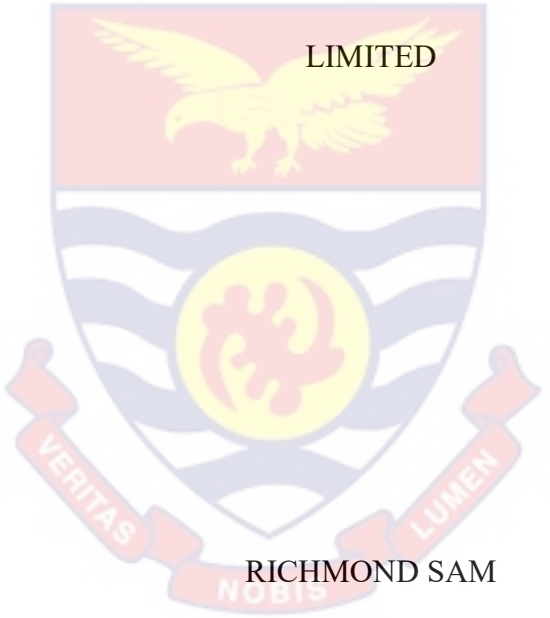
UNIVERSITY OF CAPE COAST

# ELECTRONIC HEALTH RECORDS SYSTEM AND QUALITY HEALTHCARE OF ACCRA MEDICAL CENTRE, GOLDFIELDS GHANA LIMITED




RICHMOND SAM

2024

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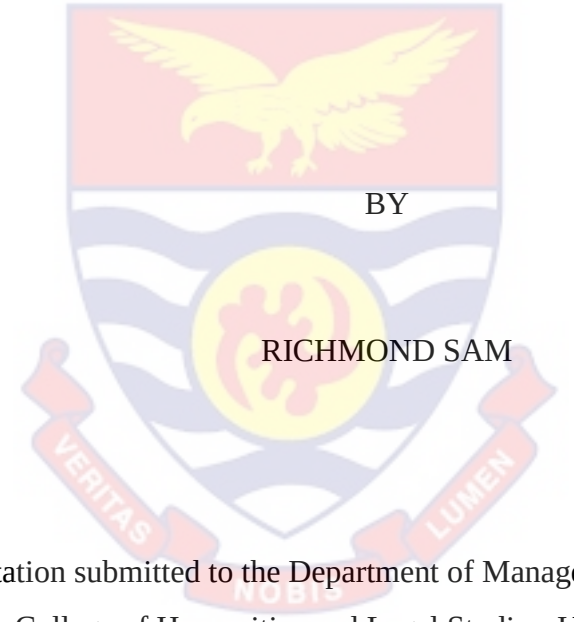

BY

RICHMOND SAM

Dissertation submitted to the Department of Management of the School of Business, College of Humanities and Legal Studies, University of Cape Coast, inpartial fulfillment of the requirements for award of Master of Business Administration degree in General Management

MARCH 2024

# DECLARATION

## Candidate's Declaration

I hereby declare that this dissertation is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature: …….. Date: .....

Name: Richmond Sam

## Supervisor's Declaration

I thereby state that the preparation and presentation of the dissertation were supervised in accordance with the dissertation supervision guidelines set out by the University of Cape Coast.

Supervisor's Signature: ..... Date: .....

Name: Dr. Nick Fobih

## ABSTRACT

The study focused on assessing the effect of electronic health records system and quality healthcare: the case of the Accra Medical Centre at the Tarkwa mines (Goldfields Ghana limited). The qualitative approach as well as descriptive research design was used for the research. The study also examined the impact of the EHR to healthcare delivery by identifying the benefits and challenges of the implemented system. With a quantitative approach, data was gathered from the users of the system and the system administrators using in- structured questionnaires. Results indicated sufficient preparations made by the hospital prior to the systems introduction through thorough understudying of other implemented systems in other hospitals, the establishment of an Information Technology (IT) department, provision of infrastructure and network connections, and the training of staff. Simple random sampling as well as the purposive sampling under non-probability technique was the sampling method used. Descriptive statistical tools were employed to analysis the demographic characteristics of the respondents. Whereas regression analysis was used to assess the influence electronic health records system and quality healthcare: the case of Accra Medical Centre in the Tarkwa mines (Goldfields Ghana Limited). The research therefore concludes that the hospital should support and sustain the HER scheme and that concrete measures should be taken to curb evolving difficulties faced by the use of the EHR scheme. Implement a change management strategy to address resistance to new technologies.

## ACKNOWLEDGEMENTS

I wish to express my sincere appreciation to Dr. Nick Fobih, my supervisor, for his valuable supervision. I also use this chance to show case my deepest gratefulness to my wife, my parents, my children and my siblings for all the support and encouragement through these years. Lastly, I would like to appreciate the effort and contribution of friends and loved ones who motivated and encouraged me for higher studies.

## DEDICATION

To my parents, my wife and children

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## LIST OF ACRONYMS

| | |
|---|---|
| AMC | Accra Medical Centre |
| ANT | Actor Network Theory |
| CDS | Clinical Decision Support |
| CMR | Computerized Medical Record |
| CPOE | Computerized Physician Order Entry |
| EHRs | Electronic Medical Record Systems |
| EHS | Electronic Health System |
| HIE | Health Information Exchange |
| HIS | Health Information System |
| ICT | Information and Communication Technology |
| MOH | Ministry of Health |
| MSP | Medical Service Provider |
| SDGs | Sustainable Development Goals |
| TAM | Technology Acceptance Model |
| UCC | University of Cape Coast |
| UPS | Uninterrupted Power Supply |
| WHO | World Health Organisation |

# CHAPTER ONE

# INTRODUCTION

Healthcare professionals rely on Health Records Systems to access and share important clinical information efficiently. Due to the large volume of patient data that health institutions must manage, Electronic Health Records (EHRs) have been implemented. EHRs are digital records of health-related information created and used by authorized staff within a single healthcare facility. These systems not only enhance patient care and safety but also improve workflow efficiency. An Electronic Health System (EHS) serves as a real-time, patient-centered digital version of a paper chart, making data instantly accessible and secure for authorized users. It must contain accurate and sufficient information to identify the patient, support diagnosis, justify treatment, document care, and ensure continuity among healthcare providers. This section presents an overview of the study on Electronic Health Records, covering its operations and impact on care quality. It includes the study's background, problem statement, purpose, objectives, significance, scope, structure, and a chapter summary.

## Background to the Study

The adoption of Electronic Health Records (EHR) systems has become a cornerstone in modern healthcare delivery, revolutionizing how medical data is stored, retrieved, and utilized to enhance patient care. EHRs are digital versions of patients' paper charts, providing real-time, patient-centered records that make information available instantly and securely to authorized users (HealthIT.gov, 2020). The global healthcare sector has increasingly embraced EHRs due to their potential to improve clinical decision-making, reduce

medical errors, and enhance operational efficiency. However, the extent to which EHRs contribute to quality healthcare varies depending on implementation strategies, infrastructural support, and user adaptability. This study examines the impact of EHR systems on healthcare quality at ACCA Medical Centre, Goldfields Ghana Limited, within the broader context of global and regional trends.

Globally, the adoption of EHR systems has been linked to significant improvements in healthcare quality. According to the World Health Organization (WHO, 2021), countries with well-integrated EHR systems report 30% fewer medical errors, 20% faster diagnosis, and 15% improvement in patient outcomes. In the United States, where EHR adoption is nearly universal in hospitals, studies indicate that EHRs contribute to a 27% reduction in medication errors and a 35% improvement in care coordination (Adler-Milstein et al., 2020). Similarly, in Europe, a study across 12 countries found that EHR implementation led to a 25% increase in preventive care services and a 40% reduction in duplicate testing (European Commission, 2022). These statistics underscore the transformative potential of EHRs in enhancing healthcare quality, efficiency, and patient safety.

In Africa, EHR adoption has been slower but is gaining momentum due to increasing digitalization efforts. A report by the African Union (2022) indicates that only 30% of healthcare facilities in Sub-Saharan Africa have fully functional EHR systems, compared to 90% in North America. Despite this, countries like Kenya, South Africa, and Nigeria have recorded significant improvements in healthcare delivery following EHR implementation. For instance, a study in Kenya revealed that EHRs reduced patient wait times by

40% and improved record-keeping accuracy by 50% (Mwangi et al., 2021). In Ghana, the government has been promoting digital health initiatives, including EHRs, under the Ghana Health Service's Digital Health Strategy (2020-2025). However, challenges such as limited infrastructure, high costs, and resistance to change hinder widespread adoption (GHS, 2021).

At ACCA Medical Centre, Goldfields Ghana Limited, the introduction of an EHR system aims to streamline healthcare delivery, improve patient data management, and enhance clinical outcomes. Goldfields Ghana Limited, a leading mining company, operates the medical center to provide healthcare services to employees and surrounding communities. Given the industrial setting, efficient healthcare delivery is crucial to managing occupational health risks and ensuring timely medical interventions. The EHR system at ACCA Medical Centre is expected to facilitate better patient tracking, reduce paperwork, minimize errors, and improve communication between healthcare providers. However, the extent to which these benefits are realized remains to be empirically assessed.

The relationship between EHR systems and healthcare quality can be understood through several key variables: data accuracy, accessibility, efficiency, and patient satisfaction. Data accuracy ensures that healthcare providers have reliable patient histories, reducing misdiagnoses and inappropriate treatments. Accessibility allows for seamless information sharing among clinicians, enhancing care coordination. Efficiency is reflected in reduced administrative burdens and faster service delivery, while patient satisfaction measures the perceived improvement in care quality. Empirical studies support these linkages. For example, a study by Jones et al. (2019)

found that EHRs improved diagnostic accuracy by 22% due to comprehensive patient data availability. Another study by Boonstra & Broekhuis (2020) highlighted that EHRs enhanced operational efficiency by 30% by automating routine tasks.

Despite these benefits, challenges persist, particularly in resource-limited settings like Ghana. A study by Osei et al. (2021) on EHR implementation in Ghanaian hospitals identified poor internet connectivity, lack of technical expertise, and high maintenance costs as major barriers. Similarly, Amoakoh-Coleman et al. (2020) found that while EHRs improved record-keeping, health worker resistance due to inadequate training slowed adoption. These findings suggest that successful EHR integration requires not only technological infrastructure but also organizational readiness and continuous staff training.

This study seeks to bridge the gap between global EHR benefits and local implementation realities at ACCA Medical Centre. By evaluating the impact of EHRs on healthcare quality, the research will provide insights into how effectively the system functions in an industrial healthcare setting in Ghana. The findings will contribute to policy recommendations for optimizing EHR use in similar environments, ensuring that the potential benefits observed in advanced healthcare systems are replicated in Ghana.

In summary, EHR systems have demonstrated substantial improvements in healthcare quality worldwide, from reducing medical errors to enhancing patient care coordination. However, their effectiveness in developing countries like Ghana depends on overcoming infrastructural and human resource challenges. At ACCA Medical Centre, assessing the EHR

system's impact will provide valuable data for improving healthcare delivery in industrial and community health settings. By drawing on global statistics and empirical studies, this research will contextualize the relationship between EHR adoption and healthcare quality, offering evidence-based strategies for sustainable digital health transformation.

**Statement of Problem**

The integration of Electronic Health Records (EHR) systems into healthcare delivery has been widely recognized as a critical driver of improved patient care, operational efficiency, and clinical decision-making. However, despite the global advancements in digital health, many healthcare facilities in Ghana, including the Accra Medical Centre (AMC) operated by Goldfields Ghana Limited, continue to face challenges in fully leveraging EHR systems to enhance quality healthcare. Quality healthcare, as defined by the Institute of Medicine (IOM), encompasses six key dimensions: safety, effectiveness, patient-centeredness, timeliness, efficiency, and equity (IOM, 2001). While EHRs have the potential to optimize these dimensions, their implementation in resource-constrained settings like Ghana is often hindered by technological, infrastructural, and human resource barriers, leading to suboptimal healthcare outcomes.

A critical problem affecting the Accra Medical Centre is the inefficient utilization of its EHR system, which limits its contribution to quality healthcare. Despite the adoption of digital records, the facility continues to experience delays in patient data retrieval, inconsistencies in record-keeping, and poor interoperability between departments. These inefficiencies contribute to medical errors, prolonged patient wait times, and fragmented care

coordination, undermining the overall quality of healthcare services. According to Amoakoh-Coleman et al. (2020), many Ghanaian healthcare facilities struggle with EHR implementation due to inadequate technical support, intermittent power supply, and insufficient staff training. At AMC, these challenges are compounded by the high patient turnover typical of industrial medical centers, where timely and accurate healthcare delivery is crucial for occupational health management.

The relevance of this problem lies in its direct impact on patient safety and healthcare efficiency. Medical errors, often stemming from incomplete or inaccurate EHR data, pose significant risks to patients, particularly in an industrial setting where occupational hazards require precise medical documentation. Studies indicate that poor EHR usability contributes to approximately 30% of medication errors in healthcare facilities with partial digitalization (Jones et al., 2019). Furthermore, inefficient EHR systems lead to longer patient wait times, reducing the facility's ability to provide timely care—a key dimension of quality healthcare. In mining communities like those served by Goldfields Ghana Limited, delays in medical attention can exacerbate workplace injuries and chronic conditions, leading to increased absenteeism and reduced productivity (Ghana Health Service [GHS], 2021). Addressing these EHR-related inefficiencies is therefore essential not only for improving patient outcomes but also for sustaining workforce health and operational continuity in industrial settings.

An empirical review of existing literature reveals that while EHR systems have transformed healthcare delivery in high-income countries, their impact in low- and middle-income countries (LMICs) like Ghana remains

understudied. In the United States and Europe, EHR adoption has been associated with 25-40% improvements in care coordination and a significant reduction in duplicate testing (Adler-Milstein et al., 2020; European Commission, 2022). However, similar studies in Sub-Saharan Africa highlight persistent challenges, including low digital literacy among healthcare workers, unreliable internet connectivity, and resistance to change (Mwangi et al., 2021). In Ghana, research by Osei et al. (2021) found that only 40% of healthcare professionals in tertiary hospitals were proficient in using EHR systems, leading to inconsistent data entry and retrieval. Another study by Boonstra & Broekhuis (2020) emphasized that organizational culture and leadership support play a crucial role in EHR success—a factor often overlooked in Ghanaian healthcare settings.

Despite these insights, a significant gap exists in literature regarding EHR functionality in industrial healthcare facilities such as the Accra Medical Centre. Most studies on EHR adoption in Ghana focus on public hospitals and urban health centers, neglecting the unique dynamics of corporate healthcare systems that serve mining and industrial workers. Industrial medical centers face distinct challenges, including the need for rapid emergency response, occupational health tracking, and integration with company-wide health policies. Yet, there is limited empirical evidence on how EHR systems can be optimized in such environments to ensure quality healthcare. This study seeks to fill that gap by examining the specific barriers and opportunities for EHR effectiveness at AMC, providing tailored recommendations that align with both healthcare best practices and industrial health requirements.

The inefficient utilization of EHR systems at Accra Medical Centre presents a critical problem that directly affects quality healthcare delivery in terms of safety, efficiency, and patient-centered care. The relevance of this issue extends beyond clinical outcomes, impacting workforce health and industrial productivity. While global evidence highlights the transformative potential of EHRs, LMICs like Ghana face unique implementation challenges that require context-specific solutions. The existing literature gap on EHR performance in industrial medical centers underscores the need for this study, which will provide empirical data on EHR effectiveness and propose strategies for optimizing digital health systems in corporate healthcare environments. Addressing these challenges will not only improve healthcare quality at AMC but also serve as a model for other industrial health facilities in Ghana and beyond.

**Purpose of the Study**

The main purpose of the study was to analyse the effect of electronic health record systems and quality healthcare at Accra Medical Centre at Tarkwa Mines.

**Research Objectives**

Specifically, the study sough;

1. To analyse the effect of electronic health record systems on quality healthcare, Accra Medical Centre at Tarkwa Mines.
2. To examine the benefits in the usage of electronic health record system at Accra Medical Centre at Tarkwa Mines.
3. To examine the challenges affecting the utilization of electronic health record system at Accra Medical Centre, Tarkwa Mines.

**Research Questions**

1. What is the effect of electronic health record systems on quality healthcare, Accra Medical Centre at Tarkwa Mines?
2. What are the benefits in the usage of electronic health record system at Accra Medical Centre at Tarkwa Mines.
3. What are the challenges affecting the utilization of electronic health record system at Accra Medical Centre, Tarkwa Mines?

**Significance of the Study**

An investigation into the ways in which the deployment of an Electronic Health Records (EHR) system can have an effect on the quality of healthcare is the purpose of this study. Electronic health records have the ability to improve patient outcomes, minimise the number of errors that occur, and promote communication between healthcare practitioners. It is necessary, in order to maximise the quality of healthcare services, to have an understanding of how this technology influences the level of medical care that is provided in a mining town such as Tarkwa Mines. Electronic health record systems facilitate the streamlining of administrative procedures, the reduction of paperwork, and the facilitation of resource allocation. When applied in a location with limited resources, such as Tarkwa Mines, where healthcare resources may be limited, the study has the potential to provide insights into how electronic health records (EHRs) might optimise resource utilisation, which ultimately leads to improved patient care.

Electronic health record systems produce a vast amount of data that can be assessed in order to arrive at well-informed decisions regarding patient treatment, public health, and the distribution of resources. The research has the

potential to shed light on how decision-making that is driven by data might improve healthcare outcomes and address specific health concerns that are now being faced by the mining community. Patients can be given more control over their care by having access to their own medical records and being involved in the decision-making process regarding their care. The investigation of the impact that electronic health records (EHRs) have on patient engagement and satisfaction can be of critical importance. Patients who are satisfied and engaged are more likely to stick to treatment programmes and enjoy better health outcomes.

The study may also investigate the ways in which electronic health records (EHRs) enhance the interchange of health information between different healthcare practitioners both inside and outside of the Accra Medical Centre. When it comes to miners, this can be of utmost significance because they might need specialised medical care or have to move their medical data from one site to another. Through increased productivity and decreased duplication of effort, electronic health record systems offer the potential to lower the costs of medical care. It is possible for healthcare policymakers and administrators to gain insight into the economic feasibility of such systems by gaining an understanding of the financial implications of implementing electronic health records (EHR) in a community that is resource-dependent.

**Delimitation of the Study**

The borders and restrictions of a research study are defined by the delimitations that are included in the study themselves. They detail the aspects that will be the primary focus of the study as well as those that will not be addressed. It is possible to identify numerous delimitations for the research

project titled "Electronic Health Records System and Quality Healthcare: The Case of the Accra Medical Centre at Tarkwa Mines," which includes the following limitations:

The Accra Medical Centre, which is situated within Tarkwa Mines in Ghana, is the sole location studied in this study. Other medical facilities located in other locations or nations are not included in its scope. In addition, the research is carried out within a particular time range, and it does not investigate the long-term implications of implementing EHR beyond the time span that has been set.

Patients, healthcare practitioners, and administrative staff at the Accra Medical Centre are the primary subjects of the research that is being conducted. The broader population of Tarkwa Mines and other stakeholders who are not directly linked with the medical centre are not included in its scope of coverage. The research investigates the effect that electronic health record (EHR) systems have on the quality of healthcare, but it does not dive into the technical components of EHR implementation, such as the creation of software or the architecture of the system.

The study may touch upon financial elements in terms of cost-efficiency; however, it does not undertake an in-depth financial analysis of the investment and returns connected with the implementation of electronic health records (EHR). Additionally, the research is carried out in English, which may restrict the participation of individuals or communities that do not speak English in the study.

It is possible that the study does not take into account the particular healthcare requirements and difficulties faced by other companies or sectors

that are not related to Tarkwa Mines. There is a possibility that the findings are influenced by external factors, such as shifts in the policies of the government or general economic situations; however, the study does not investigate these aspects in great detail.

**Limitations of the Study**

Despite the relevance and contributions of this study to understanding the role of electronic health records (EHR) systems in enhancing quality healthcare delivery, several limitations were encountered that must be acknowledged. One of the primary limitations of the study was the relatively small sample size, which may not be representative of the entire population of healthcare providers and patients at the Accra Medical Centre, Tarkwa Mines. This limitation affects the generalizability of the findings to other health facilities within the mining sector or the broader Ghanaian healthcare system.

Additionally, the study relied heavily on self-reported data from healthcare professionals and patients through questionnaires and interviews. While efforts were made to ensure the reliability and validity of responses, there is always the possibility of response bias. Participants may have provided socially desirable answers or exaggerated their perceptions of the effectiveness of the EHR system, particularly given the sensitive nature of healthcare service delivery and institutional performance.

Another limitation was the relatively short duration of the study, which may not have captured the long-term impact of the EHR system on healthcare quality. Quality healthcare is influenced by a range of factors, some of which manifest over time, such as patient outcomes, follow-up care, and system efficiency improvements. As such, the findings may reflect only the short-term

benefits and challenges of the EHR system's implementation at the medical centre.

Moreover, the study focused solely on one medical facility—Accra Medical Centre at Tarkwa Mines (Goldfields Ghana Limited)—which presents a contextual limitation. The centre operates within a corporate environment with specific resources, infrastructure, and organizational support that may not be present in other public or rural healthcare settings in Ghana. Therefore, the insights gained may not be directly applicable to government-run or under-resourced health institutions.

Finally, the technological literacy and adaptability of both staff and patients were not deeply explored in the study. These factors significantly affect the successful implementation and utilization of EHR systems. By not fully investigating the role of user training, change management, and technical support, the study may have overlooked critical barriers or enablers that influence the system's effectiveness.

**Definition of Key Terms**

**Electronic Health Records (EHR):** An Electronic Health Record is a digital version of a patient's paper chart. It is a real-time, patient-centered system that makes information available instantly and securely to authorized users. EHRs contain a wide range of data, including medical history, diagnoses, medications, treatment plans, immunization dates, allergies, radiology images, and laboratory results. In this study, EHR refers to the digital system used at Accra Medical Centre to collect, store, and manage patient health information.

**Quality Healthcare:** Quality healthcare refers to the degree to which health services for individuals and populations increase the likelihood of desired

health outcomes and are consistent with current professional knowledge. It encompasses several dimensions, including safety, effectiveness, patient-centeredness, timeliness, efficiency, and equity. In the context of this study, quality healthcare is measured by improvements in service delivery, accuracy of diagnosis, patient satisfaction, and efficient record-keeping facilitated by the use of EHR systems.

**Organisation of the Study**

In total, there were five chapters that comprised the study. The backdrop of the study, the statement of the problem, the aims of the study, the significance of the study, and the limitations of the study are all included in the subject matter of the first chapter. The second chapter was devoted to a review of the relevant literature. As a result of the fact that this chapter presents the principles of the research, it contributes to the formation of the nature and the direction of the study. The third chapter of the study focused on the research methodologies that were used. It discusses the research design, the processes for sampling and the population, the data and the procedure for collecting the data, the research instruments, and the method for processing and analysing the data. In the fourth chapter, we discussed the findings of the investigation and presented our findings. In the fifth chapter, a summary of the findings, conclusions, and suggestions for the study was presented.

# CHAPTER TWO

# LITERATURE REVIEW

## Introduction

This chapter examines the existing theoretical as well as the empirical literature that relates to this study. Broadly, the chapter is subdivided into three sections. The first section focuses on theoretical literature that supports the study. The second section analysed conceptual review of the variables. The third section examines the existing empirical studies that relate to the issues under investigation and the last section develops and explains the conceptual framework of the study.

## Theoretical Review

This section analyse the theories underpinning the study. The actor network theory and Technology Acceptance Model (TAM).

### Actor Network Theory

Actor-network theory is a framework designed to conceptualise the relationship between technology and society. This technique has gained prominence in a substantial body of research pertaining to information systems. This arises from its provision of novel notions and ideas for comprehending the socio-technical nature of information systems (Walsham, 1997). Consequently, ANT is regarded as a methodology employed by social scientists to examine the social and technological elements of an organisation. These elements encompass individuals, organisations, and technology, all of which are interconnected inside a network (Monteiro, 2000; Walsham, 1997). Michel Callon, Bruno Latour, and John Law are the scholars recognised for establishing the cornerstone of the theory.

The African National Congress (ANC) asserts that the adoption of technical advancements in institutions, such as Effia Nkwanta Regional Hospital, is not the result of any scientific deduction. The evolution of technology is more accurately attributed to the inherent societal drive that the technologies themselves embody. The theory posits that the sole means to ensure order and efficiency within an organisation, specifically the Effia Nkwanta Regional Hospital, is for the organisation to establish networks that influence social interactions internally (Callon & Law, 1995; Hanseth & Monteiro, 1998; Latour, 1991). This is the one method to guarantee that the company can attain these objectives. According to Actor-Network Theory (ANT), an information infrastructure (EHR) functions as both an actor within the organisation and a mechanism for establishing a network that links all other actors within the enterprise. Consequently, the participants in a network encompass both human and non-human elements that are sufficiently diverse to be treated uniformly and collectively referred to as hybrid collectif (Aanestad & Hanseth, 2000; Callon & Law, 1995; Latour, 1991; Walsham, 1997).

The electronic health record (EHR) at Effia Nkwanta constitutes an actor-network, comprising diverse social and technological entities, each fulfilling a distinct role within the network established by the EHR. Aanestad and Hanseth (2000) assert that the actions of an actor, whether human or non-human, occur inside a network, but are not seen as independent actions. Consequently, to develop the electronic health record system and ensure its efficacy, it is essential to identify reliable persons who influence, either directly or indirectly, the system's sustainability. Consequently, ANT offers a

lexicon to elucidate the various tangible and minor technological and non-technical mechanisms involved in the development and application of EHR within the institution. In addition to elucidating the fundamental elements necessary for the construction of a dependable electronic health record (EHR) at the institution, ANT would aid in identifying the key stakeholders involved in the EHR implementation inside the hospital.

**Technology Acceptance Model (TAM)**

The Technology Acceptance Model (TAM) is a theoretical framework designed to elucidate and predict user acceptance and adoption of new technologies. This acceptance and adoption encompasses electronic health record (EHR) systems. Although the Technology Acceptance Model (TAM) primarily focusses on user attitudes and intentions, it indirectly provides insights into how the installation of Electronic Health Record (EHR) systems can influence the quality of healthcare service.

The Technology Acceptance Model (TAM) posits that the perceived ease of use of technology is a critical factor influencing users' acceptance of new technology. The acceptance and use of electronic health record (EHR) systems by healthcare practitioners is heightened when they perceive the system as user-friendly and accessible. When electronic health record (EHR) systems are user-friendly, medical practitioners can access and input patient information more efficiently, leading to enhanced healthcare quality. Timely and precise access to patient data helps mitigate errors, optimise workflows, and enhance the quality of care delivered to patients.

The perceived utility of a technology is another facet highlighted by TAM. Healthcare practitioners are more inclined to accept and utilise

electronic health record (EHR) systems if they perceive these technologies as capable of enhancing their work performance and advancing patient care. The belief in the value of electronic health record systems may facilitate enhanced coordination across healthcare teams, improve information sharing, and support data-driven decision-making. As a result, this may lead to improved diagnostic and therapeutic methods, ultimately enhancing the quality of healthcare services.

TAM's forecast indicates that individuals' desire to utilise technology will ultimately result in actual usage. The probability of healthcare professionals utilising electronic health record (EHR) systems as intended escalates when they possess positive attitudes towards these systems, informed by their assessments of usability and perceived benefits. The implementation of electronic health record systems can result in the generation of more comprehensive and accurate patient records, a reduced dependence on paper-based documentation, and enhanced accessibility of patient information for authorised personnel, all of which enhance the quality of care.

TAM also considers the degree of user satisfaction resulting from technology acceptance. Healthcare practitioners find electronic health record (EHR) systems satisfying when these systems meet their needs and expectations. Consumers who are satisfied with their electronic health record (EHR) systems are more inclined to persist in their usage. The ongoing utilisation may result in sustained enhancements in healthcare quality as practitioners become increasingly proficient with the technology.

The Technology Acceptance Model posits that users' perceptions of the usability and utility of electronic health record (EHR) systems influence their

acceptance and adoption of the technology in question. The adoption and use of electronic health record (EHR) systems by healthcare professionals can lead to more efficient and effective healthcare operations, improved access to patient information, and enhanced decision-making. All of these elements have the capacity to positively impact the quality of healthcare delivered. However, it is crucial to recognise that while the Technology Acceptance Model (TAM) elucidates the adoption process, factors such as system design, training, and organisational support significantly influence the actual impact of electronic health record systems on healthcare quality.

## Conceptual Review

This section explained the concepts underpinning the study.

### Record Keeping in Health Delivery

There are two primary methods for maintaining patient medical or health records in any healthcare organisation. These are systems for maintaining records on paper and electronic health records (EHR). These record systems, whether analogue or digital, provide two essential tasks (Berg, 1999). Health record systems facilitate the collection of data along a patient's trajectory, thereby establishing a 'external memory' for future reference (Berg & Toussaint, 2020). Secondly, health records facilitate the coordination of activities and events across many departments and geographical areas (Berg & Toussaint, 2020). This sub-section elucidates these classifications further.

### Paper base record keeping in healthcare delivery

For the past two centuries, the healthcare sector has predominantly utilised paper-based record systems to store patient medical information (Scott, 2006). According to Coeira (2020), paper-based records inherently

pose physical and informational problems, complicating their efficacy as a reliable method of record keeping in healthcare service. This persists despite their significant contributions to the healthcare delivery system from antiquity to the present. Consequently, a significant number of practitioners assert that a paper-based system alone is no longer adequate. They support this perspective by citing several problems related to the paper record, which include the following:

Challenges faced in acquiring and disseminating patients' medical histories: The reliance on a paper-based record system significantly hinders medical professionals in disparate geographic regions from accessing patients' historical medical information, hence complicating correct diagnoses and the formulation of suitable treatment plans. While it is accurate that paper-based medical information can be conveyed via fax machines, telephone conversations, courier services, or postal mail, these methods carry the risk of data misinterpretation, information loss, and delays (Institute for Medication Practices, ISMP, 2000). Even when medical practitioners worldwide access historical patient records, reconciling these records is likely to remain unfeasible (Coeira, 2020). Coeira (2020) asserts that the same medical information can be subject to numerous interpretations. Experts often vary in their capacity to interpret medical data due to illegibility or misspellings of medical terminology.

Disordered Patient Records: An Organisational Error Building upon the prior concern, the utilisation of paper-based records may lead to erroneous certification of medical records. The use of paper-based records significantly increases the likelihood of erroneous codes or symbols being allocated to

medical files. This therefore renders it exceedingly difficult to access the identical files at a subsequent moment. Conversely, Warshawsky, Pliskin, Urkin, and others (1994) assert that extracting a medical file from a collection of health records can be both daunting and time-consuming. The erroneous categorisation of medical records obstructs data access and impedes data sharing necessary for delivering effective treatment.

Inaccuracies in prescribed drugs and prescriptions: Prescriptions are generally composed entirely by hand while utilising record systems reliant on paper sheets. Consequently, a chemist may err in completing prescriptions owing to indecipherable handwriting, or they may need to invest more time contacting the doctor's office for clarification regarding a prescription. Both scenarios are feasible. The Institute for Safe Medication Practices estimated in a report that chemists make over 150 million contacts to physicians annually to explain prescription details and minimise medication administration errors (ISMP, 2000). Another investigation conducted by the institution determined that approximately 39% of drug errors transpire during the prescribing process. The inaccuracies arise from the illegibility of prescribers' handwriting, which is often misinterpreted by chemists (ISMP, 2002). Another 35 percent of pharmaceutical errors transpire during the prescription ordering process by prescribers. The study's findings indicate that handwritten or paper prescriptions significantly contribute to medication errors at the initial stage of drug use (ISMP, 2002).

There is no guarantee that the information will be preserved. Records held on paper may be susceptible to destruction by fire, flood, or comparable natural disasters such as hurricanes. Moreover, they may be compromised or

completely removed. Had a copy of each document in the filing cabinet not been made, that specific segment of a patient's medical history would be irrevocably lost. This may adversely affect the assessment of the progress of a recovering patient or an aged individual within the institution (ISMP, 2000).

Infringement of Patients' Privacy Rights: Monitoring access to paper data or completely prohibiting unauthorised personnel from reading a patient's medical records is challenging with paper-based systems due to restricted capacity for such oversight. Accessing patients' medical information can occur without leaving any trace of the individual who accessed them, the time of access, or any instances of copying. Consequently, patients, especially those afflicted with severe illnesses or who have disclosed confidential information to their physicians that may jeopardise their well-being, face the potential for irrevocable consequences, including job loss, humiliation in personal or professional settings, discrimination, and difficulties in securing insurance coverage (ISMP, 2000).

**Electronic Healthcare Record (HER) in Healthcare Delivery**

The utilisation of information and communication technologies (ICTs) in healthcare delivery is designated by numerous terms, each associated with an acronym. EMR denotes electronic medical record, EPR signifies electronic patient record, CMR refers to computerised medical record, CPR indicates computer-based patient record, and EHR represents electronic health record. These are but a few of the titles that may be mentioned. These lexicons are often used interchangeably; however, some changes in meaning may exist depending on the region, health sector, professional domain, and temporal context (Nøhr, 2006). This study advocates for the utilisation of electronic

health records (EHR) to delineate the information and communication technology (ICT) implemented in the institution. Nøhr (2006) posits that the term "health" in electronic health records (EHR) denotes the fundamental facts of an individual, irrespective of specific intervals of patient status. Consequently, the employment of EHR is deemed the most suitable approach for this specific investigation.

Numerous writers have offered various definitions of electronic health records (EHRs); yet, the internationally acknowledged definition of EHRs was established by the International Standard Organisation (ISO). The International Organisation for Standardisation (ISO) defines EHRs as "a repository of information concerning the health of a subject of care, in a computer-processable format." To enhance the elucidation of electronic health records (EHRs), Hayrinen, Saranto, and Nykanen (2008) sought to broaden the emphasis given to EHRs in the ISO definition. This concept exclusively emphasises the structure of EHR systems. Hayrinen et al. (2008) assert that electronic health records (EHRs) encompass retrospective, contemporaneous, and future information. The primary objective of EHRs is to facilitate the provision of integrated healthcare that is continuous, efficient, and of superior quality.

Luo (2006) asserts that electronic health records (EHRs) encompass not only the digital representation of paper-based records but also the comprehensive management of data essential for patient care. Consequently, Bernstein, Bruun-Rasmussen, Vingtoft, Andersen, and Nøhr (2020) concurred that electronic health records (EHRs) have a diverse function in healthcare delivery, extending beyond their mere status as a computer system.

An efficient electronic health record (EHR) system, as per Tang (2020), must longitudinally store patient health information and data; it should facilitate proper management of generated results; it must enable electronic communication and connectivity; and it should offer patient support and assistance in administrative processes and reporting. Nøhr (2006) emphasises the fundamental elements of electronic health records (EHR).

Electronic health records (EHR) should enable medical workers to more efficiently monitor patient progress notes in clinical documentation. These notes may be input into the system as either free text or as predefined structured notes.

Physician Order Entry (POE): Electronic health records must facilitate the standardised and structured ordering of diagnostic tests and medications. Other electronic health record systems provide the functionality to detect drug interactions and notify patients of any allergies.

Appointment scheduling service: An electronic health record (EHR) system enables patients to arrange meetings with their healthcare providers, either physically or virtually.

Communication and Messaging: Electronic health record systems must facilitate information exchange among numerous hospitals, general practitioners, pharmacies, and laboratories.

Results Management: Electronic health record systems facilitate the assessment of medical test outcomes. The system is anticipated to provide specific alerts in reaction to anomalous results. Furthermore, the system should demonstrate patterns of a particular outcome.

Charge Capture and Billing: Electronic health records facilitate the monitoring of expenses incurred by the institution due to the healthcare services provided to the patient.

Moreover, electronic health records (EHR) facilitate the management of chronic diseases by allowing medical workers to access data that can assess the adequacy of disease management.

Each electronic health record system has distinct functionalities that aid in the administration of user authentication and authorisation about security issues.

**Quality Health Delivery**

Deming (1982) asserts that proponents of total quality management define quality as "Doing the right thing right, right away." This definition is regarded as the most comprehensive and potentially the most straightforward definition of quality. The perspective articulated by Ovretveit (1992) is universally acknowledged; over a decade later, he delineated the three components of quality, termed management quality, professional quality, and consumer quality, which are classified as "stakeholders." The client's quality considers the service needs specified by the client. The professional quality of a service is assessed based on its compliance with the standards set by professional providers and referrers, as well as its accurate implementation of the necessary methods and procedures to meet client requirements. The management quality component aims to optimise resource utilisation in the most productive and effective manner, adhering to the limits and directives set by higher authorities and purchasers. Consequently, a comprehensive

definition of health care quality encompasses all three of the following elements:

Overveit (1992) posits that an exemplary health service or system delivers to patients their desired and necessary provisions at the minimal possible expense. Donabedian (1980) and Morgan and Murgatroyd (1994) offer an alternative client-centered definition of quality. They assert that "Client satisfaction is a crucial metric of care quality, as it provides insight into the provider's effectiveness in fulfilling the values and expectations that the client holds."

Donabedian A. posits that health care consists of two elements: a technical task and an interpersonal interaction wherein patients and physicians communicate and arrive at a consensus over the appropriate treatment to be delivered. Donabedian posits that care quality consists of three elements: structures, procedures, and results.

Structure refers to the attributes of the environments where care is administered. This encompasses the attributes of material resources (including facilities, equipment, and finances), the qualities of human resources (such as personnel count and their qualifications), and the characteristics of organisational structures (including the arrangement of medical staff, peer review systems, and reimbursement processes).

The procedures associated with delivering and receiving care are termed processes. It includes the patient's actions in seeking and receiving medical attention, as well as the practitioner's actions in diagnosing the problem and recommending or administering therapy.

The term "outcome" denotes the health status of patients and groups following medical treatment. Enhancements in the patient's knowledge and advantageous modifications in the patient's behaviours fall under a comprehensive definition of health status. The extent of the patient's satisfaction with their received care is also given.

The amount of satisfaction experienced by patients is increasingly seen as a crucial measure of both outcomes and quality of care. The degree of patient satisfaction with their therapy will influence their likelihood of seeking medical assistance or adhering to treatment. These represent Concerns regarding health care quality have compelled businesses within the industry to utilise patient satisfaction data to uncover insights about operational procedures and the root causes of failures within those processes. This yields elevated work standards, therefore resulting in the most efficient healthcare operations.

Quality health care for the patient is characterised by the fulfilment of their needs and is delivered in a courteous and timely manner (Brown et al., 1990). The client seeks services that effectively mitigate symptoms and avert sickness. This is because satisfied clients are more inclined to adhere to therapy and persist in utilising health services. The quality factors linked to customer satisfaction significantly influence the health and well-being of the community. Consequently, patients and communities often prioritise the following dimensions of quality: efficacy, accessibility, interpersonal relationships, continuity, and facilities.

From the provider's perspective, quality care signifies that the provider has the requisite knowledge, resources, and conditions to improve the health

status of patients and the community in alignment with the latest technical standards and available resources. The provider's commitment and motivation depend on their ability to fulfil tasks effectively. The key concerns of providers are often technical competence, efficacy, and safety levels. The estimated number of patients a practitioner will see in an hour is a critical inquiry they may have. Elucidate the laboratory services available to them, together with the extent of their accuracy, efficiency, and reliability. What referral systems are established to address the requirements of advanced technologies or specialised services? The physical working conditions are satisfactory and hygienic, safeguarding patient privacy and aligning with professional norms. What is the pharmacy's capability to ensure a reliable supply of all essential medications? Are there possibilities for continuing education in the medical field? The healthcare system must adapt to the perspectives and expectations of patients, while simultaneously addressing the special demands and requirements of medical providers. In this setting, health care workers are regarded as the internal clients of the system. In delivering high-quality treatment, they necessitate and expect technical, administrative, and support services that are both effective and efficient.

Managers must engage in patient care delivery only minimally to preserve quality care, even if the quality of patient care is central to their responsibilities. Numerous unforeseen challenges emerge due to the varying requirements of oversight, fiscal administration, and logistical coordination. Consequently, a manager may lack a clear sense of purpose or priorities. Emphasising the many facets of quality may assist in establishing administrative priorities. To responsibly manage the resources provided by the

government, private businesses, and the community, health care facility managers must fulfil the requirements and expectations of both patients and professionals.

Managers in the healthcare industry must consider the needs of a varied array of service recipients when handling enquiries related to resource allocations, price schedules, staffing patterns, and management strategies. Adopting this approach will ensure no compromise among the objectives of reducing costs, improving professional results, and increasing patient satisfaction (Ovretveit J, 2020). A definition of quality is essential to guide measurements, notwithstanding the diverse viewpoints of various stakeholders on what defines quality in healthcare. It must align with the professionals' principles while also improving efficiency to ensure client satisfaction.

**Benefits of EHR**

According to Bossen, Jensen, and Udsen (2013), electronic health records (EHR) are extremely flexible and can be altered in a manner that is quite extensive for various groups of personnel and departments. An essential component that contributes to the success of the adoption of electronic health records (EHR) is the presence of these qualities (Ibid). However, earlier research carried out in seven different countries by Nah, Lau, and Kuang (2020) as well as Ludwick and Doucette (2009) demonstrates that the effective adoption of electronic health records (EHR) is significantly dependent on a wide variety of contextual and organisational factors (Bossen et al., 2013). In light of this, further benefits of electronic health records (EHR) warrant further elucidation. A review of the relevant literature reveals that the advantages of electronic health records (EHR) can be significantly categorised under the

following headings: enhancement of the quality of treatment, enhancement of productivity and efficiency, enhancement of care coordination and communication, reduction of costs, and protection of the privacy of patient records.

**Improve quality of care**

The electronic health record system, when successfully implemented, makes advancements and improves access to accurate and up-to-date health records, which in turn strengthens the quality of care that is provided to patients (Bossen et al., 2013; Boyer, Samuelian, Fieschi, and Lancon, 2010; Khalifehsoltani and Geremi, 2010; Randeree, 2007; Sood et al., 2008). Electronic health record systems have the ability to enhance the quality of patient care by providing them with increased access to health information. This, in turn, leads to a reduction in the number of medical errors that were mostly connected with paper-based record systems. A reduction in the amount of time that patients have to wait for test results and a general decrease in the amount of time that patients have to wait in the health facility are both results of quality patient care. A vast majority of respondents, 97%, claimed that electronic health records (EHRs) contribute to timely access to health records.

Additionally, around 82% of respondents reported that EHRs favourably improved the quality of clinical choices. This information was gathered through an empirical study that was carried out by DesRoches et al. (2008). Once more, Chaudhry Wang, Wu, and others (2006) conducted a comprehensive analysis of the impact that health information technology has on the quality of treatment, and they found that there is an increase in the delivery of care that spans from 5 to 66 percentage points. The findings of a

recent study conducted by Jarvis, Johnson, Butler, and others (2013) reveal that the utilisation of electronic health records (EHR) is linked to an increased clinical process quality of treatment in hospitals located in the United States.

**Enhance productivity and efficiency**

According to anecdotal evidence, medical professionals who deal with paper-based records routinely devote the majority of their time on filling out paperwork, which prevents them from performing their primary responsibilities consisting of providing treatment. Consequently, a significant amount of effort is spent on the process of identifying duplicate records and locating records that have been unavailable for several days or weeks. There has been a significant reduction in the amount of paperwork that clinicians have to complete as a result of the introduction of electronic health record systems in the majority of healthcare facilities. Consequently, this has resulted in a reduction in the amount of time spent on record-keeping, which has led to an improvement in the efficiency of workflow and an increase in the overall productivity of health professionals (Erstad, 2020). As a consequence of this, health professionals are able to increase their productivity because they are no longer required to postpone or reschedule their own responsibilities while they wait for other coworkers to finish their responsibilities (Essex, 2000; Menachemi & Brooks, 2006).

It is possible for electronic health record systems to improve productivity and efficiency in any healthcare delivery institution (Agrawal, 2002). This is accomplished by assuring improved utilisation of resources and minimising duplication of efforts during the process. This is supported by the findings of a study that was carried out in Bangladesh by Khan, Shahid,

Hedstrom, and Andersson (2020). In the study, a female physician who was 25 years old made the statement that using an electronic health record (EHR) makes her more productive and "makes her work easier." These increased efficiencies have the potential to result in greater employee morale and maintenance, which would be a positive outcome. In a similar vein, there is abundant evidence that electronic health records (EHR) and e-health tools have a positive impact on the people who use them (Bedeley & Palvia, 2019). Therefore, individuals who utilise electronic health records are more likely to become well-informed, receive better assistance, and have improved behavioural outcomes in comparison to individuals who do not use EHR (Murray, Burns, See, Lai, & Nazareth, 2020). This is the case within the same health facility.

**Improved care coordination and communication**

According to the findings of a study that was conducted by Smith et al. (2020), it was found that one out of every seven hospitalisations is due to the absence of specific clinical or health information. This is due to the fact that patients' medical records, which include the outcomes of tests or diagnoses as well as other essential data, are frequently unavailable when they are required, frequently misplaced, and in some instances, altogether absent (Ibid). Because of this, electronic health records (EHR) lessen the likelihood of records being forgotten or lost, which in turn ensures that patients' medical records and other essential patient data are easily accessible whenever they are required. To put it another way, this makes it possible for medical practitioners to have access to more accurate information at the many departments and locations of healthcare delivery. In addition, as Burton, Anderson, and Kues (2021) have

noticed, electronic health records (EHR) contribute to an enhanced degree of communication and facilitate an overall improvement in the coordination of treatment, both inside and between several different health facilities. According to Bodenheimer, Wagner, and Grumbach (2002), the utilisation of electronic health records (EHR) is of the utmost importance in the management of chronic disease or chronic care management. This is because EHR makes it feasible to coordinate care across several facilities.

The built-in email capability of many electronic health records (EHRs) also results in improved communication because it enables employees of different hospitals to contact with one another from any department or work station (Erstad, 2020; Menachemi & Brooks, 2006). All of these benefits contribute to an overall improvement in communication. In addition, the email feature enables instantaneous and real-time contact between health professionals (Menachemi & Brooks, 2006). This enables clinicians to simultaneously execute activities in different places, which ultimately results in a reduction in the amount of time spent on each activity. In a survey conducted by DesRoches et al. (2008), the majority of respondents (72%) stated that electronic health records (EHR) not only improve care coordination but also increase communication with patients. This finding is supported by actual evidence.

**Reduction of cost and enhanced revenue**

The inefficiency of labour that is done using paper is contributing to the general increase in the cost of delivering healthcare, which is becoming more expensive. Among the costs that have been identified as being associated with paper-based records are the expenses that are incurred for manual

processes such as the transcription of physicians' dictated notes, the pulling, filing, and maintaining of charts, as well as the cost of maintaining the storage of health records (Cisco Systems Inc, 2020). According to Menachemi and Brooks (2006), the implementation of electronic health records (EHR) in numerous healthcare facilities has led to a decrease in the costs associated with supply and printing. As a result, the expenses that are incurred in the process of establishing and maintaining paper health records, such as the cost of clerical supplies, the cost of paper, and the cost of printing, are either eliminated or decreased when electronic health records are utilised (Ibid; Sandrick, 1998). A health facility reported a sketchy 90% reduction in the paper backlog after a few months of deploying an EHR system (Menachemi & Brooks, 2006), which resulted in the reduction in paper and supply expenses. This was documented in a study that was carried out by Ewing and Cusick (2021). Additionally, Remlex (2007) has concurred that the utilisation of information and communications technology (ICT) in the healthcare sector significantly lowers the expenses associated with the operation of hospitals. The introduction of electronic health records (EHRs) not only contributes to the reduction of costs, but it also results in a rise in revenues. This is because EHRs ensure the prompt and accurate collection of charges for clinical services, medical supplies, and pharmaceuticals. According to Menachemi and Brooks (2006), electronic health records are therefore considered a measure to boost the financial flow of health facilities. According to Mildon and Cohen (2020) and Erstad (2020), the loss of between three and fifteen percent of the total estimated revenues of healthcare providers is the result of incorrect coding of health information. In addition, a study conducted by Agrawal

(2002) highlighted the fact that electronic health records (EHRs) play a significant influence in enhancing the cash flows of healthcare facilities that utilise them.

**Privacy of patient records**

Patients' information, which may be extremely sensitive, is protected to the greatest extent possible via electronic health records (EHRs). According to Rindfleisch (1997) and Palvia, Lowe, Nemati, and Jacks (2020), health records contain a vast amount of sensitive information. This information includes information about fertility and abortions, emotional difficulties, sexual behaviours and diseases, substance misuse, and physical abuse. As a result, when access to this kind of material is not restricted, it has the potential to be harmful and destructive to the health of a patient. On the other hand, electronic health records (EHRs) guarantee that patient records are stored electronically and protected by login passwords or even biometric sensors. Furthermore, it ensures that the tracking of providers who access patient information within the system is carried out. Therefore, electronic health records not only guarantee compliance with privacy rules, but they also offer compliant security measures to safeguard patient information across the entirety of the wired and wireless environment (Cisco, 2020).

**Challenge of EHR Implementation**

The development and implementation of electronic health records (EHR), particularly in the healthcare facilities of poor nations, has never been a simple task. This is due to the fact that there are a great number of distinctive characteristics that impede the development and dissemination of such technologies (Bra, Monteiro, and Sahay, 2021; Sood et al., 2008).

Nevertheless, it is essential to emphasise that the difficulties associated with the implementation of electronic health records (EHR) in industrialised countries are relatively distinct from those associated with the implementation of EHR in poor countries. In their 2008 publication titled "Electronic Medical Records: A Review Comparing the Challenges in Developed and Developing Countries," Sood and colleagues provide a more lucid illustration of the distinct difficulties that are associated with the deployment of electronic health records in rich nations as opposed to developing countries. Consequently, due to the aims of the research, this component of the work would consequently be much more interested in the difficulties associated with the adoption of EHR in underdeveloped nations.

In the course of their research, Khalifehsoltani and Gerami (2010) were able to develop a model that takes into account the difficulties that are associated with e-health in developing countries. The obstacles that were incorporated in this model were related to six different areas: technology and operations, social and cultural issues, the native environment, legal issues, policymaking, and financial issues. But their strategy took a more holistic view of e-health, of which electronic health records (EHR) are only a small part. As a result, after conducting a more in-depth analysis of existing publications about the difficulties associated with the adoption of electronic health records (EHR) in developing countries, a number of peculiar problems that are associated with EHR implementation in developing nations were uncovered. Inadequate Electric Power Supply; Lack of Information and Communication Technology Infrastructure; Lack of Basic Information and Communication Technology Knowledge and Skills; Poor Internet

connectivity; Financial issues; and Resistance to New Technology were identified as the major challenges that hinder the successful implementation of electronic health records in developing countries like Ghana. Additional challenges were also identified.

**Inadequate electric power supply**

When it comes to providing their residents with Uninterrupted Power Supply (UPS), the majority of developing countries, particularly those in sub-Saharan Africa, have a significant challenge. This invariably has an impact on the provision of any excellent information and communication technology service, such as electronic health records (Achampong, 2020). Considering the continuous load shedding exercise that is now taking place, the situation in Ghana is much more dire. Because of this, a health institution that is operating an electronic health record (EHR) cannot depend on the flow of energy supplied by the energy Company of Ghana (ECG) in a secure manner because the power might be cut off at any time without any prior notice (Ibid). Beatrice Adu, a reporter for Joy News, a leading private news television station in Ghana, described the erratic power supply as "worrying" to the general healthcare delivery system while she was touring some health facilities in Accra, the capital city of Ghana, in order to acquire information regarding how these facilities have been dealing with the electricity shortages (Adu, 2013).

According to the aforementioned reportage, and more specifically "at the Adabraka Polyclinic, officials told Joy News that electricity goes off at least five times a day, which makes it difficult to sterilise the equipment that is used throughout each day." In addition, they noted that the low current that was impacting the entire hospital had made the work completely intolerable.

cited in: Furthermore, the Assistant-in-charge of the Princess Marie St. Louise Children's Hospital informed the reporter that "due to the unpredictable power supply, the facility has been digging into its limited resources to repair equipment" (Ibid). This information was provided to the reporter. This indicates that the inconsistent supply of electricity not only has an impact on the efficiency with which electronic health record systems operate, but it also has the potential to cause damage to the system. All of this results in an increase in the cost of repairs. Even in certain instances, these damaged electronic health record systems are beyond repair and must be completely replaced.

**Lack of ICT Infrastructure**

There is a growing and robust healthcare infrastructure in the majority of industrialised countries, such as the United States of America, the United Kingdom, Norway, Denmark, and Australia, and these countries receive a substantial amount of financial support from their respective governments (Sood et al., 2008). This, however, is not the case in the majority of countries that are still developing. It is especially difficult for professionals working in a variety of healthcare institutions in developing nations to implement healthcare information technology-based solutions such as electronic health record (EHR) systems because of the lack of information and communication technology (ICT) resources (such as the absence of computers) and the inadequate healthcare infrastructure (Ibid). Infrastructure, such as that which is necessary for the functioning of electronic health records (EHRs), continues to be a limitation (WHO, 2010). And this is in line with the findings of a recent empirical study that was carried out by Bedeley and Palvia (2019), which

reports that the most significant obstacle that e-Health faces is a lack of information and communication technology (ICT) infrastructure. The information and communications technology (ICT) infrastructures that are now in existence are not sufficient to support the new system, as stated by Bedeley and Palvia (2019). As an illustration, health facilities that are outfitted with computers or information and communication technology infrastructures are frequently not in good condition. More importantly, the majority of health institutions in underdeveloped countries, like Ghana, do not have access to other critical information technology accessories that are fundamental components for the successful adoption of electronic health record systems (Ibid). The inadequate availability of computers and other information and communication technology facilities continues to be a barrier to the successful implementation of electronic health records (Martinez, Villarroel, Seoane, and del Pozo, 2020).

**Lack of basic ICT knowledge/skills**

Alverson et al. (2009), Bedeley & Palvia (2019), Martinez et al. (2020), Pradhan (2021), Sood & Bhatia (2020), and Xue & Liang (2007) have found that the majority of health professionals working in poor countries do not possess the fundamental information and communication technology (ICT) knowledge or skills that are required to make successful use of electronic health record (EHR) systems. This makes it more difficult for those working in the medical field to make full use of the system. It was observed that the "...majority of the current generation of Ghanaians grew up in the rural areas without computers or even common electricity," however this was corroborated by the interview responses that were acquired from the

healthcare professionals in Bedeley & Palvia (2019). These individuals, as a result of their lack of knowledge, have unfavourable attitudes towards computers since they would rather have someone else do their work with the computer for them rather than doing things on their own. In addition, they expressed their opinion that the "lack of enthusiasm... has slowed down implementation efforts as it raises the debate of whether the time is right or not." "page 6" As a consequence of this, numerous training programmes have been organised by various health institutions themselves in order to enhance the knowledge and capabilities of health professionals specifically with regard to fundamental computer skills. However, the amount of time that is allotted to these health professionals who are not proficient in the use of computers in order for them to learn and become proficient in the fundamental operations of the computer and then apply the skills that they have learned to a specific project may also be a factor that hinders the efficiency of electronic health records (Sood & Bhatia, 2020; Xue & Liang, 2007). In certain circumstances, the amount of time allotted for the training is insufficient, and as a consequence, trainees acquire either a restricted amount of computer skills or none at all. To reiterate, when the time period is excessively long, it frequently results in a lack of available staff that is essential for the operation of the system during crucial moments.

**Poor Internet connectivity**

The lack of access to the Internet is another significant obstacle that stands in the way of the successful implementation of many electronic health record (EHR) projects in poor countries (Achampong, 2020; Idowu, Adagunodo, Aderounmu, and Ogunbodede, 2020; Seini, Abdulai, and Asenso-

Okyere, 1998). The Internet serves a number of vital functions, one of which is that it makes available vast quantities of health-related information that can be of great use to individuals as well as organisations like hospitals (Andreassen et al., 2007; Santana, Lausen, Bujnowska-Fedak, et al., 2020; Kummervold & Wynn, 2020). Additionally, this capacity might be accessed through the electronic health record (EHR) or incorporated into it (Griffiths et al., 2006 as cited in Bedeley & Palvia, 2019). In spite of the fact that access to the Internet is getting better in many regions of Africa (Oyeyemi, Gabarron, and Wynn, 2019), the issue of Internet connectivity and Internet services continues to be a significant obstacle in many developing nations such as Ghana. Even if there is Internet access available in a particular health institution, the usage of electronic health records (EHR) is frequently unreliable and expensive (Swinfen & Swinfen, 2002). This is because of the poor speed of the Internet and the high cost of utilities (Bedeley & Palvia, 2019). In addition, the usage of electronic health record systems is hindered by the presence of computer viruses, spams, and limited bandwidth (Doarn, Adilova, & Lam, 2020; Geissbuhler, Bagayoko, & Ly, 2007; Swinfen & Swinfen, 2002). This is the case even in situations where Internet services are only available on an intermittent basis. As a result, the problem of inadequate Internet access and limited capacity frequently results in Internet congestion, which in turn has an impact on picture retrieval and image resolution (Durrani, & Khoja, 2009), in addition to other files that are not images. According to Stitchfield, Jagilly, and Tulloh (2007) and Zhao, Nakajima, and Juzoji (2002), this can have a significant and unfavourable impact on the success of treatment regimens and diagnostic procedures.

**Financial Issues**

When it comes to the implementation of health-related information and communication technology initiatives in developing countries, such as electronic health records (EHR), the issue of financial cost is another significant obstacle that must be overcome (Pal, Mbarika, CobbPayton, Datta, & McCoy, 2020; Xue & Liang, 2007). The cost of purchasing the necessary software and hardware, as well as the cost of transportation and installation, the cost of maintenance, and the cost of training the hospital staff (al Shorbaji, 2008; Alverson et al., 2009; Durrani, & Khoja, 2009; Martinez et al., 2020), as well as other unanticipated costs, may be too high to discourage governmental and institutional commitment to the implementation of electronic health records of electronic health records (EHR). According to Bedeley and Palvia (2019), the introduction of electronic health records (EHR) comes with enormous financial duties and commitments, which frequently make the previously established financial problem of health institutions in underdeveloped countries much more severe.

**Resistance to new technologies**

It is common for professionals working in the health care industry, similar to their counterparts in other industries, to be concerned that the incorporation of new electronic health record (EHR) systems into existing work practices will potentially disrupt workflow or alter existing work practices (WHO, 2010). Therefore, healthcare workers are turning to oppose new technical breakthroughs such as electronic health records (EHR), which may pose a danger to their jobs. This is especially true in situations where the organisation that is deploying the new EHR aims to reduce the number of

employees and the cost of operation (Achampong, 2020). The acceptance of such electronic health records is significantly impacted as a result of this.

**Empirical Review**

Hydari, Telang, and Marella (2019) conducted an investigation into the occurrence of adverse patient safety events in Pennsylvania hospitals from the years 2020 to 2020. They discovered that hospitals that had implemented comprehensive electronic health records (EHRs) experienced a decrease of 27% in patient safety adverse events, a reduction of 30% in medication errors, and a decline of 25% in occurrences related to procedures.

The findings of Jamoom, Patel, King, and Furukawa (2019) suggest that 94 percent of physicians believe that electronic health records (EHR) make records easily accessible at the point of care. Additionally, 88 percent of physicians believe that EHR generates clinical benefits for their practice, and 75 percent believe that EHR enables them to provide better patient care. With the assistance of warnings and reminders that are made available by the CDS system, electronic health records (EHRs) are also helpful in reducing the number of prescription errors that occur (Kaushal, Kern, Barron, Quaresimo, & Abramson, 2010). It should come as no surprise that a significant number of healthcare facilities all over the world are currently adopting and utilising electronic health records (EHRs) that include functionalities such as clinical decision support (CDS), computerised physician order entry (CPOE), and health information exchange (HIE), all of which have the undeniable potential to improve the quality of healthcare delivery. Because of this, the United States of America has started penalising healthcare organisations and practitioners who do not make meaningful use of electronic health records

(EHRs) (Schwartz, 2017). This is in addition to providing incentives for meaningful use of EHR data.

On the other side, Himmelstein, Wright, and Woolhandler (2009) arrived at the conclusion that the use of computers resulted in a marginal improvement in quality. Linder, Bates, Middleton, and Stafford (2007) found that the adoption of electronic health records (EHRs) was not connected with quality ambulatory care. A similar finding was made by additional research. They contend that the implementation and utilisation of electronic health records (EHRs) alone is not adequate for the delivery of quality healthcare; rather, the tool must be paired with other systems such as clinical decision support, registry functions, and care delivery changes such as team-oriented methods. In a study that is closely related to this one, Drew, Harris, and Zegre-Hemsey (2019) predict that the use of electronic health records will result in a reduction in the amount of attention that physicians pay to patients during clinical visits. Furthermore, the authors emphasise that due to the enormous volume of alerts that they receive on a daily basis, physicians have a tendency to disregard or fail to respond effectively to cautions that are issued by potential hazard alerts. Based on the findings of their investigation, this results in an elevated danger to the safety of patients.

**Conceptual Framework**

This section explains how the variables link to each other. The independent variable in the study is the electronic health records system whereas the dependent variable is the quality healthcare. The conceptual framework of the study has been presented on Figure 1.

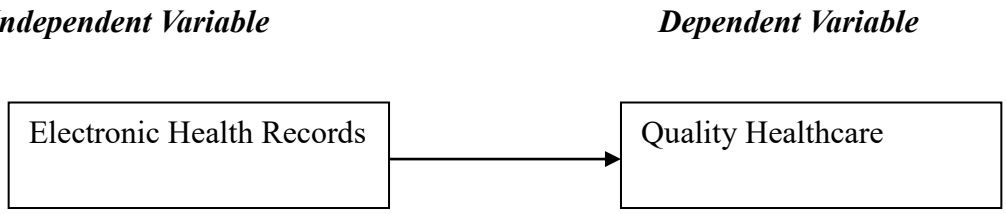


*Figure 1:* Conceptual Framework
Source: Author's Construct (2023)

In this study, the relationship between the Electronic Health Records (EHR) System and Quality Healthcare is explored, with the EHR system serving as the independent variable and quality healthcare as the dependent variable. The conceptual framework, presented in Figure 1, illustrates how these two variables interact and influence each other within the context of healthcare delivery at Accra Medical Centre, Tarkwa Mines.

The EHR system is an essential component of modern health information systems (HIS), used to electronically store and manage patient health data, which includes medical history, prescriptions, lab results, and treatment plans (Adler-Milstein & Jha, 2017). By digitizing patient records, EHRs reduce the reliance on paper-based records, streamline patient data management, and enhance the efficiency of healthcare service delivery (Buntin et al., 2011). The implementation of the EHR system facilitates the seamless exchange of information among healthcare providers, enabling them to make more informed decisions regarding diagnosis and treatment (Evans, 2016). This ultimately contributes to improving the quality of healthcare services.

Quality healthcare, as the dependent variable in this study, is influenced by the efficiency, accuracy, and accessibility of patient information. Research has shown that quality healthcare can be measured through multiple dimensions, such as improved patient outcomes, patient satisfaction, timely

service delivery, and reduced medical errors (Donabedian, 2003). EHRs contribute to enhancing these dimensions by providing real-time access to patient data, reducing the likelihood of errors due to incomplete or outdated information (Buntin et al., 2011). Additionally, EHR systems improve care coordination among different healthcare professionals and departments, ensuring that patients receive comprehensive and continuous care (Kellermann & Jones, 2013).

**Chapter Summary**

This chapter analyzed the theoretical foundation of the study. The study variables were conceptualized, and literature on the relationships to be examined was reviewed to provide empirical support and identify research gaps. The chapter provided visual representation of the hypothesized research objectives, serving as a guiding framework for the investigation. The following chapter outlines the research methodologies employed to achieve the study's objectives.

# CHAPTER THREE

# RESEARCH METHOD

## Introduction

This chapter outlines the research methodology that underpins the study and examines the methods that were used to meet the study's objectives. This chapter covers the research design, the research approach, study area, population, sample and sampling procedure, data collection instrument, data collection procedures and data processing analysis, finally, the ethical consideration.

## Research Paradigm

The research paradigm that underpins this study is post-positivism, a philosophical approach that acknowledges the limitations of traditional positivism while maintaining a commitment to empirical research and scientific rigor. Post-positivism, as an evolution of the positivist paradigm, posits that while the reality of the social world can be approximated through objective measurements and empirical observation, the knowledge we gain is inherently fallible and incomplete (Phillips & Burbules, 2000). In this study, the post-positivist stance informs the investigation of the relationship between Electronic Health Records (EHR) and quality healthcare, acknowledging the complexity of healthcare systems and the multifaceted nature of technological integration.

Post-positivism recognizes that reality is objective but can only be understood through an imperfect and biased lens. This is in contrast to the positivist view, which assumes that reality can be measured directly and accurately. As such, post-positivism emphasizes the need for a rigorous,

systematic approach to research, while also acknowledging that all knowledge is provisional and subject to revision based on new evidence (Creswell, 2014). In the context of this study, the post-positivist paradigm allows for the use of both quantitative and qualitative methods to examine the role of EHR systems in enhancing healthcare quality at the Accra Medical Centre at Tarkwa Mines. The aim is to gather objective data on the system's performance while also recognizing that interpretations of these data are influenced by context, stakeholder perceptions, and external factors.

A key feature of post-positivism is the recognition of researcher subjectivity. Post-positivists argue that researchers, while striving for objectivity, inevitably bring their perspectives, biases, and experiences into the research process (Phillips & Burbules, 2000). This study acknowledges that, despite efforts to maintain objectivity, the researchers' understanding of the EHR system's impact on healthcare quality is shaped by both empirical data and subjective interpretations. In this sense, the post-positivist approach is well-suited to the study's aim of exploring complex relationships, such as the interactions between healthcare providers, patients, and the technological infrastructure of the EHR system.

**Research Approach**

According to Flick (2019), the qualitative approach is based on the interpretivism premise, which states that individuals have their own unique interpretations of the information they have discovered. This strategy is adaptable and can be modified to meet the requirements of capturing new problems as they emerge. The qualitative approach, on the other hand, has been criticised for being time-consuming, lacking in objectivity, and

presenting challenges in terms of analysis and interpretation (Tindana et al., 2021).

The quantitative research approach, on the other hand, seeks to explain a phenomenon by collecting arithmetical data and then performing mathematical analysis on the data (Rahman, 2016). It places more of an emphasis on the characteristics of behaviour that can be quantified as opposed to determining or interpreting the reasons for the actions that resulted in the outcome. It places an emphasis on the number, the amount, or the degree to which. Due to its objectivity, quickness, economy, and extensive coverage, the quantitative approach is utilised by a large number of people. On the other hand, the strategy is not adaptable and is not appropriate for research experiments that do not involve mathematical data. The quantitative technique has also been critiqued for its inability to determine a significantly more in-depth grasp of the activities, experiences, and perspectives of the respondents (Ary et al. 2013). According to Denzin and Lincoln's research from 2020, it has a propensity to prescribe a snapshot of the phenomenon since it fails to take into account the common meanings of the social phenomenon when analysing it. This particular study, on the other hand, employed the quantitative research methodology.

**Research Design**

According to Egharevba, Pharr, van Wyk, and Ezeanolue (2017), a research design is a methodological approach that is followed by a researcher in order to provide a response to an inquiry that is being investigated. It is a comprehensive plan that outlines the procedures that would be followed in order to carry out the research. It includes the methods of data collecting, the

instruments that are utilised, the manner in which they are utilised, and the methods of analysing the data that has been obtained. For this particular study, the researcher decided to conduct a survey investigation that was both descriptive and explanatory. With a more comprehensive objective, the study aimed to investigate the impact that electronic health records systems have on the quality of healthcare. As a result of the fact that the study aimed to investigate the causal relationship that exists between the variables, the research design that was utilised was the explanatory research design (Mavchira, 2019).

The primary objective of the survey design was to collect relevant data that might serve as a foundation for obtaining results and drawing conclusions. In descriptive surveys, the researcher only selects the necessary variables for the study of the correlations and describes the way things are. According to Bartels (1997), descriptive surveys are conducted when the events or situations being interviewed either already exist or have already taken place. As a result, this research design was appropriate for the study since the data was gathered through the use of a questionnaire in order to provide answers to the research questions about electronic health record systems and quality health care. It was mentioned in Polio (2020) that there are a few challenges associated with the utilisation of survey design.

The following are some of the challenges that they cite: ensuring that the questions are extremely clear and not deceptive; obtaining responses from respondents that are honest and intelligent; and ensuring that sufficient numbers of surveys are filled out and returned in order to enable significant analysis to be performed. In an effort to reduce the impact of these challenges,

the questionnaires were examined by the specialists. Further, only a small number of respondents were piloted in order to assess their responses. The researcher was able to determine whether or not the responses that were provided were in accordance with the objectives of the study. As an additional point of interest, the researcher enabled respondents to voluntarily answer the questions. Because only those individuals who were willing to take part in the research were taken into consideration, this also helped to improve the level of honesty that was required from the respondents.

**Study Area**

The study area for this research is the Accra Medical Centre at Tarkwa Mines, which is part of Goldfields Ghana Limited, one of the leading mining companies in Ghana. This healthcare facility serves as a pivotal health service provider for the employees and their families working in the Tarkwa Mines, located in the Western Region of Ghana. The medical centre is situated in a mining community, which presents unique challenges and opportunities for the delivery of healthcare services. The focus of this study is to examine the Electronic Health Records (EHR) system and its impact on quality healthcare in this setting.

Tarkwa Mines, being a large-scale gold mining operation, hosts a significant number of workers, many of whom rely on the Accra Medical Centre for their healthcare needs. The medical centre plays a crucial role in ensuring the health and wellbeing of these workers, who are often exposed to various occupational hazards such as heavy machinery, dust, and chemicals that can affect their health (Agyemang, 2019). As such, healthcare in this setting must be responsive to the specific health challenges posed by the

mining environment, while also adhering to the general healthcare needs of the community, such as maternal and child health, emergency care, and chronic disease management.

In recent years, Goldfields Ghana Limited has invested heavily in technology to enhance its operational efficiency, including the implementation of EHR systems at the medical centre. This move is part of the company's broader strategy to modernize its healthcare services and align them with global best practices in health management (Goldfields Ghana, 2020). The implementation of the EHR system is expected to improve the quality of healthcare by ensuring more accurate record-keeping, facilitating better communication between healthcare providers, and reducing medical errors. In this study, the Accra Medical Centre at Tarkwa Mines serves as the ideal case study to assess the impact of EHR systems in a resource-constrained setting, where technological adoption may be slower, but the potential for improvement is high.

The choice of this study area is significant because it provides insights into how technology can be leveraged in a specific context to improve healthcare quality in mining communities. These communities often face distinct health challenges, such as limited access to advanced medical facilities, remote location, and a high prevalence of work-related injuries (Ghana Statistical Service, 2017). The Accra Medical Centre provides an essential service to a large population, and the introduction of an EHR system could potentially address some of the systemic inefficiencies and challenges inherent in healthcare delivery in such environments.

Moreover, the integration of EHR systems at the medical centre

represents a shift toward modern healthcare practices in the mining industry. In many developing countries, including Ghana, healthcare facilities in industrial zones or remote areas may still rely on paper-based record-keeping, which can result in lost information, delayed treatments, and suboptimal patient care (Buntin et al., 2011). By exploring the implementation of EHRs in this unique setting, this study aims to contribute to a deeper understanding of the challenges and benefits of adopting health information technologies in similar contexts.

**Population**

The employees of the Accra Medical Centre at Tarkwa Mines were the intended recipients of the message. Those individuals who were the focus of the research were those who were employed at the Accra Medical Centre located in Tarkwa Mines. Two hundred and Eighty-six (286) employees were employed in total (AMC report, 2022).

**Sample Size and Sampling Procedure**

Sampling is the process of selecting a group from a population on the basis of its ability to accurately reflect the population as a whole. In many cases, data is not collected from the complete population, as stated by Thygesen and Ersbøll (2019). According to Ritchie, Lewis, and Elam (2013), the primary purpose of sampling is to select a group of components that are representative of the population; this group should mirror the characteristics of the population. During the process of selecting the sample for the data collection, the technique of convenience sampling was utilised. In order to accommodate the busy schedules of the staff members working in their numerous offices, the convenience sample method was utilised for this

research project (Sekaran & Bougie, 2010).

In addition, the approach of convenience sampling was utilised because of the unpredictability of the type of the changes that would occur in the operations and the real time that the workers will be accessible to answer questions. According to Al-Shaalan (2019), the technique of convenience sampling is typically utilised in research of this kind since it is considered to be more appropriate for the purpose of gathering a large number of responses in a short amount of time and with minimal expenditure. With the required parameters (z=1.97, e = 0.05, p=0.5, and N = 286), the suitable sample size was determined to be 140. This was determined by using the sampling size computation proposed by Krejcie and Morgan (1970) (n=(385/(1+(385-1)/286)). There was a total of 140 people that participated in the study.

**Data Collection Instruments**

The sample was collected through the use of questionnaires that were self-administered by the participants. According to Plano and Badiee (2010), a questionnaire is a collection of questions that have a specific goal and are prepared for a specific group of individuals to be administered by the specific group of individuals themselves within a specific amount of time. According to Plano and Badiee (2010), the use of a questionnaire ensures a high level of efficiency in the collecting of data as well as a high level of generalizability of the results in comparison to more intensive research designs. According to Plano and Badiee (2010), the questionnaire was selected for the data collecting process because it is a self-reported measure that ensures anonymity. There is also a greater possibility that it will elicit truthful responses from the respondents in reference to the information that is requested from them.

Additionally, the usage of relevant wording was employed in order to minimise ambiguity and to pique the interest of the respondents.

For the purpose of developing the questionnaire, an existing scale for electronic health records system (Gonos & Gallo, 2013; Goldman, 1998) and quality healthcare (Al Mehrzi & Singh, 2016; Sun & Bunchapattanasakda, 2019) was utilised. The questionnaire contains questions about the advantages of electronic health records (Yu, 2019) as well as the difficulties associated with health records (Houlis, 2019). There were a total of 35 questions on the questionnaire, which were organised into five primary sections (i.e., Section I-IV). There were five statements that were included in Section I, and they were used to determine the demographic information of the respondents. Questions pertaining to the Electronic Health Records System were included in Section II of the questionnaire. On the subject of quality healthcare was Section III. EHR's advantages were discussed in Section IV. And last, Section V discussed the difficulties that HER presents. A Likert scale of five points was used to measure all of the variables in the study. On this scale, one indicated significant disagreement, and five indicated strong agreement.

**Validity**

In the context of research, validity refers to the degree to which instruments (such as questionnaires or organised interview schedules) measure what they are intended to assess. To put it another way, validity refers to the degree to which the chosen instrument is able to measure the objectives of the research that is being conducted (Bowling, 2009).

With regard to this particular investigation, a number of different approaches were utilised in order to validate and improve the content of the

questionnaire. For the purpose of addressing the issue of face validity, the researcher read through the questionnaires and made any necessary adjustments before distributing them. Due to the fact that all of the efforts and opinions of specialists regarding the substance of the questionnaire were taken into consideration, certain items were either added to or removed from the questionnaire. The use of straightforward language was done in order to improve clarity and to ensure that the instrument is applicable in every possible way.

**Reliability**

When it comes to dependability, it may be seen as the degree to which the utilisation of a scale yields consistent outcomes when repeated measurements are carried out (Anwer et al, 2021). The achievement of this goal is accomplished by maintaining a consistent level of results despite changes in both time and location (Bowling, 2009). Testing the homogeneity that evaluates the extent to which personal items are inter-correlated and the extent to which they correlate with overall scale findings is an example of internal consistency. This type of testing may be carried out with the use of Cronbach's alpha test (Hertzog, 2008). Internal consistency is a component of homogeneity testing. Within the realm of observation, the word "reliability of observations" refers to the same inferences or actions that are carried out during intra-observation (one observation at a distinct time) and inter-observation (more than one observer) (Hertzog, 2008).

As part of this study, the Cronbach's coefficient alpha (α) was employed to ascertain the degree of reliability exhibited by the items contained within the questionnaire. 0 to 1 was the range of values that

Cronbach's alpha could take. When the value of α is closer to 1, the reliability of the data is higher. This is an important point to keep in mind. Cronbach's alpha was utilised in order to determine the degree of reliability that the data that was acquired possessed.

**Data Collection Procedure**

Obtaining a letter of introduction from the University of Cape Coast was found to be possible. In the following step, approval was requested from the Accra Medical Centre located at Tarkwa Mines, which was the industry that was taken into consideration for the study. The respondents were given the highest assurance that their responses would be treated with the utmost confidentially and that the study was conducted for academic purposes. One week was allotted to the respondents for the purpose of returning completed surveys.

**Ethical Considerations**

As Mundalamo, Ramakuela, and Ndou (2018) state, ethics is primarily related with morality and deals with concerns of right and wrong among groups, societies, or communities. In other words, ethics is concerned with morality. According to Rubin and Babbie (2016), it is essential for all individuals interested in conducting research to be aware of the ethical concerns that are involved. A thorough investigation was conducted by the researcher in order to prevent any potential violations of ethical rules.

In the course of this research, a concerted effort was made to safeguard the participants' rights and to forestall any potential adverse effects that the study might have on them. The researcher gave the participants the choice to voluntarily participate in the study or to opt out of participating in the study.

They were also given the assurance that their participation would be kept confidential. In addition, respondents were given the assurance that the responses they supplied would be utilised exclusively for the purpose of the study, and that under no circumstances would the responses be shared to a third party or used for a purpose other than the one for which they were submitted. In an effort to gain the participants' confidence, we did not collect any personal information, including the names of managers, telephone numbers, or addresses, as well as the names of the companies that participated in the study. Respondents were given the assurance that they would maintain a high level of anonymity and confidentiality.

**Data Processing and Analysis**

After a week had passed, a total of 140 questionnaires were collected, and each and every one of them was utilised in the research. As a result, the response rate was one hundred percent, which is a satisfactory rate. An adequate response rate is fifty percent, sixty percent is good, and more than seventy percent is very good, as stated by Mugenda and Mugenda (2020) and Kuria (2017). After that, the 140 surveys were given numerical values, which were then coded, and they were entered into SPSS. The statistical software SPSS was utilised for the purpose of assessing the demographic variables and descriptive statistics, whereas multiple regression statistics were utilised for the purpose of analysing the objectives of the study. Following the implementation of suitable evaluation criteria for the measurement and structural models of the multiple regression, the data were presented and discussed after they had been analysed.

## Chapter Summary

In this chapter, particular research methodologies that were utilised in the study were discussed. This included the research design, the population, the sample, and the sampling technique, the tools that were utilised, the procedure for collecting data, and the procedure for analysing the results. It also offered an explanation and justification for the procedures and data collection tools that were utilised in the research.

# CHAPTER FOUR

# RESULTS AND DISCUSSION

## Introduction

The result and discussion are dealt with in the chapter. This study was aimed on the examination of the effect of electronic health records system on quality healthcare. The study is demarcated into various subsections. The demographic characteristics were explained under the first section. The subsequent sections examined the study's objectives.

## Demographic Characteristics

The analysis evaluated the demographic profiles of the gathered data from the respondents. The respondents were asked to state their experience and other characteristics. Table 1 shows the demographic characteristics of the respondents.

**Table 1: Demographic Characteristics**

| Variable | Frequency | Percent |
|---|---|---|
| **Gender** | | |
| Male | 87 | 62.1 |
| Female | 53 | 37.9 |
| **Age** | | |
| 18-24 | 27 | 19.3 |
| 25-34 | 49 | 35.0 |
| 34-44 | 20 | 14.3 |
| 45-55 | 31 | 22.1 |
| 56-65 | 12 | 8.6 |
| above 65 | 1 | 0.7 |
| **Educational Level** | | |
| Non formal | 9 | 6.4 |
| Primary Education | 10 | 7.1 |
| Secondary Education | 22 | 15.7 |
| University | 88 | 62.9 |
| Other | 11 | 7.9 |
| **Total** | **140** | **100** |

Source: Field Survey (2023)

Out of 140 respondents, 87 of the respondents were male. This represented 62.1 percent of the respondents. 53 of the respondents were females. This also represented 37.9 percent of the respondents.

Forty-nine of the respondents were between 25 to 34 years. This represented 35 percent of the respondents. 31 of the respondents were between 45-55 years. This also represented 22.1 percent of the respondents. 27 of the respondents were between the ages of 18 to 24 years. This represented 19.3 percent of the respondents. 20 of the respondents were between the ages of 34 to 44 years. This represented 14.3 percent of the respondents. 12 of the respondents were between the ages of 56 to 65 years. This represented 8.6 percent of the respondents. One of the respondents were above the age of 65 years. This represented 0.7 percent of the respondents.

Eighty-eight (88) of the respondents had university level certificate. This represented 62.9 percent of the respondents. 22 of the respondents were holding secondary certificate. This represented 15.7 percent of the respondents. 11 of the respondents were holding other certificate. This represented 7.9 percent of the respondents. 10 of the respondents were holding primary education certificate. This also represented 7.1 percent of the respondents. Nine (9) of the respondents had non-formal education. This represented 6.4 percent of the respondents.

**Effect of Health care records system on Quality Healthcare**

The first objective of the study was to analyze the effect of healthcare record system on quality healthcare. The simple regression was utilized in analysing the study's objectives.

**Reliability and Validity Test**

Reliability and validity in research projects are significant to determine the degree to which the scales of the measurements are valid and reliable. To conduct this, the Cronbach Alpha test was used to investigate internal consistency of the constructs. The Cronbach Alpha acceptable test rate was 70% or 0.7 and any construct recording below this limit indicates poor internal consistency. The factor analysis was applied to examine the measurement scale validity. For an acceptable factor analysis number of vital hypothesis is important. For example, Kaiser-Meyer-Oklin (KMO) values must be 50% (0.50) or more and the probability of Bartlett's Test of Sphericity must be significant (p-value < 0.05). Furthermore, the factor loadings of the elements or items must be greater than 0.6 and the Average Variance Extracted (AVE) must be 0.5 or better (Hair, 2010). The reliability and validity of the individual constructs have been presented in detail below.

**Validity and reliability results for electronic health records system**

In assessing the construct, seven elements were used to measure electronic health records system. After the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (.885), determinant (.025) and Bartlett's Sphericity Test ($X^2(15) = 508.464$; $p<0.05$) assumptions were met, factor analysis was conducted on all six items. The seven components used to measure the construct were highly loaded (>.5). On the seven (7) items using the Cronbach Alpha, reliability tests were carried out. Cronbach's Alpha was registered at .903. This suggests that the seven elements were accurate in measuring the EHR. The naïve method was used to measure the EHR variable.

**Table 2: Exploratory Factor Analysis on EHR**

| | Factor Loading |
|---|---|
| The EHR system is user-friendly and easy to navigate. | .842 |
| The EHR system efficiently supports our daily workflow and tasks. | .832 |
| The EHR system effectively stores and retrieves patient information. | .860 |
| The EHR system provides accurate and up-to-date patient data. | .812 |
| The EHR system ensures the privacy and security of patient information. | .865 |
| Training and support for using the EHR system are adequate. | .724 |
| The EHR system allows for efficient data entry and updating. | .788 |
| Cronbach Alpha | 0.903 |
| Eigenvalue | 3.363 |
| % of Variance | 67.26 |
| KMO=0.885; $\chi^2$=508.464; df=15; p-value=0.000 | |

Source: Field Survey (2023)

**Validity and reliability results for Quality Healthcare**

In assessing the construct, eight (8) elements were used to measure quality healthcare. After the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (.886), determinant (.027) and Bartlett's Sphericity Test ($X^2(10)$ = 502.549; $p<0.05$) assumptions were met, factor analysis was conducted on all eight items. The eight components used to measure the construct were highly loaded (>.5). On the eight (8) items using the Cronbach Alpha, reliability tests were carried out. Cronbach's Alpha was registered at .919. This suggests that the five elements were accurate in measuring the variable quality healthcare. The naïve method was used to measure the quality healthcare.

**Table 3: Exploratory Factor Analysis on quality healthcare**

| | Factor Loading |
|---|---|
| The health records system effectively captures and stores patient information. | .820 |
| The system ensures the accuracy and completeness of patient records. | .827 |
| The system allows for easy retrieval and access to patient data. | .897 |
| The health records system supports interoperability with other healthcare systems. | .906 |
| The system's user interface is intuitive and easy to navigate. | .879 |
| The system enhances data security and patient privacy. | .789 |
| The health records system supports clinical decision-making and care coordination. | .818 |
| Training and support for using the health records system are adequate. | .809 |
| Cronbach Alpha | 0.919 |
| Eigenvalue | 3.788 |
| % of Variance | 75.76 |
| KMO=0.886; $\chi^2$=502.549; df=10; p-value=0.000 | |

Source: Field Survey (2023)

**Diagnostic Tests**

A diagnostic test was used to derive conclusions about the connections between the research variables. The tests were run to assess whether or not it was necessary to conduct an empirical analysis of the data using simple regression analysis. When the essential assumptions are followed, as Greene (2002) explains, regression may be properly calculated. As a result, it was determined that multicollinearity and auto correlation among the research variables were present.

**Test of Independence**

The independence of error terms, commonly known as the auto correlation test, denotes the independence of observations. It was checked using the Durbin Watson (DW) test to make sure the model's residuals were

not autocorrelated. DW values ranging from 0 to 4 and scores between 1.5 and 2.5, according to Garson (2020), imply independent observations.

Table 8 shows that the residuals of the empirical model are not autocorrelated, with D.W = 2.053 ranging between 1.5 and 2.5, implying that all variables passed the necessary threshold of less than 2.5 and that all variables exhibited no auto correlation, as specified by Garson (2020).

**Hypothesis Testing**

Simple regression analysis was used to experimentally evaluate the objective one. To determine the degree and amplitude of the link between the variables, as well as to evaluate the hypothesized correlations, regression analysis was used. To reach a conclusion, the objective were tested at a 95 percent confidence level.

**Goodness of Fit**

Table 8 displayed the model summary findings, which were estimated to demonstrate the explained differences between electronic health records system on quality healthcare through $R^2$ change. On the model summary, Table 8 shows the regression results. The adjusted coefficient of multiple determinant = 0.712 in the regression analysis on Table 8, implying that electronic health records system explained 71.2 percent of the variance in quality healthcare.

**Table 4: Model Summary**

| Model | R | R Square | Adjusted Square | R Std. Error of the Estimate | Durbin-Watson |
|---|---|---|---|---|---|
| 1 | .4881[a] | .7761 | .712 | .05161 | 2.053 |

Source: Field Survey (2023)

**Joint Significance**

The ANOVA results were calculated to illustrate the model fitness by F-ratio findings between electronic health records system and quality healthcare, as shown in Table 9.

The regression findings in Table 9 showed an excellent fit of the model, with a significant value of ($F(1, 141) = 9352.521$, $p < 0.05$, indicating that the suggested model fit well.

**Table 5: ANOVA**

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 124.580 | 1 | 24.916 | 9352.521 | .000[b] |
| | Residual | .362 | 138 | .003 | | |
| | Total | 124.942 | 139 | | | |

Source: Field Survey (2023)

**Table 6: Test of significance of each independent variable**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | -.036 | .022 | | -1.634 | .105 |
| | EHR | .608 | .007 | .642 | 90.173 | .000 |

Source: Field Survey (2023)

**Test of significance of each independent variable**

Table 10 provides regression results for electronic health records system and quality healthcare.

Electronic health records system is established to be statistically significant at ($B = 0.608$, $t = 90.173$, $p< 0.05$) at 95 percent level of confidence, according to the regression results shown in Table 10. The model

revealed that electronic health records system had a favorable impact on quality healthcare. According to the data, a unit increase in EHR t is responsible with a 0.608 rise in quality healthcare. EHRs make patient data readily accessible to authorized healthcare providers, regardless of location. This enables quick access to a patient's medical history, test results, and treatment plans, leading to better-informed decisions and more coordinated care.

EHRs can help reduce errors caused by illegible handwriting or lost paper records. By providing clear and standardized documentation, they contribute to better accuracy in medical records and prescription orders. EHR systems often include decision support tools that provide alerts and reminders for healthcare providers. These alerts can help prevent medication errors, identify potential drug interactions, and ensure adherence to best practices and clinical guidelines. EHRs facilitate the sharing of patient information among different healthcare providers and institutions. This interoperability leads to better care coordination, particularly for patients with complex medical histories and those receiving care from multiple specialists. EHRs enable secure and efficient communication among members of the healthcare team. Healthcare providers can exchange messages, notes, and updates related to a patient's care, promoting collaboration and reducing the risk of miscommunication.

Many EHR systems provide patients with access to their own health records, allowing them to review lab results, appointment schedules, and treatment plans. This transparency can empower patients to take a more active role in managing their health. EHRs store vast amounts of patient data that can

be analyzed to identify trends and patterns. Healthcare organizations can use this data to improve population health management, track disease outbreaks, and implement preventive care strategies. EHRs can automate administrative tasks such as billing, insurance claims, and appointment scheduling. This can reduce administrative overhead, allowing healthcare providers to focus more on patient care.

EHR data can be used for research purposes and quality improvement initiatives. Researchers can access de-identified patient data to study diseases, treatment outcomes, and healthcare trends, ultimately leading to advancements in medical knowledge and care protocols. EHR systems help healthcare organizations comply with regulatory requirements and standards, such as those related to privacy (e.g., HIPAA) and meaningful use. This ensures that patient information is handled securely and that the quality of care meets established standards.

**Benefits in the usage of electronic health record system at Accra Medical Centre at Tarkwa Mines**

The second objective of the was to examine the benefits in the usage of electronic health record system at Accra Medical Centre at Tarkwa Mines. The mean and standard deviation were employed in achieving the objective. The result has been presented on the Table below;

**Table 7: Benefits in the usage of electronic health record system at Accra Medical Centre at Tarkwa Mines**

| Benefits | Mean | Standard Deviation |
|---|---|---|
| Improve quality of care | 3.23 | 1.238 |
| Enhance productivity and efficiency | 3.19 | 1.245 |
| Improved care coordination and communication | 3.17 | 1.378 |
| Reduction of cost and enhanced revenue | 3.15 | 1.167 |
| Privacy of patient records. | 3.12 | 1.289 |

Source: Field Survey (2023)

From the table, improve quality of care" has a mean rating of 3.23, indicating that, on average, respondents believe that the EHR system has a positive impact on improving the quality of care at the medical center. The standard deviation of 1.238 suggests that opinions on this benefit vary somewhat among respondents. This benefit refers to the positive impact of the electronic health record (EHR) system on the quality of healthcare provided at Accra Medical Centre at Tarkwa Mines. EHRs can enhance the quality of care by providing healthcare providers with easy access to comprehensive patient information, reducing errors, enabling evidence-based practices, and facilitating better decision-making.

"Enhance productivity and efficiency" has a mean rating of 3.19, suggesting that users generally perceive the EHR system as beneficial for increasing productivity and efficiency at the medical center. The standard deviation of 1.245 indicates some variability in respondents' opinions. The EHR system is believed to improve the productivity and efficiency of healthcare professionals and staff. This is often achieved through features like automated documentation, streamlined workflows, and faster access to patient

records, which reduce time spent on administrative tasks and enable healthcare providers to see more patients and provide care more efficiently.

"Improved care coordination and communication" has a mean rating of 3.17, indicating that, on average, respondents believe the EHR system contributes to better care coordination and communication. The standard deviation of 1.378 suggests a relatively wide range of opinions on this benefit. EHR systems promote better coordination and communication among healthcare teams. They allow multiple providers to access the same patient's records, view test results, and share information easily. This can lead to more effective collaboration, reduced duplication of tests and procedures, and ultimately better patient care.

"Reduction of cost and enhanced revenue" has a mean rating of 3.15, indicating that, on average, respondents think the EHR system leads to cost reduction and enhanced revenue. The standard deviation of 1.167 suggests some variability in respondents' perceptions. EHR systems can contribute to cost reduction by reducing paperwork, improving billing accuracy, and minimizing errors. Enhanced revenue can result from improved coding and billing processes, quicker reimbursement, and the ability to capture charges more accurately, which can have a positive financial impact on a medical center.

"Privacy of patient records" has a mean rating of 3.12, suggesting that users generally believe the EHR system helps maintain the privacy of patient records. The standard deviation of 1.289 indicates a degree of variability in opinions about this benefit. This benefit pertains to the security and confidentiality of patient health records. EHR systems often come with robust

security features and access controls to protect patient data from unauthorized access or breaches. Ensuring the privacy of patient records is critical to maintaining patient trust and complying with healthcare privacy regulations like HIPAA.

**Challenges affecting the utilization of electronic health record system at Accra Medical Centre at Tarkwa Mines**

The third objective of the was to examine the challenges affecting the utilization of electronic health record system at Accra Medical Centre, Tarkwa Mines. The mean and standard deviation were employed in achieving the objective. The result has been presented on the Table below;

**Table 8: Challenges affecting the utilization of electronic health record system at Accra Medical Centre at Tarkwa Mines**

| Challenges | Mean | Standard Deviation |
|---|---|---|
| Inadequate electric power supply | 3.40 | 1.243 |
| Lack of ICT Infrastructure | 3.35 | 1.251 |
| Lack of basic ICT knowledge/skills | 3.32 | 1.195 |
| Poor Internet connectivity | 3.07 | 1.033 |
| Financial Issues | 2.96 | 1.294 |
| Resistance to new technologies | 2.10 | 1.203 |

Source: Field Survey (2023)

From the table, inadequate electric power supply has a mean rating of 3.40, indicating that, on average, respondents consider the lack of a reliable electric power supply to be a significant challenge for the utilization of the EHR system. The standard deviation of 1.243 suggests some variability in opinions, but it generally indicates a high level of concern. This challenge refers to the insufficient and unreliable electric power supply in the region. In

healthcare, EHR systems rely heavily on electricity to operate, and interruptions in power supply can disrupt the use of electronic records, potentially leading to data loss or delays in patient care.

Lack of ICT Infrastructure has a mean rating of 3.35, suggesting that respondents view the absence of adequate information and communication technology (ICT) infrastructure as a notable challenge. The standard deviation of 1.251 indicates a significant level of concern among respondents. The absence of a robust information and communication technology (ICT) infrastructure can hinder the effective implementation and usage of EHR systems. This may include insufficient computer hardware, networking infrastructure, or data storage capacity required to support the EHR system.

Lack of basic ICT knowledge/skills has a mean rating of 3.32, indicating that, on average, respondents perceive a lack of basic ICT knowledge and skills as a significant obstacle to using the EHR system effectively. The standard deviation of 1.195 suggests that opinions are relatively consistent on this challenge. This challenge relates to a deficiency in the knowledge and skills of healthcare staff when it comes to using ICT tools and EHR systems. Without the necessary training and familiarity with these technologies, healthcare professionals may struggle to efficiently use the EHR system, leading to inefficiencies and potential errors.

Poor Internet connectivity has a mean rating of 3.07, indicating that respondents view poor Internet connectivity as a challenge but perhaps slightly less severe than the previous ones. The standard deviation of 1.033 suggests a moderate level of concern with some variability in opinions. Reliable internet connectivity is essential for accessing and updating electronic health records,

especially in situations where remote access or cloud-based systems are used. Poor internet connectivity can lead to slow response times, data synchronization issues, and difficulties in accessing patient information when needed.

Financial Issues has a mean rating of 2.96, suggesting that financial constraints are a concern, but it is rated lower compared to the other challenges. The standard deviation of 1.294 indicates a moderate level of concern with some variability. Financial challenges can encompass various aspects, such as budget constraints for investing in EHR technology, ongoing maintenance costs, or the need for infrastructure upgrades. Limited financial resources can impede the acquisition and maintenance of the EHR system and related equipment.

Resistance to new technologies has the lowest mean rating of 2.10, indicating that, on average, respondents perceive resistance to new technologies as a lesser challenge compared to the others. The standard deviation of 1.203 suggests some variability in opinions, but generally, respondents are less concerned about this challenge. Resistance to adopting new technologies, including EHR systems, can be a significant challenge in healthcare settings. Healthcare professionals may be hesitant to change established workflows and practices, which can slow down the adoption and effective utilization of EHR systems.

In summary, these challenges collectively highlight the barriers faced by Accra Medical Centre at Tarkwa Mines in implementing and utilizing EHR systems. These barriers range from infrastructure and technological limitations to workforce-related issues and financial constraints. Addressing these

challenges is essential to ensure the successful implementation and long-term use of EHR systems, which can bring significant benefits to healthcare organizations and patient care.

**Chapter Summary**

This chapter analyzed and discussed the three objectives of study. The chapter begun with explaining the demographic characteristics of the study. Exploratory factor analysis was done on all variables that were measured on Likert Scale. Simple regression and descriptive statistics were employed in analysing the study's objectives.

# CHAPTER FIVE

# SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

## Introduction

This happens to be the study's final chapter. The summary of the findings, conclusions and policy implications and recommendations are discussed in this chapter. For further study, the chapter also includes suggestions.

## Summary

The research studied on the effect of electronic health records system on quality healthcare using Accra Medical Centre at Tarkwa Mines as the case. The first objective of the study was to analye the effect of electronic health record systems on quality healthcare; the second objective of the study was to examine the benefits in the usage of electronic health record system at Accra Medical Centre at Tarkwa Mines. The third objective of the study was to examine the challenges affecting the utilization of electronic health record system.

The study was centered on action network theory and technology acceptance model. The study employed the explanatory research design since the study tested the relationship between the various variables. The data collection instruments were questionnaire. The study employed the quantitative research approach. The convenience random sampling technique was used in selecting a respondent of 140 respondents. Descriptive and Multiple Regression were also used to analyze the objectives of the study.

The result from the analysis showed that, electronic health records system influences quality healthcare. Also, the study found improved quality

of care, enhanced productivity and efficiency and improved care coordination and communicaton as the benefits of utilizing HER. The study also found that challenges such as inadequate electric power supply, lack of ICT infrastructure, Lack of basic ICT knowledge/skills, poor internet connectivity and financial issues were the key challenges in utilizing EHR

**Conclusion**

The study concludes that there is a positive and significant relationship between the Electronic Health Records (EHR) system and quality healthcare at the Accra Medical Centre at Tarkwa Mines. The findings reveal that the implementation of the EHR system has led to noticeable improvements in the quality of healthcare services provided at the facility. EHR systems have been shown to facilitate better documentation, streamline patient management, and ensure that healthcare providers have quick and easy access to comprehensive and up-to-date patient information. This has, in turn, resulted in enhanced decision-making, faster diagnosis, and improved treatment outcomes, all of which are key indicators of quality healthcare (Buntin et al., 2011; Evans, 2016).

Furthermore, the study highlights that the introduction of the EHR system not only improves the quality of care but also enhances productivity and efficiency in healthcare delivery. By digitizing patient records and automating various administrative processes, the EHR system has significantly reduced the time spent on manual data entry and retrieval. Healthcare providers now spend less time searching for patient information, which allows them to focus more on direct patient care. This increased efficiency reduces delays in diagnosis and treatment, thereby improving patient outcomes and

overall satisfaction (Adler-Milstein & Jha, 2017). Additionally, the system's ability to facilitate communication and coordination between different healthcare providers has led to more effective care delivery, particularly in the management of complex medical cases that require collaboration across various departments (Kellermann & Jones, 2013).

One of the most notable benefits of EHRs, as found in this study, is their role in improving patient safety. The ability of healthcare providers to quickly access accurate and complete patient records significantly reduces the risk of medical errors, such as drug interactions or incorrect diagnoses due to incomplete information (Buntin et al., 2011). The system's alert features, which notify healthcare providers of potential risks or adverse events, further contribute to patient safety and reduce the likelihood of harm. Moreover, the system enables the tracking of patient progress over time, making it easier to monitor chronic conditions and intervene proactively when necessary, which is critical in ensuring long-term health outcomes.

The study also underscores the economic advantages of implementing an EHR system in healthcare settings. While the initial setup of the system requires significant investment, the long-term benefits, such as reduced administrative costs, improved billing processes, and fewer medical errors leading to costly litigation or unnecessary treatments, result in substantial cost savings for the healthcare facility. Moreover, the increased productivity of healthcare providers—achieved through streamlined workflows and reduced manual paperwork—translates into the ability to serve more patients in a shorter amount of time without compromising the quality of care (Shaw et al., 2013).

In addition, the study affirms that EHR systems not only enhance the internal operations of the medical facility but also positively impact the patient experience. With better care coordination, patients are more likely to experience shorter waiting times, fewer repeat tests, and a higher level of personalized care. This, in turn, increases patient satisfaction, which is a critical component of quality healthcare. The integration of EHRs has also made it easier for patients to access their own health records, empowering them to take a more active role in their healthcare decisions (Adler-Milstein & Jha, 2017).

This study demonstrates that the EHR system has a transformative effect on healthcare delivery at the Accra Medical Centre at Tarkwa Mines. The implementation of this system leads to enhanced healthcare quality, improved operational efficiency, and increased productivity, all of which contribute to better patient outcomes and satisfaction. The findings underscore the importance of adopting health information technologies in resource-constrained settings, where the potential for improvement is high and the benefits far-reaching. Given the success of the EHR system at this facility, similar healthcare settings—especially in the mining sector or rural areas—can draw valuable lessons for improving healthcare delivery through the integration of digital health technologies.

**Recommendations**

This study makes the following recommendation:

- Invest in Reliable Power Backup: Given the challenge of inadequate electric power supply, consider investing in reliable power backup solutions such as uninterruptible power supplies (UPS) and backup

generators. These can help ensure that the EHR system remains operational during power outages.

- Upgrade ICT Infrastructure: Allocate resources to upgrade the ICT infrastructure, including acquiring modern computer hardware, networking equipment, and data storage solutions. A robust infrastructure is essential for the smooth functioning of the EHR system.
- Provide ICT Training: Offer training programs to healthcare staff to improve their ICT knowledge and skills. Training can empower them to use the EHR system effectively, reduce errors, and enhance productivity.
- Improve Internet Connectivity: Work with internet service providers to address poor internet connectivity issues. Explore options for redundant internet connections or faster broadband services to ensure reliable and fast access to the EHR system.
- Financial Planning: Develop a comprehensive financial plan that includes budgeting for the EHR system's acquisition, implementation, and ongoing maintenance. Explore potential sources of funding or grants to support EHR initiatives.
- Change Management: Implement a change management strategy to address resistance to new technologies. Engage with healthcare professionals, involve them in the decision-making process, and communicate the benefits of EHR adoption to gain their buy-in.
- Security Measures: Prioritize data security and privacy by implementing robust security measures within the EHR system. Ensure

that patient data is protected from unauthorized access and breaches, which can help build trust among patients and staff.

**Suggestions for Further Studies**

In future research, a bigger sample size would be suitable to establish the link between the variables, since this would result in more accurate data that would better represent the wider society.

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# APPENDIX

## UNIVERSITY OF CAPE COAST

## MASTER OF BUSINESS ADMINISTRATION IN MANAGEMENT

## RESEARCH QUESTIONNAIRE

Dear Sir,

I am a student of UCC pursuing a Master's degree. As part of our curricular activities for the award of Master's degree, I am undertaking a survey on ***"ELECTRONIC HEALTH RECORDS SYSTEM AND QUALITY HEALTHCARE: THE CASE OF THE ACCRA MEDICAL CENTRE AT TARKWA MINES***. Kindly tick in the box and space provided with the correct answers. Where required, please specify and elaborate.

***Confidentiality***: The data collected from this survey will be used ONLY for academic purposes and will not be shared with any organization or individual. The information gathered will be analyzed such that an individual or institution's data will not reflect in the final findings and conclusions from the study.

***Thank you very much for your time!***

**Please write or tick [√] where applicable**

### SECTION A: DEMOGRAPHIC INFORMATION OF RESPONDENTS

1. Sex distribution Male [ ] Female [ ]
2. Age range of respondents in years:

   18-24 [ ] 25-34 [ ] 35-44 [ ] 55-65 [ ] 65-above [ ]
3. Educational level:

   Non formal [ ] Primary Education [ ] Secondary Education [ ]

   University [ ]

## SECTION B: ELECTRONIC HEALTH RECORDS SYSTEM

To what extent do you **AGREE** with the following statement

**1-Least Agree; 2- Disagree; 3-Neutral; 4- Agree; 5-Strogly Agree**

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| The EHR system is user-friendly and easy to navigate. | | | | | |
| The EHR system efficiently supports our daily workflow and tasks. | | | | | |
| The EHR system effectively stores and retrieves patient information. | | | | | |
| The EHR system provides accurate and up-to-date patient data. | | | | | |
| The EHR system ensures the privacy and security of patient information. | | | | | |
| Training and support for using the EHR system are adequate. | | | | | |
| The EHR system allows for efficient data entry and updating. | | | | | |
| | | | | | |

## SECTION C – QUALITY HEALTH RECORDS SYSTEM

This section comprises measures Quality Health Records Systems. “Please read each statement carefully and answer (tick) according to your knowledge.”

To what extent do you **AGREE** with the following statement

**1-Least Agree; 2- Disagree; 3-Neutral; 4- Agree; 5-Strogly Agree**

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| The health records system effectively captures and stores patient information. | | | | | |
| The system ensures the accuracy and completeness of patient records. | | | | | |
| The system allows for easy retrieval and access to patient data. | | | | | |
| The health records system supports interoperability with other healthcare systems. | | | | | |
| The system's user interface is intuitive and easy to navigate. | | | | | |
| The system enhances data security and patient privacy. | | | | | |
| The health records system supports clinical decision-making and care coordination. | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Training and support for using the health records system are adequate. | | | | | |

**SECTION C – BENEFITS OF EHR**

This section comprises measures of Benefits of EHR. "Please read each statement carefully and answer (tick) according to your knowledge."

To what extent do you **AGREE** with the following statement

**1-Least Agree; 2- Disagree; 3-Neutral; 4- Agree; 5-Strogly Agree**

| | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| Improve quality of care | | | | | |
| Enhance productivity and efficiency | | | | | |
| Improved care coordination and communication | | | | | |
| Reduction of cost and enhanced revenue | | | | | |
| Privacy of patient records. | | | | | |

**SECTION C – CHALLENGES OF EHR**

This section comprises measures of Challenges of EHR. "Please read each statement carefully and answer (tick) according to your knowledge."

To what extent do you **AGREE** with the following statement

**1-Least Agree; 2- Disagree; 3-Neutral; 4- Agree; 5-Strogly Agree**

| | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| Inadequate electric power supply | | | | | |
| Lack of ICT Infrastructure | | | | | |
| Lack of basic ICT knowledge/skills | | | | | |
| Poor Internet connectivity | | | | | |
| Financial Issues | | | | | |
| Resistance to new technologies | | | | | |