face related to managing healthcare information (Jensen & Slaughter, 2019; Van der Velden, Van den Bemt & Bemelman, 2020). Studies emphasised the importance of information governance, privacy and security in healthcare settings. The role of

information officers extends to ensuring compliance with regulations, facilitating interoperability between systems, and promoting the use of electronic health records. The perception of information officers towards IM in hospitals varies based on their individual experiences and roles within the healthcare organisation. Organisations should support information officers with training so that they can have a positive perception towards IM which is the core of every organisation for better IM practices.

2.3.3 IM tools used by information officers

IM plays a crucial role in organisations across various sectors, including healthcare, business, education, and government. Information officers are responsible for effectively managing and utilising information resources within their organisations. This then calls for the implementation of relevant tools required for IM. IM tools are being secured and used by various organisations with the realisation of the benefits incurred by information that is properly managed. Information officers rely on technological devices such as computers, laptops, and scanners for proper IM (Croll, 2020).

Scott-Clark Medical (2022) conducted a study on the types of IM tools used in healthcare facilities. Amongst many other revelations in the study, they revealed that hospitals are now using a medical cart with a computer. This cart moves between wards, and stores the information required for report writing by information officers and aids the hospital to operate within the confinements of the law. This can be useful in hospitals such as Mankweng Public Hospital, where information officers have to go to the wards to manually collect data from time to time and to collate it for report writing purposes, which is then submitted to the district. The process is long and strenuous.

A study conducted by Croll (2020) in America states that information officers utilise a range of tools to manage information effectively. Some of the commonly employed tools include customer relationship management (CRM) systems, document management systems (DMS) and data analytics platforms (Croll, 2020). These tools enable information officers to collect, organise and analyse data. The RacGP Foundation (2022) examined the impact of digital equipment in hospitals. The study

found that email provides real-time instant communication and is one of the most prevalent and convenient forms of information-sharing. IM departments often receive requests for information through email from other departments.

In the context of Europe, Selberg and Nilsson (2019) state that information officers employ a diverse set of tools to manage information. They highlighted the prevalence of digital asset management (DAM) systems and knowledge management systems (KMS) in European organisations. In East Africa, information officers face unique challenges due to the region's socio-economic conditions and technological infrastructure. A study by Wamalwa, Nyakondo and Kemei (2021) emphasised the adoption of open-source tools such as OpenMRS (Open Medical Record System) for managing healthcare information in East Africa. These tools enable the collection, storage and retrieval of patient data, supporting healthcare professionals in delivering effective care.

In South Africa, information officers leverage a combination of tools to address the unique requirements of the local context. A study by Molwane, Mearns and Moolla (2020) emphasised the adoption of enterprise resource planning (ERP) systems, which integrate various organisational processes, including IM. Additionally, knowledge management systems such as Microsoft SharePoint are utilised to facilitate knowledge-sharing and collaboration within organisations (Pule & Van Niekerk, 2020).

In hospitals, IM tools are specifically tailored to address the complex and sensitive nature of healthcare data. Electronic health record (EHR) systems are widely implemented to capture, store and exchange patient information across different departments (Häyrinen, Saranto & Nykänen, 2020). Picture archiving and communication systems (PACS) are also employed for the efficient management of medical images, while clinical decision support systems (CDSS) assist healthcare professionals in making evidence-based decisions (Wen, Liu, Ma, Huang, Liu & Peng, 2019).

Information officers worldwide utilise a range of tools to manage information effectively within their respective contexts. Understanding the landscape of IM tools can assist information officers in making informed decisions regarding tool selection and implementation, considering the specific needs and challenges of their organisations and contexts.

2.3.4 Factors affecting the application of IM in organisations

IM plays a crucial role in the success and efficiency of organisations in today's digital age. It involves the collection, storage, processing and dissemination of information to support decision-making and enhance organisational performance. However, the effective application of IM systems and practices can be influenced by various factors, including cultural, technological, organisational and individual factors (Geldenhuys, 2020). The size of the organisation is also one key aspect to consider when implementing an IM strategy.

Bessick (2016) researched factors influencing effective IM using information technology systems in a public sector department. The findings reveal that factors such as IM, change management and communication strategies, culture, roles of responsibility for information, information lifecycle process, and IM policy would impact the successful implementation of an IM initiative in a public sector department. Chowdhury and Salahuddin (2017) reviewed factors influencing the implementation of IMS in organisations. The review revealed that three factors are critical in the successful execution of IMS. These are organisation, automation and governance factors. In America, Ragu-Nathan, Tarafdar, Ragu-Nathan and Tu (2008) revealed that cultural factors significantly influence the application of IM practices in organisations. Moreover, Duan, Zhu, Wu, Li and Huang (2018) state that the level of technological infrastructure and innovation impacts IM practices globally. Developed countries tend to have more advanced technological capabilities, facilitating the implementation of sophisticated information systems. Similarly, Mancini (2010) studied factors to consider when developing an IM strategy. The study showed that people, process and technology are critical components to be considered when developing an IM strategy. Likewise, Chaffey and White (2010) state that organisational factors such as structure,

strategy and leadership play a vital role in IM. Organisations that prioritise IM as a strategic asset tend to have better information systems and practices.

In East Africa, factors such as limited technological infrastructure, inadequate resources and low digital literacy hinder the effective application of IM practices (Masao, Kaaya, Msonganzila & Mutagahywa, 2018). However, initiatives like mobile technology and e-government services have shown promising developments in improving IM in the region (Mutula, 2009). West Africa faces similar challenges regarding infrastructure and resources, which impact IM implementation (Ogunlade & Oyeniran, 2016). The region has made progress in e-governance and information systems in sectors like healthcare and agriculture (Achampong, Boateng & Bekoe, 2018). However, more efforts are needed to address the factors limiting IM practices.

In the context of South Africa, factors affecting IM are shaped by socio-economic disparities, infrastructure challenges and a digital divide socio-economic disparity (Marais & Labuschagne, 2017). South Africa faces significant socio-economic disparities that impact the application of IM in organisations. Limited access to technology and information resources among marginalised communities hinder their participation in the digital economy (Dada, 2018). Addressing these disparities through initiatives like digital inclusion programmes can contribute to more effective IM practices (Mathebula & Dube, 2016).

With regard to hospitals, organisational culture and leadership can influence the application of IM practices. A culture that values information-sharing, collaboration and continuous learning fosters effective IM (Hoque, 2019). Supportive leadership promotes the adoption of IM systems and facilitates their integration into hospital processes (Li & Yu, 2015). Hospitals handle sensitive patient information, making information security and privacy critical factors in IM. Ensuring data confidentiality, integrity, and availability requires robust information security measures and compliance with privacy regulations (Sawyer, Mandel, Hefner & Chiang, 2018). Factors like cybersecurity awareness, staff training and data governance contribute to effective IM in hospitals (Li, Liu, Zhang & Liu, 2021). Moreover, the integration of

various information systems and technologies within hospitals is crucial for seamless IM. Interoperability challenges such as incompatible systems and data silos can hinder effective information-sharing and decision-making (Dong, May & Brown, 2018). Overcoming these challenges requires standardised data formats, interoperability frameworks, and collaborative efforts among healthcare stakeholders (Zeng, Reynolds, Sharp & Qian, 2020).

The literature depicts a clear image that the application of IM in organisations is dominantly affected and influenced by three key factors, namely, management, technological and social factors. There are other factors affecting the application of IM, but the researcher is of the view that all these other factors can be classified under the three key factors. Understanding and addressing these factors can contribute to the successful implementation and utilisation of IM systems in organisations, ultimately enhancing their performance and decision-making capabilities.

2.3.5 IM strategies that can be implemented in hospitals

Effective IM strategies are crucial for organisations to enhance their competitiveness, make informed decisions, and adapt to the rapidly changing business environment. To optimise IM in hospitals, various strategies have been proposed and implemented based on best practices and emerging technologies. One IM strategy that has gained widespread acceptance in hospitals is electronic health records (EHRs). EHRs are digital records of patients' medical history, diagnoses and treatments, which can be accessed and shared by authorised healthcare providers. EHRs have been shown to improve patient safety, reduce medical errors, and enhance care coordination among providers (McGonigle & Mastrian, 2018).

Kroenke (2017) states that organisations can use Enterprise Information Management (EIM) which is a comprehensive approach that integrates various aspects of IM, including data governance, content management, business intelligence and analytics. EIM frameworks enable organisations to harness the value of their information assets, enhance decision-making processes, and facilitate collaboration. Additionally, Dalkir (2017) revealed that knowledge management can also be used as a strategy for proper knowledge management, which encompasses strategies and practices aimed

at capturing, organising and sharing organisational knowledge. It involves the creation of knowledge repositories, communities of practice, and the implementation of knowledge-sharing platforms to facilitate the exchange of tacit and explicit knowledge within the organisation (Dalkir, 2017; Alavi & Leidner, 2001).

Another IM strategy that has been increasingly adopted in hospitals is data analytics, which involves collecting, processing and analysing large volumes of healthcare data to identify patterns, trends and insights that can inform decision-making and improve care outcomes. Data analytics can be used for various purposes, such as predicting patient readmissions and improving resource allocation (Shah, Rajasekaran & Lee, 2021). Similarly, in the American context, organisations are increasingly leveraging big data analytics to extract valuable insights from large datasets. Big data analytics involves the use of advanced analytical techniques, such as machine learning and natural language processing to identify patterns, trends and correlations that can inform decision-making and drive organisational performance (Davenport & Patil, 2012).

Moreover, an IM strategy that has emerged in recent years is artificial intelligence (AI), which involves using machine learning algorithms and natural language processing to automate tasks, make predictions, and generate insights from healthcare data. AI can be applied to various use cases in hospitals, such as image analysis, clinical decision support and patient triage (Nguyen, Drew, Graham, Joshi, Guo, Ma & Chan, 2021). In addition to these strategies, other IM approaches that have been proposed for hospitals include knowledge management, social media and telemedicine (Stamenova, Kudryavtsev & Encheva, 2020). These strategies have varying benefits and challenges, depending on the organisational context and the stakeholders involved. To successfully implement IM strategies in hospitals, several key success factors such as staff engagement need to be taken into account.

In Europe, Laudon and Laudon (2020) recommended information governance, which refers to the strategic management of information assets, encompassing policies, procedures, and controls to ensure the quality, security and compliance of data.

European organisations emphasise the importance of data protection and privacy regulations, such as the General Data Protection Regulation (GDPR) in their information governance strategies (Laudon & Laudon, 2020). Furthermore, European countries have embraced open data initiatives to foster transparency, innovation and economic growth. By making certain datasets publicly available, organisations and individuals can leverage this information to create value-added services and gain insights for decision-making (Mergel, Edelmann, Haug & Savić, 2018).

In South Africa, digital transformation has gained significant attention as organisations strive to leverage digital technologies to improve their operations and services. This includes the adoption of cloud computing, data analytics and automation to enhance efficiency and innovation (Mafafo & Eloff, 2020). Moreover, given the increasing cybersecurity threats, South African organisations have recognised the importance of robust information security strategies. These strategies involve implementing security controls, conducting risk assessments, and ensuring compliance with relevant regulations to protect valuable organisational information (Whitman & Mattord, 2016).

At the hospital level, the implementation of electronic health records has revolutionised IM in healthcare organisations. EHR systems allow for the digital collection, storage, and sharing of patient information, enhancing the efficiency of healthcare delivery, reducing errors, and improving patient outcomes (Adler-Milstein & Jha, 2017). Furthermore, Health Information Exchange (HIE) has been recommended as a strategy for proper IM because it facilitates the secure sharing of patient data across different healthcare providers (Vest, Kern & Silver, 2012).

2.4 CHAPTER SUMMARY

This chapter paid attention to the theory and literature review related to IM in hospitals. It begins with the theoretical framework underpinning the study. What has been discussed is awareness of information officers on users' information needs, perceptions of information officers towards IM, IM tools used by information officers, factors affecting the application of IM in organisations and IM strategies that can be implemented in hospitals. The next chapter will discuss the research methodology that guided this study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

The previous chapter discussed the literature review and theoretical framework. This chapter discusses the research methodology that guided the current study. Igwenagu (2016) defines methodology as a collection of systematic methods used by researchers for the purpose of data collection and analysis. This indicates that research methodology is the roadmap that provides a theoretical foundation for determining best practices that can be used to collect and analyse data. It covers the methods of research followed when conducting the study. To address the research methodology of this study, the researcher discusses in detail the research paradigm, research approach, research design, population and sampling, data collection, data collection procedure, data analysis, quality criteria, and ethical considerations.

3.2 RESEARCH PARADIGM

The paradigm concept can be traced to Kuhn (1962), and it signifies a recognised pattern as a foundation for a philosophical way of thinking (Kuhn, 1970). Simply put, a research paradigm is “an approach to thinking about and doing research” (Johnson & Christensen, 2014:79). Research paradigms that encompass research are “positivism, interpretivism, the critical paradigm, and the pragmatic paradigm” (Bertram & Christensen, 2014:22).

3.2.1 Positivist paradigm

Positivism was the predominant worldview for research and the leading scientific paradigm until the mid-20th century. It holds that “science or extending knowledge should be limited to what can be experimented, observed, and investigated” (Bhattacherjee, 2012:18). The positivist paradigm leans on evidence and reason that knowledge is affirmed from autonomous and measurable observation of activity, action or reaction (Leedy & Ormrod, 2015). Positivists believe that researchers only need

appropriate data gathering tools to generate absolute truth for a given inquiry (Creswell & Creswell, 2018; Bogdan & Biklen, 2003). The positivist paradigm is traditionally associated with the quantitative approach, and is stringent in nature.

3.2.2 Interpretivist paradigm

According to Creswell and Creswell (2018), the interpretivist paradigm seeks to comprehend individuals. Mathews and Ross (2010:476) argue that “interpretivism represents an epistemological stance that gives precedence to respondents' subjective interpretations and understandings of social phenomena as well as their own actions." Interpretivists assert that reality is subjective and varies for each person. They argue that the primary goal of social research is to grasp the significance that informs human behaviour. Researchers subscribing to interpretivism typically employ the qualitative methodology (Creswell & Poth, 2018).

3.2.3 Critical theory paradigm

The critical theory paradigm bases its research premise on social justice issues (Kivunja & Kuyini, 2017). At its core, the paradigm is focused on political, social and economic issues, and suggests that social science can never be truly objective or value-free (Asghar, 2013). Furthermore, this stance operates from the perspective that scientific investigation should be pursued with the explicit purpose of social change in mind (Kivunja & Kuyini, 2017).

3.2.4 Pragmatic Paradigm

The paradigm originated among philosophers who argued that it was impractical to access the “truth” about the real world through a single scientific method, as championed by the positivist paradigm. Nor was it possible to resolve social reality, as advocated by the interpretivist paradigm (Kivunja & Kuyini, 2017). According to Gobo (2023:10), pragmatism as a viewpoint or paradigm “is not committed to any one system of philosophy and reality, but arises out of the methods deemed appropriate

for studying the phenomenon at hand." Pragmatism, as a research paradigm, acknowledges that there can be one or several realities open to empirical inquiry (Kaushik & Walsh, 2019), and relies on the idea of what works rather than assumptions about the nature of knowledge (Heba, 2019). Kivunja and Kuyini (2017) posit that pragmatism gave rise to research approaches that could be more practical and pluralistic, allowing a combination of methods.

3.2.5 Choice of research paradigm

The study adopted the interpretivist paradigm, which allowed the researcher to discern the matter in question through various perceptions and involvement to establish penetration and detailed information or truth (Thanh & Thanh, 2015). Interpretivists hold the belief that there are no lone facts or legitimacies about the social world. Instead, there is an array of facts or truths that are attested, local, explicit, and non-generic (Walsh, 2019). The interpretivist paradigm was used because the researcher wanted to establish a rich and deep understanding of the research phenomenon. Moreover, it allowed the researcher to cite the world through several concepts and background of participants to get in-depth understanding and thorough information or truth.

3.3 RESEARCH APPROACH

A research approach is a strategy and procedure that includes broad assumptions to detailed methods of data collection, analysis and interpretation (Creswell, 2014). According to Creswell and Poth (2018), there are three approaches to research, namely, quantitative, qualitative, and mixed-methods research approaches. It is therefore important that these approaches are given a short description in this study.

3.3.1 Quantitative research approach

Gobo (2023) states that quantitative research involves collecting and analysing numerical data. Put more simply, quantitative research collects data in the form of

numbers for the purpose of quantification and comparison. Furthermore, Babbie (2010) explains that the quantitative research approach encompasses objective measurements and the arithmetical, mathematical, or numerical analysis of data gathered through polls, questionnaires and surveys, or by influencing data that already exists to draw inferences.

3.3.2 Qualitative research approach

In contrast to a quantitative research approach, the qualitative research approach produces non-numerical and non-objective data that can be used to gain insights into people's feelings and thought processes (Suton, 2015). It is a research approach that traverses a phenomenon in its natural setting, which includes how people view aspects of their lives, how individuals behave and interact with one another, and how interactions shape relationships (Creswell & Poth, 2018; Teherani, Martimianakis, Stenfors-Hayes, Wadhwa & Varpio, 2015). Likewise, Johnson and Christensen (2014) allude that qualitative researchers often maintain the belief that human behaviour is easy flowing, and frequently evolving over time and place, with disinterest in applying the findings beyond the specific people who are studied. It provides esteemed insights that are data-driven for empirical decision-making using interviews, observation and focus groups (Bester, 2023).

3.3.3 Mixed-methods research approach

With the adoption of a mixed-methods approach, researchers can produce a deepened understanding of the research phenomenon (Maree, 2017). A mixed-methods research design involves collecting, interrogating, analysing and "mixing" both quantitative and qualitative research methods to produce a thorough understanding of a research problem (Creswell, 2014). Schoonenboom and Johnson (2017) and Kumar (2014:28) posit that a "mixed-methods approach combines qualitative and quantitative components to generate an understanding of a study." Furthermore, Leedy and Ormrod (2015:330) explain that "a researcher can address a research problem and its subproblem in their entirety only by collecting, analysing, and interpreting both qualitative and quantitative data".

3.3.4 Choice of research approach

The current study employed a qualitative research approach. Busetto, Wick and Gumbinger (2020) describe the qualitative research approach as the study of the nature of phenomena, including their quality, different manifestations, the context in which they appear, or the perspectives from which they can be perceived. Simply put, the qualitative research approach generates data in the form of expressions rather than numerical data, and helps to understand participants' experiences, perceptions and behaviour (Creswell & Creswell, 2017; Tenny, Brannan & Sharts-Hokpo, 2017). In line with Carol's (2016) suggestion, the researcher employed the qualitative research approach to study the IM processes, procedures and the IM officers at Mankweng Public Hospital. In line with Given's (2016) explanation, this approach enabled the researcher to provide abundant explanations of intricate phenomena, showcase the experience and interpretation of events and track unique or unexpected events.

3.4 RESEARCH DESIGN

According to Creswell and Creswell (2017), a research design serves as a blueprint for gathering and analysing data in a manner aligned with the research objectives. It outlines key components such as the target population, variables to be measured, sample selection method, data collection techniques, and data analysis strategy. According to Akhtar (2016), a research design is a scheme establishing the techniques and approaches for gathering and examining the required information. McCombes and Bhandari (2023) explain that a research design is the framework of research methods and techniques a researcher employs to conduct a study. Every research approach has its own research designs.

3.4.1 Quantitative research designs

The most common research designs in quantitative research methodologies are survey research design, descriptive research design, correlational research design,

experimental research design, and quasi experimental research design, which are explained below:

3.4.1.1 Survey research design

Croucher and Cronn-Mills (2021) define survey research as a design where data is primarily collected by survey. In this study design, researchers use surveys as a tool to generate and gain thorough understanding of individual or group perspectives pertaining to a particular concept or topic of interest. It is often used in social and psychological research and can employ quantitative (questionnaire) and qualitative (open-ended questions) research strategies to elucidate and probe human behaviour (Ponto, 2015). Similarly, Neuman (2014) holds that a survey is the most used Social Science data-gathering technique that is multifunctional and possesses a number of formations; internet opinion polls, interviews, and a range of questionnaire types for examining diverse data, such as people's preferences, beliefs, behaviours, attitudes and credible information.

3.4.1.2 Descriptive research design

According to McCombes (2023), descriptive research design intends to comprehensively describe the characteristics of a population, situation or phenomenon. Sirisilla (2023) mentions that descriptive research helps researchers gain a greater understanding of a particular issue and provides worthwhile information that can apprise future studies.

3.4.1.3 Correlational research design

A correlational research design examines the relationship between two (or more) variables without the researcher using their power to manipulate any of them (Bhandari, 2023). Correlational research reveals the strength or orientation of the relationship between two or more variables. Curtis, Comiskey and Dempsey (2016) posit that findings from correlational research can be used to assess superiority, common occurrences and relationships among variables and predict events from current data and knowledge. Furthermore, Maddox (2023) postulates that correlational

studies can act as flexible tools for researchers to explore the world and reveal hidden relationships.

3.4.1.4 Experimental research design

Experimental research conventionally emerged in educational psychology around the turn of the century, led by the classic studies of Thorndike and Woodworth on transfer involving implementing research objectively and orderly to achieve maximised accuracy and to draw specific inferences regarding a hypothesis statement (Bell, 2009). Sirisila (2023) states that experimental research is a scheme of systematic rules and procedures to carry out experimental research with a scientific approach by applying two sets of variables. Experimental research interrogates the relationship and interaction between independent and dependent variables, which can appraise a cause-and-effect relationship (Saigo & Roundy, 2023). Cobanoglu (2023) posits that experimental research is a rigid approach to research, and the important elements necessary for an authentic experimental study are definitive independent and dependent variables, a fixed and provable supposition, and random sampling.

3.4.1.5 Comparative/ Quasi-experimental research design

Quasi-experimental research seeks to uphold a cause-and-effect relationship between an independent and dependent variable (Thomas, 2023), and assesses the relationship between a mediator and a consequence using experiments in which the mediator is not randomly assigned (Schweizer, Braun & Milstone, 2016). It is a study based on experience used to estimate the consequential impact of an intervention on a target population without random assignment (Harris, McGregor, Perencevich, Furuno, Zhu, Peterson & Finkelstein, 2006).

3.4.2 Qualitative research designs

Qualitative research designs include grounded theory research design, ethnographic research design, phenomenological research design, case study research design,

narrative research design, and historical research design. Their features and characteristics follow.

3.4.2.1 Grounded theory research design

Grounded theory, based on the works of two American researchers, Barney Glaser and Anselm Strauss, dates back more than 50 years, and the aim of the theory was to highlight how the revelation of theory from data – methodically obtained and analysed in social research – can be progressed and fostered (Lambert, 2019; Creswell, 2014). Tie, Birks and Francis (2019) define grounded theory research as a methodology that makes an effort to unfold the meanings of people's interactions, social actions and experiences. It is a design that is entirely data-based, and does not attempt to derive theory from data (Khan, 2014). Similarly, Charmaz and Bryant (2020) postulate that grounded theory is a methodology that delves into individual and group interaction and experience to develop a theory rooted in data. Moreover, grounded theory helps researchers to traverse a phenomenon to unveil new theories that are foundational to the collection and analysis of physical world data (Cullen & Brennan, 2021; Leedy & Ormrod, 2015).

3.4.2.2 Ethnographic research design

According to Caulfield (2023), ethnographic research involves fully engaging oneself in a particular community or organisation to survey their behaviour and interactions in close proximity. The phrase "ethnography" indicates the written report of the research that the ethnographer subsequently generates (Coughlin, 2019). Cruz and Higginbottom (2019) state that in ethnographic research, the researcher purposefully puts oneself as a "participant observer" within the culture. The setting plays an imperative role in ethnographic studies as the probing and exploration of the people and their interactions ought to be within the context of that cultural situation. Furthermore, Leedy and Ormrod (2015), Hammerly and Atkinson (2007) and Fetterman (2010) hold that ethnographic research lay hold of a cultural lens to the study of people's behaviour and interaction inside their inhabitants. Data collection in ethnographic studies include interviews, extensive field observations, discourse and

dialogue, and the collection of formal pieces of writing or artifacts (Caulfield, 2023; Leedy & Ormrod, 2015).

3.4.2.3 Phenomenological research design

Phenomenology as a design involves structured steps in the data analysis procedures, acknowledging a phenomenon to be traversed, interviewing participants, drawing attention to general themes, and publishing work (Mckoy & Boyd, 2023). It is characterised by interviewing people in individual or focus group settings. The interviews are extensive in nature and take place over diverse preferences (Alhazmi & Kaufmann, 2022). The researcher interviews individuals with specific experiences and investigates how they experienced the same event (Creswell, 2013). Researchers who employ phenomenological research design believe that people use a generally accepted universal pattern or basis to make sense of their experiences (Creswell & Poth, 2018; Freeman & Vagle, 2013).

3.4.2.4 Case study research design

According to Crowe, Cresswell, Robertson, Huby, Avery and Sheikh (2011), a case study is a design used to generate an extensive, all-round understanding of an intricate issue in the context of its actual existence. McCombes (2023) postulates that a case study is an appropriate research design when a researcher wants to gain solid, substantive, and comprehensive knowledge about a particular real-world phenomenon. It is one of the most comprehensive and far-reaching strategies used in qualitative social research. In recent years, its application has grown in giant strides and is now being employed in several disciplines (Priya, 2020; Bertram & Christiansen, 2014). Crowe et al. (2011) elucidate that it is a design used to limit the scope of a very wide field of research into one easily researchable topic. Likewise, Cherry (2024) further points out that in a case study, almost every phase and feature of the subject's life and history is evaluated to solicit patterns and causes of behaviour.

3.4.2.5 Narrative research design

Narrative research involves collecting and examining narrative descriptions that people tell to depict experiences and offer interpretations (Squire, Andrews & Tamboukou, 2013; Overcash, 2003). Salmon (2023) posits that “narratives” are stories, reflections and words in context that offer detailed experiences. Clandinin (2013) defines it as a way of appreciating, comprehending and exploring experiences through the association between the researcher and participants over time, in multiple places and settings. A thought-provoking submission is made by Francis (2018), as she holds that narrative research was considered a way to ease restrictions and liberalise the documentation and lived experiences of the entire scale of society. In the past, only the rich could meet the expense of a biographer to record their life experiences. Narrative research democratised marginalised people and their lived experiences, and intends to untangle stories of people’s lives declared by them in their own words and reality (Ntinda, 2020).

3.4.2.6 Historical research design

Leopold Von Ranke, a German historian who is credited with creating historical research, emphasised that history must be investigated for its own convenience rather than for nefarious purposes and agendas (Forbes & Muscato, 2023). Historical research involves scrutinising and dissecting past events, people and societies using a variety of authorship and methods (Hassan, 2024). Historical research probes and investigates past events to generate a deepened understanding of the present and to predict probable effects on the future (Hallet, Madsen, Pateman & Bradshaw, 2012). It relies on both primary and secondary sources, including unpublished material, including eyewitnesses of events, second-hand accounts of events, books, oral or written (Berg & Lune, 2016).

3.4.3 Choice of research design

The researcher employed a descriptive case study design. According to Mills, Durepos and Wiebe (2010), a descriptive case study is defined as a study that is absorbing and

thorough, in which hypotheses and inquiries about a phenomenon are carefully interrogated and articulated at the onset. Zainal (2007) postulates that descriptive case studies aim to describe the natural phenomena that occur within the data in question. Zainal (2007) further alludes that a “case study” selects a small geographical area or a very limited number of individuals as the subject of the study. In this study, the case is Mankweng Public Hospital as an organisation. The descriptive case study was used because it allowed the researcher to acquire understanding, describe and rationalise research respondents’ opinions, views, experiences and phenomena (Rassel, Berner, Taliaferro & O’Sullivan, 2016). Furthermore, a case study design was adopted because “it focuses on a single phenomenon using different and multiple methods to achieve the research objectives” (Creswell & Poth, 2018:96).

3.5 POPULATION AND SAMPLING OF THE STUDY

This section examines the selection of people who participate in the study and the reasons behind their selection, as well as the methods used to select the participants for the study.

3.5.1 Population

According to Bhandari (2023), population refers to the entire group that a researcher wants to make inferences about. The research population, also known as target population, specifically describes the entire group or set of individuals, objects or events that possess particular characteristics and are of interest to the researcher (Thomas, 2023). Social science research largely encompasses gathering patterns of behaviour within specific populations. Population also earmarks a set of elements that the research focuses on (Bless, Smith & Sithole, 2013). The total population of this study comprised three (3) information officers from Mankweng Public Hospital. The researcher collected data from all three officers. The population was small, and as such, the researcher was able to gain a deeper understanding of the study through these officers as they had extensive experience. The officers are able to manage the hospital's information.

3.5.2 Sampling

Sampling is the process of selecting a subset of individuals, items, or observations from a larger population to gather information and make inferences about the population as a whole (Creswell & Poth, 2018). It involves choosing a representative sample that accurately reflects the characteristics of the population being studied. Researchers cannot study the entire population due to feasibility and cost limitations; therefore, a representative sample from the population must be chosen for probing, observation and evaluation (Nuzha, Boyd & Cena, 2023). There are generally two primary sampling methods that researchers employ in research: probability and non-probability sampling (McCombes, 2023). Because of this, it is imperative that these sampling methods are given a short description in this study.

In probability sampling, every member of the population has a known and non-zero chance of being selected for the sample (Creswell & Creswell, 2017). It ensures that the sample is representative of the population, as each member has an equal or proportional chance of being included. Common probability sampling methods include simple random sampling, stratified sampling, systematic sampling and cluster sampling (Polit & Beck, 2017). On the other side, the selection of sample members in non-probability sampling is based on subjective criteria, and not every member of the population has a chance of being included (Creswell, 2014). It does not guarantee representativeness of the sample, as certain segments of the population may be overrepresented or underrepresented. Common non-probability sampling methods include convenience sampling, purposive sampling, snowball sampling and quota sampling (Creswell & Poth, 2016). The researcher gave a short description of non-probability sampling methods as the study adopted the qualitative approach.

3.5.2.1 Convenience sampling

Nikolopoulou (2022) points out that convenience sampling is a method where participants are included in a sample because they are the easiest for the researcher to reach. It is a sampling method that gathers data from population members who are readily available to participate in a study. Stratton (2021) argues that this sampling technique often selects participants who are available around a location. Furthermore,

Andrade (2021) postulates that due to geographical adjacency, availability at a specific time, and eagerness to participate in research, a convenience sample is obtained from a source that is conveniently accessible to the researcher.

3.5.2.2 Purposive sampling

Based on characteristics and attributes preferred by the researcher, purposive sampling is a method where participants are selected because they have common characteristics that the researcher wants in the sample (Nikolopoulou, 2022). Specifically, participants are selected “on purpose” in the deployment of purposive sampling. This type of sampling allows researchers to focus their attention on specific fields of interest and gather extensive data on those topics (Palinkas, Horwits, Green, Wisdom, Duan & Hoagwood, 2015). Also called judgemental sampling, this method is dependent on the researcher’s judgement when selecting participants to achieve the study’s objectives (Moss, Rosenzweig & Litman, 2022).

3.5.2.3 Snowball sampling

Snowball sampling involves participants recruiting new participants to form part of the sample (Kirchherr & Charles, 2018). It is a sampling technique used when samples possess characteristics and traits that are rare to find (Simkus, 2023). It is a sampling method in which existing participants are tasked with helping researchers find other potential subjects. It operates like a network sampling, beginning with one or more participants, then it extends based on referrals from those participants. Heath (2023) states that this sampling method is employed when the topic to be uncovered is sensitive, such as people with rare diseases. Furthermore, this method involves first-hand data sources inducting other potential data sources that will form part of the sample in the study (Johnson, 2014).

3.5.2.4 Quota sampling

According to Vijayamohan (2023), quota sampling is a method in which a researcher samples participants who are representative of the target market. A quota is representative of a specific requirement or category. Kray and Bialowas (2023) state that quota sampling ensures the representation of certain groups within the population. Similarly, Futri, Risfandy and Ibrahim (2022) state that quota sampling can be divided into two groups: controlled and uncontrolled. Controlled quota sampling involves certain limitations being put in place to limit the researcher's preference of the sample, while uncontrolled quota sampling operates like a convenience sampling method where the researcher is free to sample participants according to their preference. Furthermore, Kray and Bialowas (2023) suggest that this method is cost-effective, and its application is much easier compared to other methods.

3.5.3 Choice of sampling method

The researcher employed non-probability sampling techniques called total population sampling, which is a purposive sampling method, to select the entire population (Etikan, Musa & Alkassi, 2016:3). According to Laerd Dissertation (2012), total population sampling is a type of purposive sampling technique where the researcher chooses to examine the entire population with a particular set of characteristics. It is also defined as "a sampling technique where the whole members of the population are treated as a sample" (Sugiyono, 2014:68). Total population sampling was used because the population to be investigated was not more than 100 (Creswell, 2016). Moreover, it was used because it provided wide coverage of the population of interest and reduced the risk of missing potential insights from members that are not included (Laerd Dissertation, 2012).

3.6 DATA COLLECTION

The process of data collection is of critical importance to the success of a study. According to Cai and Zhu (2015), without high-quality data collection instruments, the accuracy of the research conclusions is easily challenged. There are various data

collection methods that are usually used in research, such as observation, questionnaires, interviews and document analysis (Fouche, 2015). In selecting the data collection instrument, the researcher ensures that the instrument is associated with the design and approach and can be reliable, as advised by Maree (2016). In this study, interviews were used as a data collection method. According to Creswell and Creswell (2017), interviews are mostly used by researchers who collect qualitative data. The researcher used interviews to collect qualitative data because the population was too small.

An interview involves two people engaging in conversational discourse where one person asks questions to collect data (George, 2022). It is a qualitative research method used to collect first-hand data (Jamshed, 2014). Creswell and Creswell (2017) hold that interviews enable researchers to collect in-depth and extensive information about participants' perceptions, views and attitudes as explained by them in their own words. There are three types of interviews, namely, structured, semi-structured and unstructured interviews. A brief discussion of these is provided below.

3.6.1. Structured interview

Structured interviews involve asking questions in a particular set order for data collection on a topic (George & Merkus, 2022). Damyanov (2023) states that this type of interview, also called planned interviews, uses a standardised sequence of questions to collect data about the research phenomenon. Put more simply, this approach uses predetermined questions, ensuring that each interview has the same questions asked in the exact same order. Moreover, this type of interview is designed to extract specific responses from participants. It advances and furthers standardisation, as it minimises errors due to variation in the questions asked (Rashidi, Begum, Mokhtar & Pereira, 2014). Furthermore, George (2022) holds that questions in a structured interview are often close-ended, displaying dichotomous or multiple-choice questions. The disadvantage of structured interviews is that the researcher cannot have follow-up questions or ask anything that is not on the interview schedule (Creswell, 2014).

3.6.2. Semi-structured interview

According to Barclay (2018), a semi-structured interview employs a predetermined set of questions that stimulate discussion and diversion into other concepts, with the opportunity to further analyse, probe and delve into particular themes or responses. Jamshed (2014) posits that semi-structured interviews are a fusion of structured and unstructured interviews because some questions are predetermined while others are not. A set of questions may be prepared, but they will not be asked in any set order, and perhaps not all of them will be asked (Doyle, 2022). Similarly, Creswell and Poth (2018) and Adams (2015) allude that this approach uses a combination of closed- and open-ended questions, in most cases supported by follow-up questions to generate better understanding. Furthermore, George (2022) claims that semi-structured interviews are used as an exploratory tool to explore the experiences of participants due to the nature of the interview allowing for flexibility.

3.6.3. Unstructured interview

Allowing for flexible and free-flowing conversations, an unstructured interview is a data collection method in which the questions asked are not predetermined, and there is no set order to the questions (Rogers & Williams, 2023). Also known as a non-directive interview, an unstructured interview has no set format. This allows the researcher to ask questions which instantly pop out as prompted by the responses of the participants (Herrity, 2023). George (2022) postulates that an unstructured interview relies on social interactions, and that the interview is driven by the responses of the participants. Known for being free-flowing, this method can harvest provocative responses from participants. Moreover, unstructured interviews involve extensive and prolonged interactions between the researcher and participants with the aim of gathering data regarding cognitive processes, experiences, viewpoints and truths about social worlds (Sanchez, 2014).

For data collection in this study, the researcher used semi-structured interviews. Delve (2022) describes semi-structured interviews as a data collection method that involves asking participants a set of open-ended questions and following them up with probe questions to explore their responses and the topic of interest further. Semi-structured

interviews were used because the researcher wanted to ask open-ended questions and to follow them with probe questions to further explore participants' responses to create more understanding. Moreover, interviews were used because the researcher wanted to traverse participants' thought processes, feelings and beliefs about the topic of interest (Dejonckheere & Vaughn, 2022). The researcher conducted face-to-face interviews. The interview schedule is attached as Annexure H. The questions were constructed according to the objectives of the study.

3.7 DATA COLLECTION PROCEDURE

There are standard data collection procedures that the researcher followed to carry out evaluations. The researcher followed these procedures: identifying and conditioning the study population, constructing data collection tools, and obtaining permission to conduct the study by applying for ethical clearance from Turfloop Research Ethics Committee (TREC). The researcher then applied for permission from the Department of Health to conduct a study within the departmental facilities. Upon receiving the permission letter (See Annexure D), the researcher wrote a covering letter (See Annexure C) to request permission to conduct the study at Mankweng Public Hospital. The researcher was granted the authorisation letter (See Annexure E). After getting a letter of authorisation, the researcher wrote a consent cover letter (See Annexure F) explaining the purpose of the study, and approached the information officers at Mankweng Public Hospital to obtain permission to collect data.

The following two general points raised by Punch (2014) were borne in the researcher's mind when he collected data for the study: approaching the information officers professionally to inform them about the purpose of the study as well as the potential benefits and drawbacks. The assurance and prior engagements ensured the cooperation of the information officers. The interviews were conducted at Mankweng Public Hospital with all the information officers. The interviews took place in one day. Data collection was swift and convenient.

3.8 DATA ANALYSIS

Data analysis is a focal point in drawing inferences to a research problem. It is a process of cleaning, transforming and modelling data to discover useful information for decision-making (Johnson, 2022). Taking it a step further, various analytic procedures provide a way of drawing inductive inferences from data and distinguishing the signal (the phenomenon of interest) from the noise (statistical fluctuations) present in the data (Shamoo & Resnik, 2003). The researcher adopted thematic data analysis to analyse qualitative data collected through interviews. Thematic analysis is defined as a method for analysing qualitative data that entails searching across a dataset to identify, analyse and report repeated patterns (Kiger & Varpio, 2020). According to Watling and James (2012:385), thematic analysis involves steps of data analysis, which can be summarised as follows:

- Familiarising;
- Generating initial codes;
- Generating themes;
- Reviewing themes;
- Defining and naming themes; and
- Creating the report.

Thematic analysis was adopted because the researcher wanted to create and organise data, as well as establish themes. Thematic analysis was adopted with the help of Atlas.ti version 8 qualitative data analysis software. This software was used to prepare data, code, filter and create themes.

3.9 QUALITY CRITERIA

Creswell and Poth (2018) advise that researchers should pay careful attention to credibility, transferability, dependability and confirmability to bolster the trustworthiness of the study. Good research is distinguished by evidence that is tried-and-true, plausible, applicable to multiple settings, dependable, neutral and rational

over time (Stenfors, Kajamaa & Bennet, 2020). This is how a researcher determines if the findings of the study are credible, transferable, dependable and confirmable.

3.9.1 Dependability

Dependability is the stability of findings over time and encompasses participants' assessment of findings, interpretation and recommendations of the study such that everything is supported by the data as received from participants (Korstjens & Moser, 2018). To ensure dependability, the researcher used peer examination. In the process of peer examination, the researcher discusses their findings with fellow students who are doing qualitative research or have thorough knowledge of qualitative research. According to Kelly, Sadeghieh and Adeli (2014), peer examination assists the researcher to filter and uphold honesty in their work.

3.9.2 Confirmability

Confirmability is the extent to which the findings of the research study could be confirmed by other researchers (Lincoln & Guba, 1985). Confirmability is more focused on establishing that the data and interpretations of the findings are not made-up viewpoints, preferences and biases of the researcher, but are clearly derived from the data (Lincoln & Guba, 1985). An audit trail, which exhibits all the steps of the data collection and analysis processes, minimises cheating in the study and ensures that the study findings depict participants' responses and the subject knowledge of the research study (Pickard, 2012). To satisfy this criterion, the researcher upheld neutrality throughout the research process and conducted an audit trail of data collection and analysis processes. The Department of Health ethical clearance approval date was 05-02-2024. Upon receiving the ethical clearance, the researcher approached Mankweng Hospital on 08-02-2024 to present the ethical clearance certificate. Mankweng Hospital approved the study on 20-02-2024. The researcher collected data on 01-03-2024.

3.9.3 Credibility

Credibility is the confidence that can be placed in the truth of research findings, and outlines whether the research findings represent reasonable, believable and feasible information inferred from participants' original data, and is an accurate interpretation of their original views (Korstjens & Moser, 2018). For study results to be deemed credible, they should adhere to widely accepted research methodologies, allowing others to verify them through replication of the utilised methodology, as emphasised by Kothari (2004). In ensuring the credibility of the study, the researcher had prolonged engagement with participants and represented the data given by the participants as accurately and adequately as possible. The researcher ensured that data is interpreted without being biased or excluding some information from the participants. The participants were informed that they can receive the outcome of the findings so that they can make suggestions if they were not satisfied with how their views were interpreted.

3.9.4 Transferability

Transferability is the extent to which findings of qualitative research can be transferred to other contexts or settings with other respondents (Lincoln & Guba, 1985). According to Stalmeijer, Brown and O'Brien (2024), the researcher facilitates the transferability judgement by a potential user through 'thick description' and purposeful sampling. Thick description involves the researcher's elucidation of all research processes, from the theoretical framework employed, which is the process model of IM in this study, data collection, context of the study to production of the final report. Thick description helps other researchers to replicate the study with similar conditions in other settings. Purposive sampling helps the researcher to focus on key informants who are particularly knowledgeable about the issues under investigation (Drisko, 2024). The researcher ensured that participants' responses and the researcher's interpretation were given rich description. Again, the research was based on a theoretical framework as shown in chapter two.

3.10 ETHICAL CONSIDERATIONS

“Ethics are matters of moral honesty, but they go far beyond the individual’s consequences” (Bezuidenhout, Davis & Du Plooy-Cilliers, 2014:228). Shoroma (2021) asserts that ethical considerations are crucial when researching any aspect of human beings. This is because studies of human behaviour are often highly significant, personal, and even potentially dangerous. Ethical considerations in this study include the following:

3.10.1 Permission to conduct the study

Nkuna (2020) postulates that before any data are collected for research in an organisation, permission for that study should be obtained first. The researcher applied for permission to carry out the study from the Turfloop Research Ethics Committee (TREC). The researcher obtained an ethical clearance certificate (See Annexure B) from the TREC (TREC/1542/2023:PG) to be able to collect data at Mankweng Public Hospital. This was done by applying for the certificate, where the researcher completed the TREC form. After the certificate was issued, the researcher applied for ethical clearance from the Department of Health. Once the permission was granted (See Annexure D), the researcher drafted a cover letter (See Annexure C) to Mankweng Public Hospital requesting permission to collect data at their institution. Upon receiving the authorisation letter (See Annexure E), participants were provided with thorough information about the anticipated target of the study, the methods that would be used, and the prospective benefits and drawbacks for the participants through a consent cover letter (See Annexure F).

3.10.2 Confidentiality and anonymity

Nkuna (2020) explains that confidentiality means that participants’ identities will not be revealed when using any data provided. The researcher ensured that the data provided is kept confidential. The researcher protected participants’ privacy and made sure that they were not identified and asked them not to reveal their real names during the interview. This helped to assure them that no one would be able to recognise them.

This was done by ensuring that only the researcher and the supervisor had access to the raw data.

3.10.3 Informed consent

Shoroma (2021) states that informed consent is one of the ethical concerns that emphasise the significance of accurately informing respondents about the nature of the research and obtaining their written consent to participate. The study was explained to participants by means of a covering letter that stated the purpose of the study (See Annexure C). The researcher also requested permission from the participants to record them during the interviews. Furthermore, the researcher drafted a consent form where participants were requested to sign to indicate that no one was forced to take part in the study.

3.10.4 Benefits, risks and harm

Francis (2016) asserts that a study is to be seen as ethical when there is a positive risk-benefit ratio. Benefits must be greater than risks in a study. The researcher carefully evaluated all potential outcomes of the study and weighed the risks against the corresponding benefits. As the research did not involve any experimental procedures, the risk of physical or psychological harm was minimal. Moreover, the researcher ensured that no offensive or disrespectful questions were asked during the study.

3.10.5 Plagiarism

Helgesson and Eriksson (2015) state that plagiarism occurs when a person uses someone else's intellectual property such as texts, ideas or results, thereby implying that it is their own. Literature was cited and referenced to prevent plagiarism. Additionally, the researcher utilised the Turnitin plagiarism detection or system to detect any form of text similarities that may cause plagiarism.

3.11 CHAPTER SUMMARY

This chapter focused on research methodology, that is, the research paradigm, approach and design. Additionally, this chapter explained population and sampling, data collection, data collection procedure, data analysis, quality criteria and ethical considerations. The study adopted the interpretivist research paradigm and the case study survey research design, through the semi-structured interview as a data collection method. Interviews were conducted with three information officers selected through total population and purposive sampling method. Before data collection, all ethical principles were taken into cognisance. The next chapter presents data analyses and discussion of the findings.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 INTRODUCTION

The previous chapter discussed the research methodology used to collect data of the study. Chapter 3 focused on processes and procedures used to collect data to address the research objectives of the study. Chapter 4 presents, analyses and interprets the results of the study that was conducted using a descriptive case study design that utilised the qualitative research approach. Jankielewicz and Whiting (2023) opine that the rationale behind data analysis in research is to present logical, accurate, factual and reliable data. Coy (2019) and Saldana (2013) advise that in the process of data presentation, researchers are morally expected to think as spectators rather than presenters to diminish manipulation and bias. Bhatia (2017) states that data analysis cleans, modifies and models data to extract insights and unlock hidden information in the raw data.

For this study, data was collected using semi-structured interviews which were administered face-to-face. The interview schedule had six main sections. Section A of the interview covered the demographic profile of the study participants. Section B, which was the first objective of the study, focused on the awareness of users' information needs by information officers. Section C, second objective of the study, detailed the attitudes and perceptions that information officers have towards IM. Section D, third objective of the study, suggested IM tools that can be used by information officers in managing information. Section E, fourth objective of the study, looked at factors that affect and influence the application of IM. Lastly, section F, fifth objective of the study, recommended IM strategies that can be used for the effective and efficient management of information.

Thematic analysis was used to analyse the data collected. It involves delving into a data set, identifying patterns, systematically coding, deriving themes, and creating a narrative (Dawadi, 2020). The findings are presented verbatim on the tables and the

main themes are highlighted in bold, and then discussed narratively, by referring to the previous findings on health IM practices in hospitals or the health industry in general.

4.2 INTERVIEW RESULTS

The researcher conducted semi-structured interviews with officers who are primarily responsible for managing information at Mankweng Public Hospital. The senior information officer was interviewed first. Thereafter, information officers were interviewed on the processes and procedures used to manage information. This provided an overview of how information is managed in all its facets at Mankweng Public Hospital at the time of this study.

4.2.1 Awareness of information officers on users' information needs

Understanding the roles and responsibilities of information officers in managing information is critical to ensuring the effective delivery of information services. At Mankweng Public Hospital, the clarity of these roles significantly impacts how well information officers comprehend and address users' information needs. This section explores the awareness of information officers regarding their responsibilities and how these relate to identifying and meeting the diverse information requirements of healthcare professionals. The investigation also delves into the primary users of information managed by the IM section and the purposes for which this information is utilised. By examining these aspects, the study highlights the integral role of information officers in facilitating strategic planning, decision-making, and knowledge creation within the healthcare context.

4.2.1.1 Role of information officers at Mankweng Public Hospital

In this section, the researcher wanted to establish if information officers have clearly defined roles and responsibilities in managing information at Mankweng Public Hospital. The researcher wanted to know how these roles relate to understanding users' information needs. The focus was on determining the influence of clearly defined roles in effectively managing information. This was a good step in identifying key roles and responsibilities and how these roles relate to understanding users' information needs at the hospital. Participants knew their roles, and had clearly defined

their roles and how these roles relate to understanding users' information needs. The following table (Table 4.1) shows how participants responded to the question.

Table 4.1: Role of information officers at Mankweng Public Hospital

Participant A	*My role as an information officer is to **manage data by collecting, collating, analysing, and validating in order to have quality information**. These roles help us provide users with quality information for their own reporting and decision-making. The aim is to improve services in the hospital. The section also protects patient information, we are guided and regulated by POPIA.*
Participant B	*My role is to **guard and protect the organisational data using stringent access controls**, these access controls are computer passwords, unique user identification and data repositories passwords, making sure that the data repositories produce consistent reusable data. Produce and distribute performance forecasting information across operations. Identify, analyse, and interpret trends or patterns in the complex data sets. **Collection, collating, and validation of data through well-developed collecting tools**. This is done to satisfy the users' information needs, be it their research (studies) or decision-making in the hospital.*
Participant C	*My role is to **collect, analyse, validate and capture data, prepare disease profiles, and compile mortality statistics**. All these steps are done to*

	produce different informational products for the different sections in the hospital.

The direct response from participant A shows that information officers have clearly defined roles of managing information at Mankweng Public Hospital. It has been established that these roles include collecting, collating, analysing, interrogating and validating data in all its facets, and that proper execution of these roles help in understanding users' information needs and satisfaction of these needs. Responses from Participants A and C show that they perform the same roles, but Participant C also performs lower-level roles such as capturing disease profiles, mortality statistics and mid-night statistics collected from the wards. Common roles and responsibilities that were identified by Riggs (2021) that are associated with managing information in the healthcare sector are:

- Develop a health information plan detailing the information needs of different stakeholders at source points.
- Provide data collection tools and monthly summary forms for different source points.
- Train data collection staff on data elements to be collected, data collection tools, and how to analyse the data collected.
- Check the quality of data captured by data capturers.
- Discuss discrepancies on the data provided by the different source points with the different operational managers.
- Provide feedback on data quality and performance to all source points.
- Present analysed facility information at management team meetings.
- Identify data quality problems and develop a data quality improvement plan to address identified problems.

Zeng, Reynolds and Sharp (2009) state that these roles in managing information essentially help healthcare providers make accurate clinical and medical decisions, and assist the Department of Health in resource allocation and staff employment.

These roles must be clearly defined to ensure effective management of information. Participant A further stated that *the information management office trains the different sections in the hospital (mainly nurses) on how to use data collection tools, the data elements that should be included on the data collections tools, and modes that should be used to transmit information*. Inference drawn shows that for effective management of information, information officers must have clearly defined roles and responsibilities that will help them to expertly manage information.

Responses from Participant B show that the section guards and protects the organisational data using stringent access controls. These access controls include computer passwords, unique user identifications and data repository passwords which are limited to the IM personnel. These are measures put in place to protect patient information. Brand (2019) states that the Protection of Personal Information Act 4 of 2013 (POPIA) which was signed into law on the 19th of November 2013 was to enforce and regulate compliance, and protect the processing of personal information by both public and private bodies. The act mushroomed as the need to balance the right to privacy against the justifiable right to access information became imminent. Participant A highlighted that they are guided and regulated by POPIA. Intentional manipulation and intentional publication of patient information in the healthcare setting is immoral, disreputable, unethical and punishable by law, as it openly breaches patient confidentiality. Buys (2017) warns that irresponsible and negligent administration of patient information can result in Health Professions Council of South Africa sanctions, privacy contravention lawsuits and, in extreme cases, consequential monetary penalties or even imprisonment. In ensuring the security, privacy and protection of patient information, Rayhan, Tariq and Hackert (2023) also report that the Health Insurance Portability and Accountability Act (HIPAA) was enacted to protect and secure patient medical data.

4.2.1.2 Primary users of information at Mankweng Public Hospital

The three participants were further asked about the primary users of information in their custody. This was done to establish who uses the information housed in the IM section. Martikainen, Kaipio and Laaveri (2020) emphasise that information officers

should know who users of information are and for what purpose do they use that information. Table 4.2 shows how participants responded to the question.

Table 4.2: Primary users of information at Mankweng Public Hospital

Participant A	*Primarily, **doctors and nurses** are the users of our information. Then we have **executive management, officials from the Department of Health at district, provincial, and national level** in order to improve the service delivery to various communities. The information provided assist them to have a true picture of the services they are providing to the hospital users.*
Participant B	*Users of the information in my custody are **clinical and administrative module**. The clinical module of this system works by concentrating on patient centric activities like appointment, registration, doctors' treatments and surgeries. **Doctors** are primarily able to detect disease trends through the collected data at the disposal of the information management office.*
Participant C	*I will only focus on two users. We have many other users, but my focus will only be on two users. We have **hospital management and officials from the***

	Department of Health. *They use the information we provide them with as rationale for resource allocation.*

Participant A identified doctors and nurses as the primary users of information in the custody of the IM section. Because of the complex nature of the healthcare setup, Mahanta and Yadav (2015) identified three subgroups that use patient information: primary users, secondary users and third-party users. Primary users include doctors and physicians; secondary users include nursing/paramedical staff, hospital administrators; and third-party users include social workers, occupational therapists etc. Batko and Slezak (2022) also show that a patient's medical information will only be seen and dealt with by doctors and nurses who are directly involved in the patient's care.

According to Participant B, doctors are primarily able to detect disease trends, and formulate preventative strategies through the collected data provided by the IM section. Other studies have provided a different lens to what was mentioned by the participants, highlighting that there are other individuals or groups that use health information. Batko and Slezak (2022) maintain that there are other organisations that can have access to and use patient information after their applications have been approved by the Department of Health (under strict controls and conditions). These organisations include the National Health Service (NHS) providers and commissioners who use data to keep an eye on trends and patterns in hospital activity to forecast future events, to establish a true picture of how service is provided, and to support local service planning. Batko and Slezak (2022) further allude that university researchers also use patient information to generate a deepened understanding of the causes of diseases, to cultivate strategic ways of diagnosing illness or to identify ways to develop new treatments. Charities use patient medical data to assess service provision and identify ways to improve care. Companies also use patient medical data when they forge partnerships with the NHS to provide care and research. Furthermore,

Askari-Majdabadi, Valinejadi, Mohammadpour, Bouraghi, Abbasy and Alaei (2019) hold that with the use of past medical information of patients, doctors and nurses can establish treatment effects on patients, and provide more tailored care as per individual needs.

Responses from participant B highlight that the administrative staff use information to deliver quality care. Due to the healthcare sector being a multi-disciplinary environment, it takes a significant number of non-clinical personnel to keep healthcare organisations running. The healthcare sector operates like a honed machine of different parts moving together to achieve a common goal. Ayatollahi, Bath and Goodacre (2013) posit that clinicians and non-clinicians (administrative staff) closely work together to deliver quality care. Non-clinicians may need to know more about different techniques in outpatient surgery, the interpretation of laboratory test results, new findings about drug interactions, and new methods of emergency treatments to provide patients with better care (Schiaffino, Suzuki, Ho, Finlayson & Harman, 2019). Non-clinicians scan incoming test results into the electronic record system for the doctors to review. In the healthcare sector, doctors and nurses evaluate and manage patients' problems promptly. Therefore, the instant availability and accessibility of information, provided by non-clinicians, at the point of care can be significantly influential for refining the quality and speed of care (Berry, Danaher & Deming, 2018). Johansen, Sorensen, Langelo, Mikkelsen and Emme (2022) and Vecchio, Davies and Rohde (2018) warn that inaccessible and deficient information can have devastating effects on the process of care, 30-40% of clinicians' time can be wasted on non-clinical tasks, such as searching for medical histories as a result of deficient information. Schiaffino et al. (2019) further allude that some of the non-clinical positions in hospitals are:

- Hospital executives;
- Administrative assistants;
- Receptionists;
- Human resources;
- IT specialists;
- Transcriptionists;
- Medical device salespeople;

- Pharmaceutical representatives; and
- Medical laboratory assistants.

Participant C stated that hospital management are users of the information housed in the IM section. Sanjuluca, De Almeida and Cruz-Correia (2022) state that hospital information could be used as indicative tools for hospital managers, and aid in the process of decision-making. Nishanthan, Mathyvathana, Priyanthi and Thusara (2022) also report that hospital managers use hospital information to foster synergy in the different sections, improve administration, and improve patient care. Furthermore, Parand, Dopson, Renz and Vincent (2014) postulate that hospital managers use patient information as a tool to cultivate strategy, foster culture, and improve patient centric activities.

4.2.1.3 Purposes for which the information is used

The fundamental premise of IM is to manage information, with the primary goal of making it easy to use. Harnessed information facilitates strategic planning, decision-making and the creation of beneficial knowledge. One of the statement aims of the IM section at Mankweng Public Hospital is to manage and promote the use of information. Because of this, participants were asked about the purposes for which health information is used by users. Table 4.3 depicts their responses.

Table 4.3: Purposes for the use of information

Participant A	*Firstly, doctors and nurses use the information for their own **research (studies)**. Executive management and officials from the Department of Health use the information to **assess the level of the system** which is in place against the available resources. To make **informative decisions** when coming to*

	allocation of resources in order to improve service delivery.
Participant B	*Doctors use the information to **identify the prevalence of certain diseases**. The information is assisting the Department of Health to **come up with intervention strategies** to curb the wide spread of diseases.*
Participant C	*Hospital management and the Department of Health use the information as an assistive tool for **decision-making on staff allocation and appointment, resource allocation, and expenditure per PDE** (Patient Day Equivalent).*

Responses from Participant A show that doctors and nurses use information to conduct their own research (studies). Naas, Levit and Gostin (2009) state that doctors and nurses conduct research to learn about ailments, prevalent diseases, and risk factors, end results and after-effects of treatments or public health interventions, patterns of care, functional abilities, and health care costs and use. Jacob (2016) claims that all doctors should be involved in research as this capacitates doctors to assess and evaluate their practice objectively and to actively participate in advancing their discipline. Hanney and Gonzalez-Block (2015) found that doctors who engage in research accumulate knowledge and mastery of diseases and treatments, and better apprehension of the causes and symptoms.

Moosa, Downing, Mash, Reid, Pentz and Essuman (2013) recognise that family medicine is new in Africa; as such, family physicians are trying to extensively research about family medicine and define it within the contexts of Africa. Moosa et al. (2013) further hold that this is one of the leading researched disciplines in Africa; however, there is hardly any clarity and comprehension of family medicine and its relevance in Africa. A study by Mohapi (2014) encourages doctors at Mankweng Hospital to conduct studies on the casualty department, as there are no known studies conducted in this area in South Africa, and Mankweng Hospital in particular.

Participant B states that doctors use the information to identify the prevalence of certain diseases at Mankweng Hospital. Letsoalo (2022) states that foot and lower limb pathologies were frequently the primary complaints of patients seeking medical attention at Mankweng Hospital. The study showed that foot and lower limb pathologies were more common in females than males. Mavhungu and Bhuiyan (2021) also found that breast cancer is a widespread cancer diagnosed among women, and it is the most prevalent cancer and common cause of death among women admitted at Pietersburg and Mankweng Hospitals. The study recommended provision of mammography services in regional hospitals. “Latex allergy is also a common occupational disease among healthcare workers who use latex gloves at Mankweng Hospital” (Risenga, Shivambu, Rakgole, Makwela, Ntuli, Malatji, Maligavhada & Green, 2013:6).

On a global stage, heart diseases are the most prevalent disease, claiming a third of all deaths globally (Mercer, Ditto, Lavoie, Campbell, Arsenault, & Bacon, 2018). HIV/Aids is ravaging the African continent, making itself the biggest killer by large margins (Muggeridge, 2015). Boutayeb (2010) postulates that HIV/Aids, malaria, acute respiratory infections and tuberculosis are the most infectious diseases on the African continent, accounting for at least 80% of the total infectious disease burden, and killing over 6 million people every year. Tuberculosis is the leading health malady in South Africa, and the common cause of death in the country (Akindele & Useh, 2021).

In South Africa, the responsibility of preventing the spread of diseases fall under the Department of Health in collaboration with the Centres for Disease Control and Prevention (CDCP), which according to Maphumulo and Bhengu (2019), has not implemented sustainable national core standards and enough initiatives to curb the spread of diseases. As a result, the lack of proper implementation of national core standards has led to insufficient district and provincial support, financial and human resource constraints, infrastructural challenges and ineffective initiatives which has allowed diseases to flare out of control (Majozi, 2021).

Responses from participant C show that hospital management and the Department of Health use the information to make decisions on staff allocation and appointment, and resource allocation. Patient information is used as an assistive tool by the Department of Health to know the types of resources that are needed and the quantity that is needed. Participant C further said that "*Disease profiles are captured by IM officers at Mankweng Hospital, then they are sent to the Department of Health. The* ***disease profiles*** *will assist the department in knowing all the different types of diseases that are being treated at the hospital. Then, the Department of Health will use the statistical numbers on the disease profiles as reference to provide the right quantity of resources, medication and other tools of care".*

Disease profiles refer to lists of diseases depicting trends and patterns, quantities of patients affected and severity of diseases (Song, Liu & Chen, 2019). It is a list that provides data on diseases and related risk factors. Participant A reiterated that *when capturing disease profiles, the right figures as they appear on collection tools, must be captured. Wrong numbers being captured can result in the Department of Health providing resources that do not correspond with the actual number of patients in the hospital*. Steckling, Plaas and Hornberg (2015) assert that disease profiles facilitate the ascertainment of diseases, comparison of diseases and acts as a catalyst on how to mitigate the associated burden. Braithwaite, Mannion, Matsuyama, Shekelle, Whittaker and Al-Adawi (2017) posit that hospital management and officials from the health department can use disease profiles as an indicative tool to determine which doctors require training interventions. With different formats of disease profiles being used in healthcare at present, the participants highlighted that different formats of

disease profiles are used at Mankweng Hospital so long as the format aligns with the working habits of the IM section.

4.2.2 Perceptions of information officers towards IM

The perceptions of information officers regarding their roles, challenges, and organisational support are essential in understanding the effectiveness of IM practices at Mankweng Public Hospital. This section examines the participants' perspectives on their contributions to improving healthcare service delivery, their views on the support required from hospital management, and their assessment of existing IM practices. By exploring these perceptions, the study provides insight into the alignment of IM practices with the hospital's goals and the critical role of workplace culture in fostering effective IM.

4.2.2.1 Role played by information officers to improve the overall quality of healthcare service delivery

Participants were further asked about the role they play in improving the overall quality of healthcare service delivery. The responses in Table 4.4 below show that the provision of quality information and strategic planning facilitated by information are the notable roles that information officers play to improve the overall quality of healthcare service delivery.

Table 4.4: Role played by information officers to improve overall quality of healthcare service delivery.

Participant A	*Information officers play a major in improving the **overall quality** of healthcare by **providing quality data** that reflects a true picture of the state of the hospital. The users depend on information provided for decision-making, and hospital management in*

	particular, for improving of service delivery.
Participant B	*In the absence of information, the healthcare service delivery **will not be able to plan properly**. The information provided helps in **strategic planning** by those in authority; as a result, that will help in improving the overall quality of healthcare service delivery. Information is assisting those in authority to take decisive decisions based on the data at their disposal.*
Participant C	*The **provision of quality data** helps in improving the overall quality of healthcare service delivery. The information provided by us as information officers **informs key changes and reforms** in the hospital. The information is then used by management to **assess the effectiveness of the systems** in place.*

Participants A and C highlighted that the provision of quality data helps in improving the overall quality of healthcare service delivery. It is of particular significance that information officers act as a mould that holds all the sections in hospitals. The IM section is one that is, in one way or the other, connected to all the different stakeholders in hospitals. Ehsani-Mogaghaddam, Martin and Queenan (2021) allude

that the provision of quality data in healthcare facilitates the implementation of remedial interventions to improve the overall quality of healthcare service delivery, where data shows inadequate performance. Participant C further said that *the information provided by the IM section prompts key reforms in the hospital, the data provided paints a holistic view of the effectiveness of the systems in place, which then leads to tailored treatments, fluid communication and improved health outcomes*. Furthermore, information officers direct, control and construct health information programmes to assure and accommodate medical, legal and moral standards (Adebayo, 2019). Additionally, Mutale and Chintu (2013) hold that information officers progressively generate requisite data for health service planning, monitoring and reporting.

Participant B made mention of strategic planning as a role played (facilitated) by information officers in improving the overall quality of healthcare service delivery. Williamson and Stoops (2018) posit that health officials, hospital managers and information officers are encouraged to work as a unit in the process of strategic planning to develop ways of improving facility operations. This is because the key resource (information) that informs strategic planning is managed and provided by information officers. Moinzad and Akbarzadeh (2022) state that complete, accessible and easy to use information helps hospital managers to identify and address areas of deficiency and incompetence. Quality data helps facilitate motivation for more staff, budgetary re-allocations, procurement of advanced technologies and the adaption of targets in operational plans (Lovelace & Shah, 2016). However, Fits and Shaikh (2018) lament that lack of access to information and poor skills in utilising this information are a challenge for service managers in implementing strategic plans. Furthermore, Fits and Shaikh (2018) allude that although information enables managers and service providers to make linkages between health status indicators and quality of service delivery, the reality is that health managers struggle with making sense of data.

4.2.2.2 Support of information officers' work

In this section, participants were asked about ways in which the work of information officers can be supported by the hospital management. The researcher wanted to

establish what can be done to enhance the work of information officers. Table 4.5 paints a picture of the participants' responses.

Table 4.5: Support of information officers' work

Participant A	*Information officers can be supported by provision of resources like* ***human resource****, equipment like* ***computers and printers and network connectivity.*** *Source points can assist with compliance to information management policies and standard operating procedures (SOPs) like timeliness.*
Participant B	*Information officers' work to be more effective, the section should be supported by* ***appointing sizeable number of staff*** *based on the vastness of the hospital. The officers should as well be supported by providing them with* ***modern working tools like computers and printers****.*
Participant C	*The source points should submit data as per prescribed data collection tools. The source points should also submit data on daily basis (on time). The section has to be provided* ***with functional equipment***

	***like computers and printers**, as well as **network connectivity**.*

According to Participants A and B, the hiring of more staff can help support the work of information officers. Adequate staff should be able to generate a methodical flow of information between providers and staff, which in the long run leads to increased productivity and efficiency (Popescu, Chaarani, EL-Abiad & Gigauri, 2022). Participant A lamented that *the IM staff was culled down a couple of years ago; as such, the current information officers are stretched*. Vainieri, Ferre, Giacomelli and Nuti (2019) state that the correct staffing of information officers in healthcare facilitates improved patient care and safety, fosters the mitigation of medical errors, fosters quality data and improved patient satisfaction. Participant B further said,

> "*Knowing that the information generated by the IM section plays an integral role in improving patient care is the most rewarding part of the job, but the staff-to-size ratio does not correspond considering that Mankweng Hospital is one of the largest academic hospitals in the country*…"

Although the current information officers are trying by all means necessary to effectively manage information and service the information needs of healthcare professionals, the recruitment of more information officers is necessary as a matter of urgency.

Participants A, B and C made mention of modern working tools like computers and printers to support the work of information officers. IM sections produce large volumes of information daily, the procurement of appropriate equipment to support the processes is necessary. Shaanika and Iyamu (2019) hold that computers allow for the creation, storage, maintenance and management of patient data, which can enhance the efficiency, precision and accuracy of patient data management. One of the participants (C) deplored the lack of modern functional computers in the section, and

highlighted that the section only has two computers and one laptop, which often freeze. Huang (2021) also stresses that computers capacitate IM sections for the analysis of large volumes of health data, which provides beneficial insights about public health trends, disease management and treatment outcomes. Participant B further said that the section uses a small printer which is not multifunctional; as a result, forcing the information officers to go to other sections for the other several features a printer provides in addition to printing. Jen, Kerndt and Korvek (2023) further allude that computer systems in the healthcare sector enable the collection of patient data in a way that is as usable as possible so that it can be assessed and manipulated to enhance care processes that are in place.

Participant C referred to the provision of network connectivity as a way in which the work of information officers can be supported. Davis (2023) mentions that network connectivity has gradually become an anchor of modern health IT infrastructure, as medical providers expand on the use of connected devices and digital tools in the healthcare environment. Fast and reliable networks are needed for quick access to information. Participant A also states that information officers are often unable to attend virtual meetings arranged by the district due to connectivity issues. Rajamani and Iyer (2023) postulate that networks play an imperative role in healthcare, as they enable communication and information-sharing among individuals working in different roles and locations.

4.2.2.3 Perception of information officers on IM practices

Participants were further asked about their perceptions of IM practices. The researcher wanted to establish their views on the current IM practices that are in place. Incomplete and poor data from source points, lack of continuous staff training, and lack of a larger office space were imagined to be impacting negatively on the effectiveness of the current IM practices in place. Table 4.6 shows how participants responded to the question.

Table 4.6: Perception of information officers on IM practices

Participant A	*IM is important for achieving organisational goals. The current IM practices that are in place can be more effective and efficient if* ***source points were to provide complete, accurate and quality data to the IM section. Poor data provided by source points*** *remains one of the biggest challenges that compromises the effectiveness of the IM practices and the IM section in general.*
Participant B	*The general perception revolves* ***around the acute shortage of staff,*** *which then affects the effectiveness of the practices. The improvement which can be effected to remedy the current situation is through recruitment of information officers. Continuous* ***staff training which is key in IM practices*** *is also needed for the continual development and effectiveness of information officers. Lack of compatible resources is also hampering the IM practices that are currently in place.*
Participant C	*The section produces and generates large volumes of information daily and the* ***lack of a larger office space*** *results in clutter, which makes finding*

	information difficult at times. The section receives data daily from source points and ***lack of a larger office to store the data affects negatively on the IM practices****. The provision of a larger office space can assist in orderly housing the data received daily.*

Participant A believes that IM is imperative for achieving organisational goals. However, incomplete and inaccurate data from source points (doctors and nurses) is believed to be a burden affecting the IM practices constantly. The completeness and accuracy of data recording by nurses is influenced by the number of documents to be completed for each patient, lack of resources and adequate training, knowledge of disease guidelines, attitudes and practices (Kagasi, Zungu & Hoque, 2013). Participant A highlighted that *the incomplete and inaccurate data from source points is caused by diverse issues ranging from age, inability to understand disease terminology, attitudes of nurses towards data recording and inability to operate technological devices.* Mutshatshi, Mothiba, Mamogobo and Mbombi (2018) maintain that poor data recording by nurses is caused by an assortment of challenges, which include inadequate time to complete the records, escalated patients' admission and shortage of data collection tools to record on.

Participant B indicates that *lack of continuous staff training hampers a better understanding of the key responsibilities, knowledge and skills needed to perform the job*. This diminishes the effectiveness of the IM practices. Sarre, Maben, Aldus, Schneider, Wharrad, Nicholson and Arthur (2018:145) deplore "the lack of staff training to improve health IM and the development of training interventions to equip staff with the necessary expertise". Participant B further suggests for in-house training for the development and cultivation of expertise by saying *the hospital should initiate in-house training programmes to upskill employees to remain compatible with their*

evolving roles and responsibilities. Lee and Mongan (2012) make mention of "information chaos", as a result of lack of training, skill development and understanding of information policies which too often can hamper IM projects. Moreover, "the lack of staff development and training can heighten information overload, lack of information coordination and unusable information" (Gesme, Towle & Wiseman, 2010:105).

The conclusive aim of any IM section is to provide information timeously. Participant C lamented the lack of a larger office space due to large volumes of information being produced daily, which causes clutter, making it difficult to locate and dispense information (manual information) timeously. The Department of Health (2014) advises that, with the proliferation of information daily, health information disciplines should look into having internal walls that can be disassembled with ease to allow for the necessary flexibility. Participant C highlighted that the officers are trying to effectively house the information with the available office space. However, there is a riveting need for the provision of a larger office space to allow for a coordinated information storage.

4.2.2.4 IM and work culture

Work culture is an assemblage of attitudes, beliefs and behaviours that make up the accordant climate in a work environment. A good workplace culture coordinates employee behaviours and company policies, while also bearing in mind the serene state of individuals. Therefore, participants were asked about how the IM culture at Mankweng Public Hospital contributes to meeting users' information needs. Their responses are depicted in Table 4.7 below.

Table 4.7: IM culture

Participant A	*The section has adopted the culture of **timeous information provision**. In the healthcare sector, timeous access to reliable and up-to-date information is important. Healthcare professionals should get information timeously to*

	provide quality care and make informed decisions.
Participant B	*As the information office, we had developed a culture of constituting* ***quarterly meetings with users to discuss how information provision can be done, the challenges and possible solutions****, and this culture is paying dividends. These quarterly meetings help the information office understand the state of the different wards in the hospital, the developments in the wards, and to provide information in line with the state and needs of each ward.*
Participant C	*The culture of* ***access to information timeously*** *has been put in place to facilitate timely decision-making, and timely access to information at the point of care for doctors and nurses.*

Participants A and C referred to timeous information provision as one of the sectional cultures that contributes to meeting users' information needs. Machele (2023) maintains that timeous access to reliable and accurate patient information is imperative in healthcare, as it enables healthcare professionals to provide quality care and make rational decisions about the diagnosis, treatment and management of diseases. Healthcare professionals need prompt access to information about previous

diagnoses, treatments and prescriptions with the purpose of noting the progress made with previous treatments, and how to forge tailored treatments moving forward (Marutha & Ngoepe, 2017). Bali, Iyer, Bali and Iyer (2011) further maintain that timeous information provision should be the core of any IM department. Participant C also confirms this by saying "*upon receiving an information request from users, information dispensation has to happen within 15 minutes of the request…".*

A response provided by Participant B further shows that the culture of quarterly meetings has been constituted to discuss the information needs of users, how information can be provided, and the challenges and possible solutions. Liverman, Ingalls and Fulco (1997) recognise that continual contact between information officers and users is important to define and refine the information needs of health professionals in terms of three key components: (1) information required for decision-making and already recognised by the health professional (currently satisfied need); (2) information that the health professional does not recognise but he/she acknowledges as being usable and relevant to the decision-making process (consciously recognised need); and (3) information that is imperative to the conditions at hand but the health professional does not realise is applicable (unrecognised need). Quarterly meetings can help dig out, refine and clarify such information needs. Moreover, Pakenham-Walsh and Bukachi (2009) posit that information officers and health professionals must closely work together to define and establish factors that affect the information needed by health professionals. These range from the matter in question, the knowledge base of health professionals, their awareness of information sources, the associated cost of acquiring information, and the use intentions of the information. Hence, constant meetings are imperative for the acknowledgement and establishment of such.

4.2.3 IM tools used by information officers

Effective IM relies on robust systems and tools to collect, store, and manage data. At Mankweng Public Hospital, understanding how patient data is handled is essential to evaluating the efficiency of the current practices. This section explores the methods used by the hospital to collect and store patient data, the information systems employed for managing information, and the specific IM tools utilised by information officers.

4.2.3.1 Collection and storage of patient data

In this section, participants were asked how the hospital collects and stores patient data. This was done to establish the steps undertaken to collect patient data, and the storage of it thereafter. Table 4.8 illustrates the responses of participants.

Table 4.8: Collection and storage of patient data

Participant A	*Source points are given collection tools monthly by the IM section.* ***These collections tools include registers, daily input forms and monthly input forms*** *specific to the ward speciality. The source points* ***populate the collection tools, then the collection tools are sent to the IM section*** *(hard copies) during the first week of every month detailing the monthly operations. The patient data on the collection tools is then captured and* ***stored on Microsoft Excel workbooks*** *for easy retrieval and dispensation, then the hard copies are* ***stored manually in filing cabinets****.*
Participant B	*There are two types of data that the hospital collects: daily data and monthly data. The focus will be on the daily data. The IM section* ***receives daily data from the wards every morning called the "yellow pages", also known as midnight statistics****. The name is derived from the colour of the pages.*

	*These yellow pages indicate **daily admissions, discharges, deaths, movement from one ward to the other, abscondment of patients etc**. The data is then captured and stored on Microsoft Excel workbooks daily, and the yellow pages are stored manually in filing cabinets.*
Participant C	*The hospital collects patient data from the **registers, daily input forms, monthly input forms and patient files**. These collection tools are filled and populated by source points, and delivered to the IM section. Data is stored electronically largely on Microsoft Excel workbooks and the hard copies are stored manually in filing cabinets.*

Responses from Participants A and C show that data is collected by source points through collection tools such as physical registers, and daily and monthly input forms unique to the ward speciality. The collection tools are sent to the IM section. The data is then analysed, interpreted, captured and stored electronically on Microsoft Excel workbooks for easy retrieval, and hard copies are stored manually in filing cabinets. The interaction between a healthcare provider and a patient facilitates the generation of data. This ranges from demographic, health, lifestyle, treatment, medication and appointments. This is recorded on a patient record, in the form of a physical paper record or digital record (Babu, 2023). According to Participant C, the use of physical paper records used to collect data in the hospital causes duplication of activities. This is because patient data is recorded by doctors and nurses, sent to the IM section, and

information officers must then capture the same data. Honavar (2020) warns that physical paper records lack standardisation, and have poor searchability and loss of information. Therefore, responses from Participant C suggested that the acquisition of electronic registers will eradicate the duplication of activities, and facilitate a centralised collection, access and storage of patient data, enhancing coordination and flow between the different sections in the hospital. Electronic health record (EHR) in collecting and storing patient data is imagined to be the solution to mitigate the challenges posed by physical paper records. According to Participant C, *the compelling need for* ***electronic health records*** *is imminent, because electronic health records will create a centralised system of data collection, access and storage; thereby, eradicating error and duplication*. Polner, Main and Watts (2022) define EHRs as real-time, patient-centric records that make information obtainable and accessible immediately and securely to authorised users. EHRs are digital versions of paper patient records. Lee (2022) postulates that EHRs are a collection of information about a patient's health history, diagnoses, medication, tests, visits and treatment plans. EHRs are accessible and can be seen by all healthcare providers taking care of a patient, and can be used by them to provide tailored care and make recommendations. Boyles (2023) opines that collecting and storing patient data using EHRs improves and refines quality of care and provides complete information about patients at the point of care, as has been evidenced in countries like America, Australia, Argentina and Netherlands, to mention but a few. With the many benefits accrued by using EHRs, and many countries adopting EHRs, the same cannot be said about South Africa. Although some areas in South Africa have adopted the use of EHR systems, more than half of the public health sector still uses physical paper records (Katurura & Cilliers, 2018). On the other hand, Zharima, Griffiths and Goudge (2023) mention that, although South Africa has policies in place to implement EHRs, barriers like lack of national leadership and conflict, failure to understand the scope of the task required to achieve scale up, insufficient numbers of technically skilled staff, insufficient investment towards infrastructural needs such as hardware, software and connectivity obstruct the implementation of EHRs. Despite the negative prevailing circumstances around the implementation of EHRs in South Africa, Charles and Gabriel (2008) advise that hospitals should adopt a basic EHR keeping system to have a comprehensive view of patients, create better coordination of care, share information across disciplines and specialities, streamline workflows and reduce error.

The hospital collects two types of data: daily and monthly data. A response provided by Participant B further shows that the daily data collected, called midnight statistics, operates on a 24-hour basis. The data indicates daily admissions, discharges, deaths, movement from one ward to the other, and abscondment of patients. The data is collected on yellow pages by source points, and sent to the IM section every morning for interpretation, analysis and capturing. The data is stored electronically on Microsoft Excel workbooks, and the yellow pages are stored in filing cabinets. Reitano (2023) posits that hospitals collect two types of patient data: qualitative and quantitative data. Qualitative patient data involves gathering descriptive, detailed and expressive information that explores patients' diseases, sicknesses and related risk factors, while quantitative patient data delves into numerical information that can be used to predict future admissions, and can be measured and analysed using statistical methods. The daily data collected at Mankweng Hospital is quantitative in nature in that it indicates daily statistical fluctuation in wards movement.

4.2.3.2 Information systems used to manage information

The three participants were further asked about the information systems used to manage information at Mankweng Public Hospital. This was done so that the researcher can have an insight into the information systems that are currently in use to manage information. It was mentioned to the researcher that the information systems currently in use are mainly for reporting to the district and provincial office, and not used as reservoirs of data to draw from daily. Table 4.9 shows how participants responded to the question.

Table 4.9: Information systems used to manage information

Participant A	*Firstly, to manage information you will need the **District Health Information System (DHIS)**. This is the core in managing information and accepted as the national standard system for*

	capturing, storing, analysing and reporting of health data.
Participant B	*The section uses **Perinatal Problem Identification Program system (PPIP**) which is a highly useful system in evaluating and monitoring perinatal quality of care through auditing perinatal deaths.*
Participant C	*We also use **Child Healthcare Problem Identification Program system (Child PIP)** which is a bit similar to PPIP, but this one is an auditing system designed respectively for infants and children admitted to the paediatric ward.*

i. District health information system (DHIS)

Participant A made mention of the district health information system (DHIS), which is seen and recognised as the national standard system for capturing, storing, analysing and reporting health data. DHIS was established in South Africa in 1996, and was extended to the entire country by 2001 (Garrib, Herbst, Dlamini, McKenzie, Stoops, Govender & Rohde, 2008). Garrib et al (2008) further hold that the DHIS, developed to collect aggregated routine data from all public health facilities in a country, is intended to support decentralised decision-making and health service management. Being used in several developing countries in Africa and Asia, DHIS enables healthcare providers to have a holistic view of the quality of their service provision, forecast service needs, and evaluate and monitor performance in meeting health service targets (Jinabhai, Onwubu, Sibiya & Thakur, 2021).

ii. Perinatal problem identification program (PPIP)

Participant B said that the perinatal problem identification program system (PPIP) is employed to gather statistics on deliveries, stillbirths, early and late neonatal deaths and maternal deaths, enabling the counting and calculation of different rates. According to Rhoda, Greenfield, Muller, Prinsloo, Pattinson, Kauchali and Kerber (2014), PPIP was designed and developed in South Africa as a facility audit system for perinatal deaths. In the late 1990s, the system was only used by a few hospitals, but with South Africa aiming to achieve millennium development, the use of PPIP is now mandatory for all facilities delivering pregnant mothers and caring for newborns (Nonyane, Du Plessis & Clase, 2024). The introduction of the system was prompted by the alarming death rate of newborn babies; as such, being used as an audit tool, the system makes it possible to make real improvements in the quality of care babies and their mothers receive (mother-baby centric care), by evaluating the causes of deaths and risk factors, and implementing preventative strategies (Belizan, Bergh & Group, 2011).

iii. Child healthcare problem identification program (Child PIP)

Responses from Participant C show that the child healthcare problem identification program system (Child PIP) is used as a mortality auditing system designed respectively for infants and children admitted to the paediatric ward. Child PIP was introduced in South Africa since 2005, particularly in government hospitals, and has been utilised as an auditing tool for childhood deaths in children's wards (Patrick, Malherbe, Stephen, Woods & Aldous, 2018). The operations and concept of Child PIP are a little similar to PPIP, but Child PIP was specifically designed for infants and children admitted to paediatric wards. Moreover, Kauchali (2008) holds that Child PIP was introduced to improve the quality of healthcare for infants and children hospitalised in South Africa. This is one system developed to upgrade and advance pathway of child survival. Furthermore, two main activities constitute the Child PIP system: the mortality review process itself, and data management and analysis (Stephen, Mulaudzi, Kauchali & Patrick, 2009).

4.2.3.3 IM tools used to manage information

In this section, the participants were asked about the types of IM tools they use for managing information. This was done to create understanding of the tools information officers employ to manage information in the hospital. It was revealed to the researcher that the tools in use to manage information are not technological, but physical wards and clinics registers, and daily and monthly input forms unique to the ward speciality. Table 4.10 below depicts a clear picture of their responses.

Table 4.10: IM tools used to manage information

Participant A	*The section uses **physical wards and clinic registers** to manage information. These registers contain statistical information like admissions, discharges, transfers in/out, births, causes of deaths etc.*
Participant B	*The section has employed **traditional paper registers** in managing information, each ward uses a register unique to the ward speciality. The registers indicate all the movement happening in the hospital like admissions, discharges, deaths, births, transfer in and out, patients leaving the hospital without the knowledge of care providers (abscondments) and many others.*

Participant C	*Each ward uses **daily and monthly input forms** that are unique to the speciality of the ward. The source points populate the input forms, and the IM section uses those input forms for statistical calculations. These forms indicate the diseases unique to the different wards, causes of diseases, risk factors, medication etc.*

Responses from Participants A and B show that the IM tools used by the section to manage information are wards and clinic registers. These are physical registers unique to the ward speciality, populated by source points, and used by the IM section for statistical calculations. The registers indicate all the movement happening in the hospital like admissions, discharges, births, deaths, transfers in/ out, abscondments etc. Sund and Gissler (2022) allude that administrative registers in hospitals are utilised as recording tools to document events that essential for administrative, typically statistical purposes, and they cover causes of death, births, hospital discharges and population characteristics. Moreover, Kobrinski and Breusov (2019) note that registers can be designed for various purposes, these include preventive medical purposes, trailing of specific diseases, treatment, aftercare, skills and resources indices, prospective studies and specific information purposes.

Participant C made mention of daily and monthly input forms as tools used to manage information. These forms are extensive in nature, and they indicate diseases, causes of diseases, risk factors, medication, population characteristics. Input forms are used as supporting tools in hospitals to collect data for statistical inferences, and these forms include different diseases, biographical information of people affected, causes

of those diseases, the medication provided and possible risk factors (Rajula, Verlato, Manchia, Antonucci & Fanos, 2020).

4.2.4 Factors affecting the application of IM practices

The thought processes of the three participants were further traversed on the factors that affect and influence the application of IM practices at Mankweng Public Hospital. The researcher wanted to establish elements and components that exert influence on the application of IM practices. The responses given by the three participants were consistent (had already been mentioned and discussed narratively) and uniform: shortage of staff, shortage of equipment and incomplete data from source points. However, Participant A made mention of financial constraints (budget) as one of the key factors affecting the application of IM practices. Table 4.11 covers the responses of the participants.

Table 4.11: Factors affecting the application of IM practices

Participant A	*The factors that mainly affect the application of information management practices in the hospital are* ***shortage of staff, shortage of equipment, incomplete data from source points, and financial constraints (budget).***
Participant B	*The* ***incorrect submission of data from the wards*** *which forces the information officers to redo the submitted data.* ***Non-compliance regarding submission timeliness*** *also affects the application of information management practices. The* ***persistent acute shortage of staff, and lack of equipment*** *largely compromises*

	the application of information management practices in the hospital.
Participant C	***Staff allocation in the information management section is compromised,*** *the section is facing* ***shortage of staff****, which affects the application of information management practices****. Incomplete data from the wards.*** *The section lacks modern* ***functional equipment****, which then hampers the way in which we as information officers would like to apply certain information management practices.*

Participant A made mention of financial constraints (budget) as one of the factors that affect and influence the application of IM practices at Mankweng Public Hospital. Budgetary constraints and limitations have always been a life-long challenge in the healthcare sector, particularly in developing countries like South Africa. Financial constraints in the healthcare sector deprive hospitals of modern functional tools and equipment, cutting-edge technologies that are employed in developed countries, the recruitment of adequate staff and retention of highly specialised staff. Safarani, Ravaghi, Raeissi and Maleki (2018) allude that academic hospitals are facing severe financial problems, as a result, this leads to such hospitals failing to meet their trilateral (3) core activities: treatment, research and education. Safarani et al. (2018) further hold that due to financial constraints, a large portion of the budget is allocated to treatment, leaving the other two core activities of academic hospitals to suffer. A provocative submission is made by Participant A, saying that the *IM section in the hospital is always overlooked and not considered as one of the key components of*

successful service delivery. This is evident in the way in which the section always gets a much lesser share of the hospital budget, compared to the clinical module in the hospital. *Lack of equipment and staff in the section are further evidence of this.* Furthermore, IM departments are not treated with the respect they deserve, and such departments are always budget constrained. Prevet (2018) shares the same sentiments and postulates that, regular budget constraints in IM limits and affects the procurement of IT applications, updated and advanced hardware, more training interventions, recruitment of skilled information officers and better content management. The South African Ministry of Health has been constantly crippled by the ever-shrinking budget. However, inroads have been made where Health received a total of R848 billion over the medium-term expenditure framework, an increase compared to the previous years (Department of Health, 2024). This increase in budget is meant to address wage bill increase, infrastructure, the necessary tools and systems of care, and additional recruitment of healthcare staff in the country. Bearing in mind that South Africa is a country plagued by corruption, it remains to be seen whether the money will be used for its intended purpose or not.

Responses from Participant B and C show that incomplete and incorrect data from source points affect the application of IM practices. Tolera, Firdisa, Roba, Motuma, Kitesa and Abaerei (2024) hold that the main contributors to poor data in hospitals are doctors and nurses, because of five (5) key mistakes that they commit when handling data: data entry errors; duplicate data; outdated data; incomplete data; and lack of data standards. Participant B further laments that the incomplete and incorrect data submitted by source points forces information officers to redo the submitted data, in an attempt to maintain data integrity.

4.2.4.1 Challenges faced by information officers in meeting the information needs of healthcare professionals

Information officers are faced with wide ranging challenges in meeting the information needs of users. These range from organisational, management, technological and social. Participants were asked about the challenges they face in meeting and satisfying the information needs of healthcare professionals. Their responses are depicted in Table 4.12.

Table 4.12: Challenges faced by information officers

Participant A	*The biggest challenge that is detrimental to the section is **shortage of staff and equipment**. The source points also pose a challenge to the IM section with **late submissions**. Also, the **data submitted is incomplete**. There is **misunderstanding of data elements** by source points.*
Participant B	*The primary challenge faced by the section in meeting the information needs of healthcare professionals is **shortage of staff**. There **is lack of understanding of data elements and data definitions, and incomplete capturing of data** in the registers by source points. The section **lacks equipment**.*
Participant C	*The **staff shortage, lack of equipment and unavailability of Wi-Fi** in the section because in some instances, we are unable to attend meetings called by the head office. Another challenge being faced by information officers is the **incomplete data submitted** by source points. The source points **lack comprehension of data elements**.*

During the process of interviewing the three participants, the researcher realised that three responses/ aspects were recurrent in many of the questions asked, and foundational to the whole make-up and set-up of the IM section at Mankweng Public Hospital: shortage of staff, shortage of equipment and poor data from source points. The successes, challenges, influence-factors, operations of the section, and application of IM practices all depend on and stem from these three issues/ aspects. Responses from Participants A, B and C show that shortage of staff is one of the primary challenges that information officers are faced with in meeting the information needs of healthcare professionals at Mankweng Public Hospital. Hooiveld (2022) mentions that severe staffing shortages, with IM departments being no exceptions, have afflicted healthcare organisations in recent years, and with several factors chiming in to add to the affliction, like Covid-19 burnout, budget constraints, aging workforce and a significant number of resignations, the problem is only deepening.

According to the three participants, poor data submitted by source points often threatens the effectiveness and efficiency of the IM section. The data submitted is incomplete, at times submitted late, and the source points lack understanding of data elements and data definitions, which then obliges the information officers to redo the data submitted. Endriyas, Alano, Mekonnen, Hailu, Hailemariam, Ayele, Shiferaw, Kelaye, Misganaw and Samuel (2023) assert that the complexity of reporting forms and registers, inflexibility and low coverage of electronic health management information systems, knowledge gaps of indicators definitions and data handling are some of the contributing factors to poor healthcare data quality. The three participants suggest for intensive and rigorous training and learning interventions for the source points to cultivate understanding of data elements and data definitions.

Furthermore, the shortage of equipment incapacitates information officers from fully managing information and effectively applying IM practices. The three participants alluded to the shortage of equipment as a crippling barrier, and one of the overt causes of the many inefficiencies in the section. Yasar (2018) reiterates that appropriate information technology encompasses the usage of computers, storage, network and other physical devices and processes to create, process, store, secure and exchange

all forms of electronic data. The lack of such resources poses a challenge to the effective management of information.

4.2.5 IM strategies for improving IM practices

The three participants were further asked about strategies they would recommend for improving IM practices in hospitals. Considering that the participants have years of experience in IM, the researcher wanted to tap into that knowledge base and extract strategies that can be implemented in hospitals to improve IM practices. Their responses are portrayed in Table 4.13 below.

Table 4.13: Strategies for improving IM practices

Participant A	*The hospital should **appoint more information officers**. The procurement of the necessary **equipment like computers and printers** that will help in effectively applying IM practices should be prioritised. The hospital must improve and develop the **skills of staff**, both information officers and source points.*
Participant B	*The hospital should **recruit more information officers** based on the vastness of the hospital and provide them with working **resources like computers and printers.** The hospital must have **continued staff training programmes** for information officers to stay relevant, and source points also have to be trained in terms of being able*

	to read and understand indicators, data elements and data definitions.
Participant C	*The acquisition of **electronic health records** has to be prioritised to ensure a centralised process of data collection, access and storage. **Wi-Fi network** must be installed to facilitate the effective sharing of information across specialities and facilitate the attendance of meetings arranged by the head office.*

Responses provided by Participants A and B show that the hospital should recruit more information officers to help cater to the size and vastness of the hospital. Prior research has suggested that adequate staff boosts performance and organisational outcomes. Cheema and Asrar-ul-Haq (2017:677) share the same sentiments and hold that “staff is an imperative asset for any organisation, with most organisations disbursing noteworthy amounts of resources on staff hiring, to improve performance”. Participant A suggested that the hospital should recruit two (2) information officers, and one (1) data capturer. A good balance of information officers in hospitals have shown to play a major role in analysing, maintaining and storing data collected by doctors and nurses (Adebayo, 2019). Moreover, Participants A and B highlighted that the hospital should procure adequate equipment to help facilitate the effective management of information, as this equipment will allow the information officers room to fully apply IM practices in a way deemed fit and appropriate by them. The two participants further stated that modern functional computers, and a multifunctional printer should be procured to expedite effective processes of IM. Brooks (2023) is in agreement, and postulates that adequate equipment like computers capacitate information officers to store, organise and retrieve astronomical quantities of

information, and with advanced databases and search engines, information officers can lay hold of information with a few clicks.

Furthermore, the two participants stated that the hospital should initiate staff training programmes for both information officers and source points. Gesme, Towle and Wiseman (2010) opine that staff training in healthcare is important as the healthcare sector is constantly evolving, as such, it is imperative for hospitals to invest significantly in the training and development of their staff to ensure that they stay current and relevant with the latest developments and are aware of the full scope of services the hospital offers. Participant B stated that training for information officers will be to develop and harness their skills to stay relevant with modern trends in the health information arena, while training interventions for source points will be to develop and cultivate understanding of indicators, data element and data definitions. Additionally, Bygholm (2018) asserts that healthcare staff should be trained on the use of health information system inputs, indicator definitions and data elements to produce quality data.

Responses from Participant C further show that the hospital should acquire electronic health records (EHR) to create a centralised process of data collection, access and storage, as well as eradicate error and duplication of activities. According to Upadhyay and Hu (2022), the benefits of EHR are extensive and far-reaching for hospitals not to implement EHR. These include evidence-based decision-making and streamline providers' workflow through efficient coordination of patient care. Moreover, EHR reduce costs through decreased paperwork, improved safety, reduced duplication of testing, boosts patient engagement and increases efficiency (Menachemi & Collum, 2011). In addition, Participant C highlighted that the hospital should install Wi-Fi network to enable seamless sharing of information across different levels and specialities, as well as enable information officers to attend virtual meetings arranged by the head office. Wi-Fi is no longer about opulence and luxury, but an essential requirement in organisations. With Wi-Fi, organisations benefit from faster internet access, improved communication and better project collaboration (Pahlavan & Krishnamurthy, 2020).

4.3 CHAPTER SUMMARY

This chapter presented data collected from semi-structured interviews. The target population came from Mankweng Public Hospital information management section. The responses were presented in tables in the actual words of the participants, arranged into themes which were categorised according to the objectives of the study. The focal point of IM at Mankweng Public Hospital is to foster the use of information, and assist in providing quality healthcare services.

It has been noted that IM at Mankweng Public Hospital helps in providing quality healthcare services, especially at the point of care. However, shortcomings such as shortage of staff, shortage of equipment, poor data from source points and lack of staff training have plagued the effective rendition of the IM section at Mankweng Public Hospital. It is believed that the recruitment of more staff, procurement of equipment, acquisition of electronic health records, continued staff training and installation of Wi-Fi can help in addressing these shortcomings. The next chapter provides the interpretation and discussion of findings.

CHAPTER FIVE

MAJOR FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

The previous chapter provided a comprehensive presentation, analysis and interpretation of the research data collected through semi-structured interviews. This chapter summarised major findings with a view to deduce inferences, and make recommendations based on the research findings. The aim of the study, as delineated in 1.4, was to examine IM practices at Mankweng Public Hospital, Limpopo Province, South Africa. By way of attaining this goal, the objectives of the study were:

- To measure the awareness of information officers regarding users' information needs at Mankweng Public Hospital.
- To determine perceptions of information officers towards IM at Mankweng Public Hospital.
- To identify the IM tools used by information officers at Mankweng Public Hospital.
- To establish the factors that affect the application of IM at Mankweng Public Hospital.
- To recommend IM strategies that can be implemented at Mankweng Public Hospital.

This chapter, consequently, encompasses a brief discussion of the major findings and conclusions provided in line with the objectives of the study, along with recommendations.

5.2 MAJOR FINDINGS

This section provides a summary of the major findings extracted from the data collected. These are presented pursuant to the objectives of the study.

5.2.1 Awareness of information officers on users' information needs

The results of the semi-structured interviews with three (3) information officers in the IM section at Mankweng Public Hospital showed that the officers recognise, and are aware of users' information needs. It was established that quarterly meetings are constituted to discuss the information needs, challenges and possible solutions with all the source points in the hospital. The participants hinted that these quarterly meetings are treated as "user studies", where source points are observed and analysed to understand where their need for information stems from, the channel which they best prefer to receive information (one that is compatible with their working habits), their preferences and opinions. The meetings are used to refine and redefine the information needs of source points. In addition, these meetings are used to help source points to discover and establish information needs they have, but were not aware of.

5.2.2 Perceptions of information officers

Perception is individualistic, and entails the way in which one regards, sees and interprets something. It was picked up that the information officers have different perceptions regarding IM practices at Mankweng Public Hospital. The participants believe that IM is important, and plays a crucial role in the successful delivery of healthcare services. However, it was noted that poor data from source points is believed to be a constant burden hampering the effectiveness of the IM section. Another finding showed that lack of continuous staff training hampers the development and cultivation of expertise, while lack of a larger office space hampers a coordinated information storage.

5.2.3 IM tools used by information officers

These formed part of how data is collected. It was revealed that the IM section uses physical collection tools to manage information. These tools are unique to the ward speciality. These include wards and clinic registers which contain statistical information such as admissions, discharges, transfers in/ out, births, causes of deaths, abscondment. Other tools used to manage information are daily and monthly input

forms which contain lists of diseases, causes of diseases, risk factors and medication. These collection tools are populated by source points, and sent to the IM section for processing and analysis.

5.2.4 Factors affecting the application of IM

Findings from the semi-structured interviews showed that shortage of staff is one of the major factors affecting the application of IM. The participants highlighted that the hospital is one of the largest academic hospitals in the country, and shortage of staff leaves the current information officers thinned out, and at times unable to manage the workload. The other factor affecting the application of IM appears to be shortage of equipment. From what has been observed, the section only has two computers and one laptop which often freezes. Further, the section uses a small printer which is not multifunctional. Incomplete data from source points was also believed to be a factor influencing the application of IM practices. Financial constraints and lack of adequate budget in procuring the necessary tools and equipment to support the efficient operation of the IM section was also a factor affecting the application of IM practices as raised by the participants.

5.2.5 IM strategies

Upon thorough deliberation with the participants, it was recommended that the recruitment of more information officers is essential, and can help in boosting performance and catering for the multifaceted information needs of users. Another strategy that was deemed foundational to the performance of the IM section was the procurement of modern functional computers and a multifunctional printer. Such equipment can help in expediting the management of information. Furthermore, staff training was seen as imperative for the development and cultivation of staff expertise. It was recommended that information officers should be trained to stay up-to-date with modern trends in the health information arena. Training interventions were also recommended for source points to assist them in gaining knowledge and comprehension of data indicators, data elements and data definitions to help produce quality data. Another finding showed that the procurement of electronic health records

can help in creating a centralised process of data collection, access and storage, as well as eradicate error and duplication of activities. The installation of Wi-Fi was seen as important to facilitate the seamless sharing of information across all specialities, and enable information officers to attend virtual meetings arranged by the head office.

5.3 CONCLUSION

This section draws conclusions from each of the objectives of the study.

5.3.1 Awareness of information officers on users' information needs

It was noted from the study that information officers know and are aware of the users' information needs. Quarterly meetings between information officers and source points play a key role in helping the information office know the information needs of all the different source points in the hospital. The constituted quarterly meetings is a tradition that must be kept alive to ensure that there is no information discord between the information office and source points.

5.3.2 Perceptions of information officers

Different standpoints were presented, including poor data from source points, lack of continuous staff training and lack of a larger office space. Remedial initiatives need to be taken by the hospital management to redress these imbalances.

5.3.3 IM tools used by information officers

With the worrisome discovery being made that the section still uses physical paper records to collect data, the necessary budget is needed to procure electronic collection tools. The hospital should capitalise on the advent of electronic collection tools, with particular focus on producing reusable quality data.

5.3.4 Factors affecting the application of IM

The effective application of IM practices is dependent on adequate staff, modern functional machinery and adequate budget. These are the determinant factors/

components which influence the effective application of IM practices. But to the detriment of Mankweng Hospital, all these components are lacking in the IM section. It must be said that IM has to be treated with the respect it deserves in the country, starting with the national government, cascading down to hospital managements. IM sections must be furnished with adequate staff, equipment and budget.

5.3.5 IM strategies

The recruitment of staff, procurement of equipment, electronic health records, training interventions and installation of Wi-Fi were some of the strategies that were believed to be very useful in aiding the effective application of IM practices. It has been noted from the study that the successful implementation and application of IM practices at Mankweng Public Hospital is not instant and still has a long way to go. It will take some time before the IM practices at the hospital reach a level deemed satisfactory. However, reviewed literature has made known of the progress and initiatives being implemented by other international countries. These progressive initiatives implemented by international organisations can be used as a point of reference by other countries having direct interest and wishing to learn about IM. There is, therefore, a need to fraternise and gauge against what is being successfully implemented in these international organisations by other institutions wishing to learn about IM such as Mankweng Public Hospital.

5.4 RECOMMENDATIONS

The current study recognised that the information needs of users will not be effectively serviced if the current IM practices are not improved in the near future. Should the current IM practices not be addressed in the immediate future, service delivery and access to crucial patient information, especially at the point of care will be compromised. By way of trying to improve the current IM practices, this study makes recommendations that may help in addressing the issues and challenges picked up from the semi-structured interviews with a view to refine and boost IM practices at Mankweng Public Hospital. These recommendations would also serve as a pathway

of strengthening the processes and procedures involved in the management of information at the hospital.

5.4.1 Perceptions of information officers

- It is evident from the study that the section produces astronomical quantities of information daily, and there is a continued and sustained proliferation of information, taking into account the size of the hospital. However, participants highlighted that the section has a small office space, prohibiting a coordinated storage of information. It is therefore recommended that the hospital management should look into providing the section with a larger office space.

5.4.2 IM tools

- The government should consider speeding up the implementation of electronic health records in all the hospitals in the country, particularly academic hospitals due to their trilateral mission to provide care, teach and foster research. This is informed by the fact that many hospitals, Mankweng Public Hospital included, still use physical collection tools to manage information. With the healthcare sector embracing and heading towards the advent of electronic tools, the procurement of electronic health records at Mankweng Public Hospital will eradicate error and duplication, and create a centralised process of data collection, access and storage.
- Information officers and source points as two key stakeholders in the creation and management of information should acquaint and update themselves with new electronic tools in the market.

5.4.3 Factors affecting the application of IM

- The Mankweng Public Hospital management must ensure that the IM section receives an adequate share of the hospital budget to facilitate the procurement of IT applications, the necessary hardware and adequate human resource. However, this is an initiative that must start from the national government. The

ministry of health must be provided with the necessary budget that will help address the maladies faced by hospitals. Hospital managements must also treat IM as one of the key components of successful service delivery and furnish the necessary budget to ensure the efficient operation of said section/ department.

- ❖ It was picked up from this study that the IM section is understaffed, which leads to the current information officers being thinned out, and not able to cope with the workload. The hospital must recruit more information officers that will help cater for the size of the hospital.
- ❖ Mankweng Public Hospital must procure the necessary equipment that will help information officers to better manage information. The acquisition of computers and a multifunctional printer will advance the processes and procedures of managing information.
- ❖ It emerged from this study that source points lack mastery and comprehension of data indicators, data elements and data definitions leading to the generation of poor data. It was also highlighted that information officers ought to be up to date with the current trends in the health information arena. It is therefore recommended that staff training programmes should be initiated for these two key stakeholders.
- ❖ The hospital must install a Wi-Fi network to facilitate the seamless sharing of information and enable information officers to attend virtual meetings.

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ANNEXURE A: TREC application form

APPLICATION FOR ETHICAL APPROVAL OF RESEARCH INVOLVING HUMAN PARTICIPANTS

This application form should be completed for any research involving human participants conducted in or by the University by postgraduate students and staff members.

Applications should be made on this form, and submitted electronically, to the Research Ethics Officer. Only an electronic copy of the form should be submitted separately via email. Applications will be assessed by the Research Ethics Officer in the first instance, and then passed to the TREC (the University's Ethics Committee). A copy of your research proposal and any necessary supporting documentation (e.g. consent form, data collection tool, faculty approval letter etc.) should be submitted separately with this form.

1. **Title of project: Information Management Practices at Mankweng Public Hospital, Limpopo Province, South Africa.**

2. Principal Investigator (i.e. name of student)

Title, Initials and Surname	Qualification: *(please write it in full)*
Mr PTT Phoshoko	Master Information Studies

3. Name of Co-Investigator(s):

Name:	Department: *(Indicate if the supervisor is from another institution)*
Ms T Moraka	Communications, Media and Information Studies
Prof ST Bopape	Communications, Media and Information Studies

4. **E-mail address: 201813395@keyaka.ul.ac.za**

5. **Student Number: 201813395**

Declaration of Principal Investigator:

The information contained in this application, including any accompanying information, is, to the best of my knowledge, complete and correct. I/we declare that the information provided is correct and accept responsibility for the conduct of the procedures set out in this application in accordance with the guidelines

Name(s) in block capitals: PHILLY TLOU TSHEGOFATSO PHOSHOKO

Date: 06/05/2023

ANNEXURE B: TREC certificate

University of Limpopo
Department of Research Administration and Development
Private Bag X1106, Sovenga, 0727, South Africa
Tel: (015) 268 3935, Fax: (015) 268 2306, Email: tukiso.sewapa@ul.ac.za

TURFLOOP RESEARCH ETHICS COMMITTEE

ETHICS CLEARANCE CERTIFICATE

MEETING: **26 SEPTEMBER 2023**

PROJECT NUMBER: **TREC/1542/2023: PG**

PROJECT:

Title:	Information Management Practices at Mankweng Public Hospital, Limpopo Province, South Africa
Researcher:	PTT Phoshoko
Supervisor:	Ms T Moraka
Co-supervisor:	Prof ST Bopape
School:	Languages and Communications
Degree:	Master of Information Studies

PROF D MAPOSA
CHAIRPERSON: TURFLOOP RESEARCH ETHICS COMMITTEE

The Turfloop Research Ethics Committee (TREC) is registered with the National Health Research Ethics Council, Registration Number: **REC-0310111-031**

Note:

i) **This Ethics Clearance Certificate will be valid for one (1) year, as from the abovementioned date. Application for annual renewal (or annual review) need to be received by TREC one month before lapse of this period.**

ii) **Should any departure be contemplated from the research procedure as approved, the researcher(s) must re-submit the protocol to the committee, together with the Application for Amendment form.**

iii) **PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES.**

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ANNEXURE C: Covering letter

University of Limpopo

Dear Sir/Madam

INFORMATION MANAGEMENT PRACTICES AT MANKWENG PUBLIC HOSPITAL, LIMPOPO PROVINCE, SOUTH AFRICA.

I am writing this letter to seek your help in a study that I am carrying out. Specifically, I am aiming to establish the information management practices that are prevalent at Mankweng Public Hospital, and how they impact on productivity.

Mankweng Public Hospital has been chosen because the study will focus on information management practices. The research study will be carried out within the hospital using information management officers.

You will see in the enclosed interview that the questions are simple, and it may take less than 20 minutes to answer them. The anonymity of your name is guaranteed, and the answers given will remain confidential.

Thank you.

Yours sincerely

Phoshoko PTT

ANNEXURE D: Authorisation letter from the Department of Health

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
HEALTH

Ref : LP_2023-12-001
Enquires : Legodi P
Tel : 015-293 6028/6410
Email : Malesela.Legodi@dhsd.limpopo.gov.za

MR PTT PHOSHOKO

PERMISSION TO CONDUCT RESEARCH IN DEPARTMENTAL FACILITIES

Your Study Topic as indicated below;

INFORMATION MANAGEMENT PRACTICES AT MANKWENG PUBLIC HOSPITAL, LIMPOPO PROVINCE, SOUTH AFRICA

1. Permission to conduct research study as per your research proposal is hereby Granted.
2. Kindly note the following:
   a. Present this letter of permission to the office of Clinical Executive Director a week before the study is conducted.
   b. This permission is **ONLY** for Mankweng Hospital.
   c. In the course of your study, there should be no action that disrupts the routine services or incur any cost on the Department.
   d. After completion of study, it is mandatory that the findings should be submitted to the Department to serve as a resource.
   e. The researcher should be prepared to assist in the interpretation and implementation of the study recommendation where possible.
   f. **The approval is only valid for a 1-year period.**
   g. If the proposal has been amended, a new approval should be sought from the Department of Health
   h. Kindly note that, the Department can withdraw the approval at any time.

Your cooperation will be highly appreciated.

pp **Head of Department** 5/2/2024 **Date**

Private Bag X9302, Polokwane 0700
Fidel Castro Ruz House, 18 College Street, Polokwane 0700
Tel: 015 293 6000. Fax: 015 293 6211. Website: www.doh.limpopo.gov.za

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ANNEXURE E: Authorisation letter from Mankweng Public Hospital

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH
MANKWENG HOSPITAL

Ref: 5/3/1/2
Enq: Modula MC
Tel: 015 286 1042/1030
Email:motlatso.modula@dhsd.limpopo.gov.za
From: HR Training and Development

TO :Mr Philly Tlou Tshegofatso Phoshoko

PERMISSION TO CONDUCT RESEARCH AT MANKWENG HOSPITAL

1. The above matter has reference.
2. This is to confirm that the CEO has granted you permission to conduct research on

"INFORMATION MANAGEMENT PRACTICES AT MANKWENG PUBLIC HOSPITAL , LIMPOPO PROVINCE , SOUTH AFRICA."

3. We wish you all the best with your research.

Yours in service delivery

Dr. Siebani MS
Chief Executive Officer (Acting)

20 / 02 / 2024
Date

Private Bag Xl 117, SOVENGA, 0727 Tel: 015 286 1000 Fax: 015 267 0206
Houtbos Road, Sovenga
The heartland of Southern Africa — development is about people!

ANNEXURE F: Consent cover letter

Dear Respondent

My name is Phoshoko PTT. I am currently doing my master's degree in the Programme of Information Studies, University of Limpopo. I am undertaking a research project which attempts to establish information management practices at Mankweng Public Hospital.

This study will help Mankweng Public Hospital to find out whether the information management practices at the hospital are effective and if they help enhance productivity and strategic decision-making. The study will assist information officers under the information management department to find out if the processes and procedures used to manage information benefit the users.

Please understand that you are not being forced to take part in the interviews. However, I would really appreciate it if you do participate in this study. If you choose not to take part in the interviews, you will not be affected in any way. If you agree to participate, you may stop at any time and tell me that you cannot continue taking part in the interviews. If you do this, there will also be no penalties.

Confidentiality will be observed professionally. Your names will not be recorded anywhere, and no one will be able to link you to the answers you give. Only the researcher will have access to the unlinked information. The information will remain confidential and there will be no "come-backs" from the answers you give. The interview will take only 20 minutes of your time.

If you have concerns or questions about this study, please contact: Researcher: Philly Phoshoko: Cell: 0761865197, Email: phillytlouphoshoko@gmail.com OR the Supervisor: Ms. T Moraka at: Tel: 015 268 3194, Email: thereza.moraka@ul.ac.za.

Yours Sincerely

Phoshoko PTT

ANNEXURE G: Consent form

CONSENT FORM

I agree to participate in the interview of the study upon the following conditions, and shall freely withdraw from the participation should I feel that the conditions are not being met:

1. The researcher has explained to me in comprehensive terms the nature and purpose of the study.

2. My participation is voluntary, and I have the right to withdraw without risking any penalty or loss.

3. That I shall remain anonymous in the study and that raw data from participation or any other interactions during the study will remain confidential. The data will not be used to disadvantage me, that no person other than the researcher, the supervisor, and me will have access to the raw data.

4. I give the researcher permission to record me during the interview.

…… …… ……

Respondent Date Place

ANNEXURE H: Interview schedule

"INFORMATION MANAGEMENT PRACTICES AT MANKWENG PUBLIC HOSPITAL, LIMPOPO PROVINCE, SOUTH AFRICA."

The aim of the study is to establish information management practices at Mankweng Public Hospital, Limpopo Province, South Africa.

INSTRUCTIONS:

Kindly respond to all the questions

This interview schedule consists of a few questions

Where space is limited, use the next page and indicate the question number

SECTION A: DEMOGRAPHIC PROFILE OF PARTICIPANTS

1. Position ……
2. Highest qualification obtained……
3. Number of years in your position……

SECTION B: AWARENESS OF INFORMATION NEEDS

4. Can you describe your role as an information officer at Mankweng Public Hospital and how it relates to your understanding of users' information needs?
5. Who are the primary users of information in your custody?
6. For what purpose do they use that information?

SECTION C: PERCEPTION TOWARDS IM

7. In your opinion, what role do you think information officers play in improving the overall quality of healthcare service delivery?
8. How can information officers' work be supported?
9. How would you describe your perception of information management practices at Mankweng Public Hospital?
10. How do you think the information management culture at Mankweng Public Hospital contributes to meeting users' information needs?

SECTION D: TOOLS USED FOR MANAGING INFORMATION

11. How does the hospital collect and store patient data?

12. What types of information systems are currently in use?

13. What types of information management tools do you use to manage information in your work?

SECTION E: FACTORS AFFECTING IM

14. What factors do you think affect the application of information management practices at Mankweng Public Hospital?

15. In your opinion, what are some of the challenges faced by information officers in meeting the information needs of health professionals?

SECTION F: STRATEGIES FOR IMPROVEMENT OF IM

16. Based on your experience as an information officer, what strategies do you recommend to improve information management practices in hospitals?

Thank you for your participation in this interview!!!!