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Strategies for Maximizing the Use of Electronic Health Records Systems in Medical Clinics

Alexandra Nieves Rivera
Walden University

Walden University

College of Management and Human Potential

This is to certify that the doctoral study by

Alexandra Nieves Rivera

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Review Committee
Dr. WooYoung Chung, Committee Chairperson, Doctor of Business Administration
Faculty

Dr. Edward Paluch, Committee Member, Doctor of Business Administration Faculty

Dr. Betsy Macht, University Reviewer, Doctor of Business Administration Faculty

Chief Academic Officer and Provost
Sue Subocz, Ph.D.

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2023

Abstract

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Clinics

by

Alexandra Nieves Rivera

MA, Universidad del Turabo, 2010

BA, Universidad del Turabo, 2005

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration- Self-Design Program

Walden University

May 2023

Abstract

Ineffective leadership can negatively impact the use of electronic health records (EHR)

systems in medical clinics. Healthcare managers who fail to maximize the use of EHR

systems are missing out on the opportunity to optimize the quality of medical care that

their clinic provides. Grounded in complexity leadership theory, the purpose of this

qualitative multiple-case study was to explore strategies healthcare managers use to

maximize the use of EHRs systems**. Participants comprised six healthcare managers who

successfully implemented strategies to maximize the use of EHRs systems. Data were

collected from semistructured interviews and publicly available information. Thematic

analysis was used to analyze the data. Three themes emerged: (a) administrative

leadership strategy, (b) adaptive leadership strategy, and (c) enabling leadership strategy.

A key recommendation is for healthcare managers to administer periodic user surveys to

assess users' satisfaction with EHR systems. The implications for positive social change

include the potential to improve the quality of health care for patients by maximizing the

use of EHRs systems and realizing all the benefits these systems can provide.

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Dedication

I would like to thank and dedicate my doctoral journey to God for never leaving me, to my loving husband, Angel L. Arenas Nieves, for always believing in me, to my daughters, Astrid A. Esquilín Nieves and Adriana C. Esquilín Nieves, for inspiring me to be a role model for them, and to my family and friends, for their endless prayers. My family and friends supported me unconditionally, and I would not have come this far without them.

Acknowledgments

When I was 10 years old, my mother, Blasina Rivera Crespo, told me that I should not settle for less and that my priority should be achieving the highest level of education possible. Her words were embedded deep within my being, a driving force that pushed me to continue growing, and resonated throughout my academic journey. To my mother, to all my instructors and classmates at Walden University, I give my gratitude. My committee chair, Dr. Chung, provided me with ongoing encouragement and support, fostering my academic drive. My success in this program is from their mentorship and guidance. I would also like to acknowledge my second committee member, Dr. Paluch, and my university research reviewers, Dr. Davis and Dr. Macht, for their expeditious reviews and feedback.

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Section 1: Foundation of the Study

The foundation of the study section encompasses an outline of the business problem, purpose statement, nature of the study, research question, interview questions, conceptual framework, and the methods applied to explore the successful strategies for maximizing the use of electronic health records (EHRs) in medical clinics. I will include a literature review that aligns with the business problem. In this section, I also provide the significance of the study, which includes the contribution to business practice and implications for positive social change.

Background of the Problem

To improve the health care system, health policies such as the Health Information Technology for Economic and Clinical Health (HITECH) Act were implemented. The HITECH Act, enacted as part of the American Recovery and Reinvestment Act of 2009, is a major health policy initiative created to promote the use of electronic health information as one tool to reform the delivery of health care and improve health outcomes (Arikan, 2021). As emphasized by the national coordinator for health information technology (HIT) when HITECH was adopted, HITECH's central concept was to encourage meaningful use (MU) of EHRs to enhance health outcomes and research (Gold & McLaughlin, 2016). MU is defined as the use of digital medical and health records to improve the quality, safety, and efficiency of patient health information (Joneidy & Burke, 2019). The transition of paper charting to EHRs impacts medical clinics and their providers (Yaad et al., 2019). The use of EHRs became mandatory and the concern is to what extent the usage of EHRs is mandatory and/or discretionary by the

users. How health care managers would successfully maximize the use of EHRs by the medical providers is a topic of concern. EHRs in medical clinics may foster accurate information for medical providers when diagnosing, establishing treatment for patients, and others (Yaad et al., 2019), therefore, improving quality of care for patients (Tsai, 2019).

EHRs are a technology that facilitates the process of multiple health care facilities sharing and storing patient information. The use of EHRs requires confidentiality and security when entering, accessing, or sharing vital medical history of patients. The implementation of EHRs includes a variety of specifications such as the technology to provide an effective and safe strategies of care tailored to the unique medical needs of a patient (Yaad et al., 2019). The focus of this study was successful strategies for maximizing the use of EHRs in medical clinics.

Problem Statement

Medical clinics are struggling to adopt and use digitalized medical records in accordance with new regulations (Yaad et al., 2019, p. 66). These clinics may lack the benefits that EHRs systems can deliver (Wali et al., 2020, p. 3). For example, EHRs can improve physician–patient dynamics during a consultation, increasing physician attention from 77% to 82%, time spent on the explanation of tests and medication from 80.7% to 85.8%, time spent with the patient from 74% to 80%, and active listening from 74% to 77% (Wali et al., 2020, p. 3). The general business problem is that health care organizations that do not maximize the use of EHRs systems will fail to benefit from

their advantages. The specific business problem is that some health care managers lack strategies to maximize the use of EHRs systems.

Purpose Statement

The purpose of this qualitative multiple-case study was to explore the strategies health care managers use to maximize the use of EHRs systems. The target population for this study included six health care managers from multiple health care organizations who have at least 5 years of experience in health care management and have successfully implemented strategies to maximize the use of EHRs systems. Implications for positive social change include the potential for increasing the quality of health care for patients by providing medical staff with accurate information on patients' medical histories.

Nature of the Study

For this study, I used qualitative methodology to explore the strategies health care managers use to maximize the use of EHRs systems. Researchers use the qualitative method to generate thick descriptions of the phenomena they are studying (Yin, 2018). Through thick descriptions of the phenomenon, I reviewed in depth the meanings of the data. Therefore, the thick descriptions generated knowledge and understanding of the strategies used to maximize EHRs systems. In contrast, researchers conducting quantitative studies use statistical analyses to test hypotheses about variable characteristics or relationships (Bougie & Sekaran, 2019). In this study, the quantitative method was not appropriate because I was not testing hypotheses about variables. Conducting a mixed-method study entails the use of both quantitative and qualitative methods. A mixed-method approach was not suitable because I did not use the

quantitative method in this study. Using the qualitative method, I explored strategies used for the successful maximization of EHRs systems in medical clinics.

In qualitative studies, researchers commonly use one of the following four designs: (a) case study, (b) ethnography, (c) phenomenology, and (d) narrative. The case study is an empirical method for investigating a contemporary phenomenon in depth and within its real-world context through the study of *how*, *why*, or *what* research questions (Yin, 2018). The case study design was appropriate for this study because the purpose was to study what strategies health care managers use to maximize the use of EHRs systems. In ethnographic research, a researcher focuses on exploring the culture or customs of a group (Saunders et al., 2015). The ethnography design was not appropriate for this study because I was not studying cultural issues. The phenomenological researcher studies the personal meanings, emotions, and essence of participants' lived experiences through certain phenomenon (Saunders et al., 2015). I ruled out the phenomenological design because the focus of the study was not on evaluating personal meanings of participants' lived experiences but on strategies used to implement effective electronic medical systems. In narrative inquiry, a researcher uses participants' personal-life stories to answer the research question (Ford, 2020). I did not select the narrative design because in this study the target population did not engage in storytelling of personal experiences. After considering four qualitative research designs, I selected the multiple-case study design as the most appropriate for addressing this study's purpose and research question.

Research Question

This study's research question was the following: What strategies do health care managers use to maximize the use of EHR systems?

Interview Questions

The interview questions included the following:

1. What strategies have you used to maximize the use of EHRs systems?

2. How did you measure the effectiveness of the maximization of the use of EHRs systems?

3. What strategies have you determined to be most effective when maximizing the use of EHRs systems?

4. What strategies have been determined to be less effective when maximizing the use of EHRs systems?

5. What key barriers had to be addressed for the successful maximization of your organization's EHRs system?

6. How did you address the key barriers to maximizing the use of your organization's EHRs system?

7. How has the maximization of the use of EHRs system benefited your organization's patients?

8. Based on your organization's experience, how does the maximization of the use of the EHRs system benefit practitioners?

9. What additional information would you like to share about the strategies your organization developed and implemented for the maximization of the use of your EHRs system?

Conceptual Framework

I used the complexity leadership theory (CLT) as a conceptual framework in this study. Uhl-Bien et al. (2007) proposed the CLT leadership framework in which leadership is achieved through the interaction of three types of function: administrative, adaptive, and enabling. The administrative function entails managerial and formal activities of an organization through strict control and a significant bureaucratic hierarchy (Uhl-Bien et al., 2007). The adaptive function is informal, emergent, complex, and dynamic because it surfaces from the interactions between individuals acting in response to pressures and opportunities within their given setting (Uhl-Bien et al., 2007). The enabling function acts in between the administrative and adaptive function to create the conditions for complex interactive dynamics of adaptive leadership to emerge and to manage and integrate the administrative–adaptive interface (Uhl-Bien & Arena, 2017). Therefore, the enabling function acts as an agent to ameliorate, catalyze, coordinate, and entangle the dynamic among the bureaucratic and adaptive functions (Uhl-Bien & Arena, 2017). CLT is applicable to this study because I can apply its concepts and construct to identify the emerging themes in this study.

Operational Definitions

The following definitions assisted with understanding the meaning of the different terms applied to the study.

Electronic health records (EHRs): An electronic version of a patient's medical history, which is maintained by the provider over time, including all key administrative clinical data for each patient (HealthIT.gov, 2016).

Health information exchange (HIE): Electronically accessing and sharing patient clinical information among health care professionals who provide care for the patient (Rudin et al., 2014).

Health information technology (HIT): A useful method for information processing for data entry, storage, sharing, and retrieval that uses both computer software and hardware for the use of health care information (Wears, 2015).

Health Information Technology for Economic and Clinical Health (HITECH): The HITECH Act refers to the legislation authorizing the U.S. Department of Health and Human Services to establish programs to promote improvement in the safety, quality, and efficiency of health care delivery through the adoption of HIT such as EHRs and HIE (HealthIT.gov, 2016).

Meaningful use (MU): Providers meeting a series of criteria with the use of EHRs, such as improving the safety, efficiency, and quality of patient care; promoting coordination of care; improving population health; maintaining the security and privacy of patient information; and promoting patient engagement (Centers for Medicare and Medicaid Services, 2018).

Medication errors: Any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the health care professional, patient, or consumer (Gartmeier et al., 2017).

Patient safety: The prevention of adverse effects and errors for patients associated with health care (Parker & Adler-Milstein, 2016).

<p style="text-align:center">Assumptions, Limitations, and Delimitations</p>

A researcher is restricted critically in many ways when conducting scholarly research. The assumptions, limitations, and delimitations allow a researcher to recognize the shortcomings of the research study while adjusting it.

Assumptions

Assumptions are statements considered accurate that cannot be verified (Evisi, 2016; Wolgemuth et al., 2017). I assumed the participants selected for this study would have sufficient and accurate knowledge about how the use of the EHRs system was maximized in their clinic. This was a reasonable assumption because of the participants' eligibility criteria that included years of experience and successful maximization of EHRs systems. Another assumption was that research participants would answer all questions honestly and truthfully. This was a reasonable assumption because I guaranteed their confidentiality. Also, I did not ask any socially embarrassing questions or any questions regarding participants' trade secrets.

Limitations

I identified all limitations associated with the study. Limitations are potential weaknesses in studies beyond a researcher's control (Holloway & Galvin, 2016). A limitation of my research could be the availability of obtaining ample information on the specific operations; however, it may not be suitable to generalize about all health care centers in all locations because circumstances and needs vary across agencies. The

findings of this study may not be generalizable over a large population in the way typical

of quantitative studies. However, this study provided thick detailed descriptions of the

phenomenon under study that quantitative studies could not. Another limitation could be

participants not having full expertise in the maximization of EHRs, which could impact

the reliability and validity of the study findings. To ensure the reliability and validity, I

kept detailed documentation for this study.

Delimitations

Delimitations are characteristics defining the boundaries of a study while limiting

the scope (Yin, 2018). The research questions, objectives, theoretical perspectives

adopted, and the population chosen for a study can influence the study delimitations

(Nelms, 2015). The geographic location for this study was Massachusetts. I focused on

the strategies health care managers use to maximize the use of EHRs systems in medical

clinics. Nonetheless, the differences in state laws, customs, and professional practices

among states are not a significant issue in this study, particularly in relation to the theory

and its constructs in this study.

<div align="center">**Significance of the Study**</div>

Health care leaders adopt new forms of technology to improve the overall

effectiveness of health care and to increase productivity in the organization. This study's

findings are significant to medical clinics by providing health care managers successful

strategies used to maximize the use of EHRs systems.

EHRs improve efficiency by reducing medical errors and increasing service

quality for patients (Yaad et al., 2019). For physicians, having patients' accurate

information can improve diagnoses for treating patients and increase efficiency of processing patients' appointments and billing services. Improving diagnosis accuracy and key business process efficiencies would reduce costs and enhance an organization's performance. The findings of this study could help health care organizations improve by reducing costs and improve the quality of health care they provide.

The potential for a positive social impact resides in the efficiency and accuracy of medical care in the community. The findings from this study may contribute to increasing the use of EHRs improving patients' EHRs for positively improving patient care. This study's findings may be used to improve the accuracy and timeliness of patients' data, increasing patients' likelihood of receiving appropriate medical advice. Hence, patients can reduce medical costs and decrease work absences. The implementation of EHRs increases patients' safety as well as service quality (Hassan et al., 2018). Therefore, healthier individuals reduce the cost burden on society overall through less missed work, reduced financial strain on public benefits systems, and an overall higher quality of life.

Review of the Professional and Academic Literature

The purpose of this qualitative multiple-case study was to explore the strategies health care managers use to maximize the use of EHRs systems in medical clinics. I conducted a literature review to learn the strategies used by health care managers when maximizing the use of EHRs. In this literature review, I explored the origin and implementation of EHRs and the challenges and effects of EHRs on medical providers and patients.

Literature Search Strategy

I started this review with articles related to the conceptual framework, a background history of EHRs and their implementation, EHRs vendors, positive effects of successful EHRs implementation, negative effects of poor EHRs implementation, and strategies for successful EHRs implementation. This literature search was performed using Walden University library internet sources from EBSCO Academic Search Complete, ProQuest Central, Sage full-text collection, Thoreau multi-database, Google Scholar, and textbooks. I used the following search terms and phrases: *electronic health records, electronic medical records, EHRs implementation and benefits, complexity leadership theory, EHRs background and history, EHRs implementation strategies, barriers to EHRs adoption, safety, and security of EHRs, benefits of EHRs, information technology and innovation strategies of EHRs, meaningful use (MU) use of EHRs, technology acceptance model,* and *unified theory of acceptance and use of technology.* To ensure the references were peer reviewed, I used the Ulrich Periodicals Directory. The literature review includes 94 sources, with 85 of the 94 sources published from 2018 to 2023, representing 90% of total sources. In addition, 85 of the 94 (90%) references in the literature review are peer reviewed. I conducted a complete analysis and synthesis to ensure alignment with the business problem. This section of the literature review contains eight main topics: (a) conceptual framework, (b) background history of EHRs, (c) implementation of EHRs, (d) EHRs vendor, (e) impact of EHRs, (f) positive effects of successful EHRs implementation, (g) negative effects of poor EHRs implementation, and (h) strategies for successful EHRs implementation.

Conceptual Framework

Complexity Leadership Theory

EHRs systems are complex systems, and to evaluate and explore these systems, the theoretical foundation should be appropriate for that complexity. CLT was an appropriate conceptual framework to understand the knowledge needed to implement EHRs systems successfully, a process that involves communicating efficiently with medical providers (Snelling et al., 2020), promoting flexibility to adapt to changes and environments (Younger, 2020), and improving quality of care (Horvat & Filipovic, 2018, 2020). The literature suggests that for an implementation to be successful, health care manager leadership must be linked to the organization's needs. In other words, the leadership style needs to be in sync with the organization's needs for the goals to be achieved. Complexity leadership style is appropriate for addressing complex organizational needs. The complexity of the technology of EHRs is a potential barrier to implementation, and EHRs implementation may be a complex challenge to users (Singh et al., 2020). Health care managers must develop strategies to address barriers to implementation for EHRs to be successful in helping an organization reach its goals.

Health care organizations involve complex systems that include multidisciplinary entities experiencing ongoing changes on varying levels, including policies and EHRs (Arikan et al., 2021; Dauwed, 2019). CLT is used to describe leadership behaviors that can lead an organization through changes (Uhl-Bien et al., 2007). Thus, CLT could offer a foundation for the exploration of how health care leaders can develop strategies for the implementation of EHRs during such changes.

Some researchers have described complexity leadership as a theory that focuses on identifying and exploring the strategies that foster organizational and subunit creativity, learning, and adaptability when appropriate complex adaptive systems dynamics are enabled within the context of hierarchical coordination (Uhl-Bien et al., 2007; Uhl-Bien & Marion, 2009). CLT encompasses leadership dynamics and interactions, emergent adaptive dynamics, and creativity and adaptive knowledge that exhibits sufficient significance and impact to create change (Uhl-Bien et al., 2007; Uhl-Bien & Marion, 2009). Researchers also stressed that CLT focuses on the quality of the interaction of individuals and how innovation is born from those interactions (Bäcklander, 2019; Makinen, 2018; Uhl-Bien & Arena, 2017, 2018). CLT can be used as a lens to understand how current leadership entails complex adaptive systems concepts, including behaviors and strategies that foster creativity, learning, adaptability, and flexibility (Karia & Asaari, 2019; Uhl-Bien & Arena, 2017, 2018; Younger, 2020).

The overall goal of EHRs implementation is to improve health care services. Interaction and communication among employees could foster improved health care services (Horvat & Filipovic, 2020). Understanding the importance of interactions and supporting communication among organization members facilitates the implementation of a new strategy (Horvat & Filipovic, 2018, 2020; Snelling et al., 2020). Fostering interaction among individuals will increase creativity and new ideas (Horvat & Filipovic, 2020; Uhl-Bien & Arena, 2018). Nonetheless, if the interaction and communication are not effective, detrimental effects can happen and proper care may not be provided, leading to poor patient outcomes.

The emergence of employee leadership attributes has a positive effect on work-related attitudes, such as organizational commitment, career satisfaction, and job satisfaction (Karia & Asaari, 2019). These leadership attitudes foster a positive work environment. When health care leaders interact and share their knowledge, they enable staff to act as leaders, mentors, and coaches. This interaction can lead to social networks of employees collaborating and sharing experiences, knowledge, and skills that create an atmosphere of continuous learning.

When applying CLT to health care organizations, health care leaders could improve organizational performance (Horvat & Filipovic, 2018, 2020; Karia & Asaari, 2019). Following the complexity leadership model, health care leaders, such as nurse practitioners, could improve patient quality of care (Younger, 2020). Younger (2020) proposed the use of CLT to understand how medical providers adapt to patients' changing conditions and environments. Younger (2020) developed a complexity model for leading quality improvement based on the plan-do-study-act method for nurse practitioners to use as part of their leadership practice. Complexity leadership can be used as a lens to see the plan-do-study-act method through processes of learning and adaptability, indicative of innovation in patient care (Younger, 2020). In other words, in our complex world, innovation in patient care can be observed when health care organization leadership effectively leads employees through learning and adaptability processes. Nonetheless, there are moments when a formal and bureaucratic structure is needed in subunits and other moments that require an innovative and out-of-the-box approach (Uhl-Bien et al., 2007). For organization leadership to be effective, a leader

must be able to fluctuate between the administrative, adaptive, and enabling functions, depending on the needs at hand.

Through the lens of CLT, a researcher can explain how leaders foster learning, creativity, and adaptation within organizations (Bäcklander, 2019; Uhl-Bien & Marion, 2009). The underpinnings of CLT are emergent leadership, facilitation, adaptation, and uncertainty. Horvat and Filipovic (2018) argued that through CLT, health care managers can implement leadership behaviors that can improve team and organization performance and increase the ability to adapt and innovate, promoting quality outcomes. CLT is aligned with innovation and adaptation and includes the recognition of dynamic interactions and complex relationships (Makinen, 2018; Younger, 2020). Health care is considered a complex system that includes multidisciplinary entities experiencing ongoing changes on varying levels including policies and EHRs (Arikan et al., 2021; Dauwed, 2019). CLT describes leadership behaviors that can lead an organization through changes (Uhl-Bien et al., 2007). CLT can be used as a model to address the increasing complexity of health care (Weberg, 2012). As applied to this study, CLT could help me understand how leaders develop strategies to maximize the use of EHRs in medical clinics through exploring the dynamic interactions and complex relationships among users.

Alternative Theories

The technology acceptance model (TAM) was a conceptual framework I considered for this study. The TAM can aid researchers in gaining insights on strategies health care leaders use for the successful implementation of EHRs systems. In 1986,

Davis developed and tested a theoretical model of the effect of system characteristics on user acceptance of computer-based information systems (Ebnehoseini et al., 2020; Sangkaew et al., 2019). Davis introduced the TAM to improve the understanding of user acceptance processes to successfully design and implement information systems. TAM is an information systems theory that models how users come to accept and use technology. The key elements of TAM are behavioral intention to use and system usage (Ebnehoseini et al., 2020; Sangkaew et al., 2019). Behavioral intention is a factor that leads people to use the technology. TAM also presents two primary factors influencing an individual's intention to use new technology: perceived ease of use and perceived usefulness (Ebnehoseini et al., 2020; Sangkaew et al., 2019). TAM could be used as a lens to assess technology acceptance and usage behavior when implementing EHRs systems. Nonetheless, I did not select TAM as the conceptual framework for this study because it would not fully address the research question and would limit the strategies to the acceptance and usage of EHRs.

The unified theory of acceptance and use of technology (UTAUT) was another conceptual framework I considered for this study. UTAUT could aid health care leaders with strategies to mitigate barriers when implementing EHRs. Venkatesh et al. (2003) developed and tested a theoretical model to understand individual acceptance of new information technologies. Venkatesh et al. introduced UTAUT, the key elements of which are behavioral intention and usage behavior. Venkatesh et al. presented (a) performance expectancy, (b) effort expectancy, (c) social influence, and (d) facilitating conditions as direct determinants of usage intention and behavior. UTAUT

could be used as a lens to assess user intentions to use an information system and subsequent usage behavior of an EHRs system. However, I did not select UTAUT as the conceptual framework for this study because it would not have fully addressed the research question and would be limited to strategies of behavioral intention and usage behavior.

Background History of Electronic Health Records

To improve the health care system, health policies such as the HITECH Act have been implemented. HITECH Act, enacted as part of the American Recovery and Reinvestment Act of 2009, is a major health policy initiative created to promote the use of electronic health information as one tool to reform the delivery of health care and improve health outcomes (Everson et al., 2020; Gold & McLaughlin, 2016; Lite et al., 2020). As emphasized by the national coordinator for HIT when HITECH was adopted, HITECH's central concept was to encourage MU of EHRs to enhance health outcomes and research (Gold & McLaughlin, 2016; Lite et at., 2020). MU is defined as the use of digital medical and health records to improve the quality, safety, and efficiency of patient health information (Joneidy & Burke, 2019).

Economic incentives were promoted as a contribution to health care providers to adopt EHRs systems. The HITECH Act authorized up to $27 billion in Medicare and federal Medicaid payments over 10 years to eligible providers who adopted EHRs systems that met federal standards and MU requirements (Gold & McLaughlin, 2016). The HITECH Act also funded a regional extension center program on a short-term basis to assist high-priority providers in making the transition to EHRs (Gold & McLaughlin,

2016). Under the HITECH Act, the U.S. Department of Health and Human Services also continued to work on national efforts to develop standards and mechanisms to promote exchange and protect the security and privacy of health information (Gold & McLaughlin, 2016; Lite et al., 2020).

Most U.S. health care service organizations now use some level of EHRs, a computer-based information system to record patient details (Joneidy & Burke, 2019). The health care industry in the United States has invested heavily in promoting the MU of information systems by encouraging the uptake and use of EHRs to ensure that health-related technologies are used in a careful and meaningful way by all staff (Joneidy & Burke, 2019). To fulfill the aims of MU, understanding EHRs is vital to encourage use and adoption across all health care sectors (Joneidy & Burke, 2019; Lite et al., 2020).

Although the federal government's MU EHRs implementation program resulted in some success, many challenges resulted as well, including lack of interoperability across units, increased workload, insufficient training, and the perceived need for workarounds (Rathert et al., 2019). Mixed messages about trust in EHRs information and its interference with interpersonal relationships were also a concern (Rathert et al., 2019). Even with financial incentives, EHRs compliance faced barriers and resistance to meet MU requirements (Everson et al., 2020; Mello et al., 2018). Providers needed not only to learn and use the EHRs technology in their organization but also to continue to supplement this EHRs usage with phone calls, facsimiles, email, and regular mail to coordinate care with other providers (Rathert et al., 2019). Aside from communication,

EHRs seek efficient cost-effective care delivery while avoiding duplicity as well as fraud waste and abuse.

Implementation of Electronic Health Records

The current era of electronic health technologies and development of operational practices has influenced the adoption of EHRs (Bajwa et al., 2019; Ebnehoseini et al., 2020). Effective implementation of information technology (IT) systems requires substantial training, improvement of existing systems or installation of new systems, ongoing support, and continuous funds to address issues (Bajwa et al., 2019). The health information systems (HIS) must connect hospitals and providers in various locations so that these health care professionals and providers can provide continuous and complementary health care reliant on EHRs (Bajwa et al., 2019). Managing EHRs can enhance clinical decision making (Guo et al., 2023). Crucial technology implementation factors, such as training, acceptance to change, organizational support, computer knowledge, and software attributes of EHRs, can positively impact the implementation of EHRs (Bajwa et al., 2019; Nottingham et al., 2020). EHRs begin with preimplementation preparation, and then implementation of the technology; the process continues with postimplementation, and monitoring before, during, and after the implementation is recommended (Bajwa et al., 2019; Colicchio et al., 2018). Successful implementation of information and communication technologies is one of the most critical issues for hospitals and failure scenarios are possible if appropriate information and communication technologies are not in place (Bajwa et al., 2019).

Leadership also plays an essential part in the EHRs implementation process (Bajwa et al., 2017). Poor leadership can lead the implementation process to failure (Laukka et al., 2020). We are living in a complex environment and effective leadership is needed to lead organizations and individuals towards adaptability (Uhl-Bien & Arena, 2018, 2017). Leaders must implement a leadership style that will facilitate the adoption of information and communication technologies. Leaders can find creative ways to foster buy-in among key stakeholders, which is necessary for successful EHRs implementation. For EHRs implementation to be successful, users need to be trained and comfortable with transitions and usage.

EHRs implementation is associated with many challenges such as the integration of fully functional EHRs systems which is a barrier to optimal care at both provider and organizational levels (Helmers et al., 2019). IT staff and health care professionals utilizing EHRs need to work hand-in-hand on a continuous basis in order to ensure that the EHRs platform is comprehensive of the information that is intended to be captured. Furthermore, it is through multiple changes to the platform that the EHRs eventually becomes optimized for efficient use since at first, it tends to be not as user-friendly. EHRs optimization is a continuous effort to meet the constant technological evolution and changing demands of hospitals and their clinical staff (Bansler, 2021).

Standardization of workflows and local adaptation to the new practices, as well as creating a balance between centralized control and local autonomy, are elements for organization leaders to consider when implementing EHRs (Bansler, 2021). The standardization of workflows can be seen as a form of control and loss of autonomy by

health care providers (Bansler, 2021). Standardization of documentation can also benefit

medical research (Klappe et al., 2023; Von Martial et al., 2019). It is recommended for

health care managers to carefully assess the cost/benefits of standardization before the

implementation of EHR (Bansler, 2021).

Other challenges reported with the implementation of EHRs are insufficient

training, limited one on one support, unreliable communication with leadership and the

EHRs vendor, as well as flawed system design (Gui et al., 2020). Insufficient training

will limit users to advance in their productivity by hindering the appropriate use of EHRs

at its maximum capacity. Patient's medical information can be jeopardized when users

are not fully trained to perform daily activities within the EHRs. The EHRs system is

beneficial when its design is appropriate for capturing the information needed. If this is

not the case, there needs to be effective communication between the leadership and the

vendor to ensure proficient and expeditious changes to the system. Lack of

communication, insufficient system development environment, poor adoption of standard

terminology, poor infrastructure, resistance to a new system, and poor functionality are

barriers found when implementing EHRs (Jung et al., 2020; Williams et al., 2017; Yucel,

2018). An efficient system development environment and infrastructure will ensure the

efficiency of the EHRs (Williams et al., 2017). The efficiency of the EHRs along with its

functionality will contribute to the acceptance and usage of EHRs from medical

providers. It is understandable that medical providers will feel comfortable using a

system that is user-friendly and functional. Communication among medical providers and

collaboration can make the adoption process easier as well as sharing and utilizing the

same terminology (Von Martial et al., 2019). It is difficult to sustain a practice of EHRs

with poor infrastructure as interruption of connectivity, loss of data, and limited resources

will limit medical provider services.

The process of implementing new processes includes organizational change and

re-structuring which can be challenging (Anaya, 2019). An organization's willingness to

accept and incorporate change plays an important role in obtaining successful outcomes

(Matthews & Stanhope, 2020). The risk of failure to successfully implement an EHRs

system is present when the organization does not assess its readiness (Gesulga et al.,

2017). It is important for all organization members to understand all changes since this

will facilitate acceptance and adoption of the new processes. Transforming a strategy into

action is a complex task and the implementation of EHRs requires a set of strategies in

place, including effective communication, to ensure appropriate flow of information.

Effective communication will increase as well as the awareness and

understanding of the implementation process and/or new processes. Appropriate

information communication technology is necessary for the implementation to be

successful (Mucaraku & Ali, 2022). Communication is essential for the adoption of an

EHRs system (Hossain et al., 2019). The effectiveness of EHRs implementation is

imperative to avoid communication gaps which can lead to negative patient outcomes

(Mucaraku & Ali, 2022). Effective EHRs implementation and subsequent communication

has a positive impact on health care delivery and positive patient health care outcomes.

Due to the complexity of EHRs systems, challenges may arise during the

implementation process. The collaboration among stakeholders is key for the EHRs

implementation to be successful (Mashoka et al., 2019). Health care managers can benefit from seeing challenges as opportunities to adapt and use creativity to solve problems (Khan et al., 2018). Seeing challenges as opportunities can be part of the organization's innovation culture. An innovation culture fosters the implementation and adoption of new processes with low resistance to change (Tang et al., 2020). In a changing and complex environment such as health care, an innovation culture is appropriate.

Electronic Health Records Vendor

Cerner, an EHRs vendor, is one of the options for health care facilities for documenting care delivery. As of December 2021, Oracle acquired Cerner and has taken on the task of improving electronic documentation and health care delivery. According to the Mayo Clinic, more than three times the amount spent by providers in face-to-face interaction is spent on EHRs and associated tasks (Cerner, 2022). It is Oracle's mission (through the Cerner platform) to provide providers with the best available information so that their medical decisions result in optimal patient outcomes. The company intends to accomplish this through voice recognition software that should drastically reduce the amount of time spent at the computer.

Cerner has multiple ways of organizing tasks and orders. Lists can be created by utilizing different parameters. For example, a list can be compiled that shows only your patients assigned. You can also create a list that encompasses patients from different units which would be helpful if you are caring for patients across varying departments. The patient's chart has orders listed which inform the user of tasks which need to be completed. As they are performed or completed, they drop off that list and only pending

tasks or orders are visible. Other components within Cerner are medication orders, previous medical history, lab and diagnostic results, and patient demographics (Cerner, 2022).

Electronic Health Records Implementation

The federal government is pursuing the use of EHRs in the U.S. health care system with the hope of improving the quality, safety, and efficiency of health care delivery, as well as reducing medical errors, health care costs, and paperwork impacting the health care IT (Bushelle-Edghill et al., 2017; Dauwed, 2019). The HIT can address issues of quality in the health care industry by controlling and driving components for improving the delivery of health care resulting in quality information (Arikan, 2021; Bushelle-Edghill et al., 2017; Dauwed, 2019). EHRs can be considered a strategic HIS to improve the performance of an organization. Health care delivery can be more beneficial with efficient and effective IT allowing all providers to focus on a patient's treatment (Bushelle-Edghill et al., 2017; Dauwed, 2019; Lezard & Deave, 2021).

Effective development and implementation of IT systems for health records is not only based on cost savings but also on improved health care (Arikan, 2021; Bushelle-Edghill et al., 2017). Along with the EHRs adoption, IT staffing needs will grow as well to ensure patients' privacy and protecting personal data using wireless and mobile networks impacting staffing growth (Arikan, 2021). Although, some providers argued that the only incentive in participating in the MU program is the immediate financial reward rather than the long-term gains because it means more work and less efficiency (Lite et al., 2020). The incentives for building a MU EHRs system will turn into penalties

for the providers not complying with the federal program (Lite et at., 2020). Studies

revealed that the users' perceptions of benefit and improvement, before and after the

implementation of EHRs, need to be addressed as this will impact the use of the EHR

(Joukes et al., 2019; McCrorie et al., 2019; Shiells et al., 2020; Yucel, 2018).

Health care executives need to have a comprehensive understanding of the

strategies in developing IT systems for processing EHRs and awareness of the physicians

experience of the EHRs such as complex designed screens, lack of standards for data

exchange, and unexpected system crashes while in use, contributing to the complex and

unpredictable clinical practice environment which can turn in a slow and problematic

implementation (Joukes et al., 2019; McCrorie et al., 2019; Shiells et al., 2020; Yucel,

2018.) However, a successful EHRs implementation can provide improved service

delivery and positively influence organizational performance (Joukes et al., 2019;

McCrorie et al., 2019; Shiells et al., 2020; Yucel, 2018). Lastly, organization's

stakeholders need to comprehend that the adoption of the EHRs is a requirement and

cooperation toward its use is beneficial.

Positive Effects of Successful Implementation

The implementation of EHRs includes systems integration, time constraints,

cooperation in training, interoperability, and technical team support resulting in sharing

clinical information between providers using an electronic HIE which improves care

coordination (Shiells et al., 2020; Yucel, 2018). Therefore, the management applications

for service delivery and quality of IT of EHRs can improve the organizational

performance. The use of EHRs at full capacity will collect data that can promote clinical

and research advantages (Guo et al., 2023; Marshall & Lam, 2020; Hsiang et al, 2019; Leibel & Weber, 2019; Sarwar et al., 2023). Technology evolution allows for EHR to provide real-time information among providers improving medical care and treatment for patients (Barry et al., 2020; Brundin-Mather et al., 2018; Manias et al., 2020; Pryor et al., 2020; Reis et al., 2017; Saad et al., 2018). EHRs can be used as a surveillance methodology which is an innovative tool for population health surveillance (Bhakta et al., 2019; Dornan et al., 2019). Utilizing electronic platforms enables quick and easy gathering of statistical data which can guide changes to improve provision of care; one that is patient-centered and meaningful to them.

Some studies revealed that as staff becomes more familiar with the system, work and information flow improves, multitasking decreases, and patient safety improves (Baumann et al., 2018). The participation of end-users fosters commitment and enables problems to be solved quickly. EHRs have improved accessibility of data by collecting all the patient information in one place avoiding misplacement or loss of information. EHRs also benefited the distribution of medical records by allowing the medical providers to access the data faster (Sarwar et al., 2023). Facilitated cross sharing of information in real time using EHRs allows the patient and provider access to the complete medical record. EHRs foster communication between departments by having access to the patient's data and the capability of sharing information maximizing services (Sieck et al., 2019).

Patient access to EHRs in compliance with HIPAA allows new ways of communication between providers and patients (Hodgson et al., 2022). This makes it

possible for patients to ask questions in real world time to their medical providers instead of having to wait for a formal appointment. Patients can also request services like medication refills and lab orders which can be ordered promptly at the consideration of the provider.

EHRs implementation can impact the timeliness of patient care due to the extra time needed to document at the exam room (Vahdat et al., 2018). This new interaction with patients will impact patient engagement and patient satisfaction (Bushelle-Edghill et al., 2017; Sieck et al., 2019; Storm et al., 2019; Wali et al., 2020). EHRs innovative tools such as language processing, voice recognition, and sensing can provide new ways of data capture and user interaction (Rumball-Smith et al., 2020). These innovative tools can accelerate the dictation of medical providers' notes allowing them for greater amount of time allotted towards more meaningful tasks. EHRs implementation also impacts operational efficiency (Ayaad et al., 2019; Bushelle-Edghill et al., 2017; Tsai et al., 2019).

Negative Effects of Poor Implementation

The interest for new HIT was to increase the safety and quality of care. The most common type of injury to patients stems from medication errors due to incomplete information entered or unnecessary drugs prescribed. Medication errors can be prevented by adopting an effective computerized physician order entry with a clinical decision support system (Huang et al., 2019; Johnson & Brownlee, 2018). Therefore, for the implementation of EHRs to be successful and beneficial in minimizing errors, effective computerized order entries must occur (Sieck et al., 2019; Vaidotas et al., 2019). Also,

the duplication of medical orders can occur with EHRs implementation as physicians

may miss previous orders (Horng et al., 2019). Building an innovative system for

detecting medication errors would promote patient safety (Huang et al., 2019; Jedwab et

al., 2019; Ratwani, 2020; Säfholm et al., 2019; Vaidotas et al., 2019). The incorporation

of a safety assessment tool into EHRs can minimize medication errors and promote safety

(Gold et al., 2018; Ratwani, 2020). Therefore, in the event of patients treated by multiple

providers, and the patients not having comprehensive information regarding their illness

or medications previously prescribed, medications errors will be minimized by providers

having the patient's EHRs. The lack of safety assessments and clinical errors are due to

the organizational and management of the health care system (Helmers et al., 2019).

When multiple health care providers are in the mix of providing care, it is important to

know what has been done to avoid duplicity of services. Furthermore, it is just as

important to know what needs to be done or is pending so the provision of care can move

forward effectively. Nonetheless, the incorporation of an EHRs-based HIS will facilitate

the coordination of information, minimize errors, leading to superior health care quality

(Sieck et al., 2019; Vaidotas et al., 2019).

     Lack of training and technical support can lead to physicians' burnout (Gardner et

al., 2019; Tajirian et al., 2020). The significance of training and technical support is

frequently underestimated and can become a barrier to the use of EHRs (Gardner et al.,

2019; Tajirian et al., 2020). Documenting simple information might pose a challenge to

providers if the system is not user friendly or they lack the knowledge to navigate it

(Gardner et al., 2019; Murphy et al., 2019; Tajirian et al., 2020). These challenges can

prove to be added stressors to the providers which in turn lead to burnout not having enough time for documenting their patients' information into the EHRs (Gardner et al., 2019; Tajirian et al., 2020). Also, these arising obstacles would decrease provider patient interaction as well as rapport (Gardner et al., 2019).

Patient engagement can be impacted negatively when there is no balance between entering the information into the computer and communicating with the patient (Forde et al., 2023; Gardner et al., 2019). The patient is the center of the visit and the information entered from the patient should be accurate and appropriate. Physicians not only have to adapt to the use of EHRs but also to use strategies that will maintain effective communication and interaction with patients while documenting (Sieck et al., 2019). Failing to establish proper communication with the patient can impact patient satisfaction (Gardner et al., 2019). Failure to maintain patient satisfaction can negatively impact the organization as it is a key factor when measuring services provided by health care organizations.

Strategies for a Successful Implementation of EHRs Systems

An assessment is recommended prior to choosing a model of operation (Huang et al., 2019; Johnson & Brownlee, 2018). The management applications along with the clinical quality significance of the HIS benefits the investment since EHR is essential to incorporate interoperable health care systems (Huang et al., 2019; Johnson & Brownlee, 2018). Strategies reported to overcome implementation challenges include developing personalized training programs and adapting departmental sociotechnical context to make the system work better (Gui et al., 2020). Appropriate training will aid with user's usage

and adoption of EHRs systems (Hess, 2020; Arikan et al., 2021). The organization should provide proper sufficient real time support training for all users on learning how to use an EHRs system to prevent this becoming an issue for the adoption of the EHRs (Gardner et al., 2019; Tajirian et al., 2020). Whether a physician accepts or rejects the implementation of EHRs depends on the acceptance of having work activities altered (Hess, 2020; Arikan et al., 2021). Addressing the users' concerns can increase the adoption of the use of EHRs (Hess, 2020; Arikan et al., 2021). Ongoing discussion with users can aid in determining problem areas and develop strategies to aid in the adoption of new workflow procedures or to adopt the EHRs system to ensure optimal application (Hess, 2020; Arikan et al., 2021).

Communication among the organization's executives and the EHRs vendor is vital (Hettinger et al., 2021). Clear expectations of the need and usability of the EHRs among the organization's executives and the EHRs vendor including implementation is necessary (Hettinger et al.). All stakeholders who share the responsibility for an effective EHRs technology must have safety as a top priority as well (Hettinger). There is a multitude of factors that impact EHRs implementation including but not limiting to company policies, program user friendliness, and how these programs cater to the need of the company (Hettinger).

Health care organizations continue to integrate new technologies and HIS to manage challenges of change and maintain competitive advantage. Blockchain framework is a new technology that can be used to enhance data interoperability and integrity of EHRs sharing (Jabbar et al., 2020; Kim et al., 2020; Mahore et al., 2019). HIS

is developed to manage health care data by collecting, storing, and sharing electronic

medical records, administrating a hospital's operational management, and supporting

health care policy decisions utilizing blockchain technology (Bani Issa et al., 2020;

Jabbar et al., 2020; Sittig et al., 2018). Blockchain technology linked to HIS could

facilitate the confidentiality and safety of the information shared (Jabbar et al., 2020; Kim

et al., 2020). Creating a safe HIS is the responsibility of all stakeholders (Sittig et al.,

2018). Globally, organizations have made efforts to propagate the adoption of HIE

technology with the intention of improving the quality of health care. The adoption of

HIE systems in health care organizations continues to grow along with challenges and

complexity (Dauwed, 2019). HIE technologies includes regulatory, legal, and policy

frameworks for the integration process to take place. The electronic processing of

clinical, financial, and administrative transactions is critical in improving the overall

quality of care by increasing efficiency and eliminating errors (Jabbar et al., 2020; Kim et

al., 2020; Mahore et al., 2019).

EHRs have been implemented to address clinical and management processes and

to reduce the cost of health care enabling the access of clinical information at the patient

care point (Bani Issa et al., 2020; Dunn et al., 2023; Jabbar et al., 2020). EHRs will create

a reduction of patient medical errors created by missing health information and will

increase communication among providers regarding past and present medical history with

the access to progress notes, procedures data, and orders entry. In addition, EHRs

facilitate tools that aid management procedures such as scheduling and billing. The

implementation of diverse functionalities into the EHRs that improve the user experience

and make high-quality care more effortless can mitigate clinician's burn-out (Rumball-Smith et al., 2020).

The use of EHRs portals by patients can reduce in-person visits, visits to emergency departments, and patient-provider telephone conversations (Carlson & Goldstein, 2020; Dendere et al., 2019). Measuring the volume of patient visits and work productivity can aid in determining whether the implementation of the EHRs system is successful. The key to a successful implementation of EHRs also relies on how well the technology is implemented and applied in improving the clinician's performance (Rumball-Smith et al., 2020). The use of EHRs portals can also increase patient engagement (Hodgson et al., 2022). The alignment of EHRs with the patient-centered approach will improve quality of care (Stanhope & Matthews, 2019). The implementation of EHRs systems with all the necessary features for medical providers to better serve patients is relevant (Stanhope & Matthews, 2019).

Transition

The purpose of this study was to explore strategies that health care managers can use to maximize the use of EHRs systems using a case study approach to explore this phenomenon. In Section 1, I presented the foundation and background of the study including the problem statement and purpose statement, which highlighted the main tenet of the study. In Section 1, I included the nature of the study, research question, and the conceptual framework guiding the study. Additionally, in Section 1, I presented the significance of the study highlighting the implications to business practice and social change. I concluded Section 1 with a review of the academic literature analyzing and

synthesizing existing research on the implementation of EHRs as well as the challenges

and benefits of fully adopting EHRs in medical clinics. In Section 2 of this study, I

include a description of the research process including the data collection methods,

ethical considerations, and data analysis process. I also establish the reliability and

validity of this study. In Section 3, I include a summary of the research findings,

application to professional practice, and implications for social change. I also present

recommendations for action and further research, reflections, and a conclusion.

Section 2: The Project

In Section 2, I include a description of the research process highlighting the

selection of the research participants and the data collection methods. I also include an

overview of the ethical considerations in research involving human subjects and

recognizing the role of the researcher as the research instrument and the potential for

bias. I present a discussion on the data analysis process and establish the validity and

reliability of the study including the techniques to enhance trustworthiness and credibility

of the research.

Purpose Statement

The purpose of this qualitative multiple-case study was to explore the strategies

health care clinic managers use to maximize the use of EHRs systems. The target

population for this study included six health care managers with at least 5 years of

experience in multiple health care organizations who have been successful in maximizing

the use of EHRs systems. The implications for positive social change include the

potential for increasing the quality of care for patients by providing medical staff with

more accurate information on patients' medical histories.

Role of the Researcher

In qualitative research, the instrument of data collection is the researcher. A

researcher's primary role is to collect data protecting the integrity of the study

(Shufutinsky, 2020; Yin, 2018). For a researcher conducting a qualitative study,

interviews are the primary source of data collection (Shufutinsky, 2020; Yin, 2018). The

interviews are done with the intention of answering the research question and a

researcher must ask relevant questions accordingly using a variety of skills such as listening skills, objectivity, and ethical standards to convey effective in-depth conversations with the participants. Some researchers who conduct qualitative studies focus on credibility, dependability, confirmability, and transferability (Cope, 2014). Other researchers conducting qualitative studies practice the use of self to achieve credibility and trustworthiness (Shufutinsky, 2020). Shufutinsky (2020) describes that the use of self is practiced when the researcher uses a holistic self to collect, analyze, and present the data, ensuring credibility and trustworthiness.

A researcher who conducts qualitative studies must avoid personal bias, and I ensured not to have any personal relationship with the participants selected or the research topic. Ethical guidelines and standards must be followed during research as well, and I ensured I was transparent in explaining the purpose of the research and how it would be conducted. The Belmont Report is known by three key elements: beneficence, justice, and respect for persons (Lantos, 2020). I incorporated these elements in my research to ensure the rights of the participants. Transparency is also necessary in collecting and analyzing data, ensuring the data represent the beliefs, feelings, and experiences of the participants (Yin, 2018). An interview protocol is useful to collect information in qualitative case study research providing consistency and guidelines for the interview process (Yin, 2018). I followed an interview protocol to ensure reliable data.

Another tool used by qualitive researchers to enhance credibility is member checking (Cope, 2014; Yin, 2018). Member checking allows researchers to receive

feedback from participants confirming the information provided during the interview

process (Cope, 2014; Yin, 2018). Some techniques of member checking include sharing a

summary of the research or full details of the findings to each participant (Cope, 2014;

Yin, 2018). Member checking can be completed at different phases of the study, such as

during the interview, after the study, or during both times to increase the credibility of the

information received (Cope, 2014; Yin, 2018). I implemented member checking by

sharing a summary of my results with interviewees after I completed all interviews.

Participants

In qualitative research studies, the subject studied is a determinant factor for the

selection of the participants because they must be knowledgeable and experienced in the

topic to be able to answer the research question (Yin, 2018). The eligibility criteria for

the selection of the participants can impact the credibility and validity of the study (Yin,

2018). In this study, the criteria for the selection of the participants are that the

participants were health care managers with more than 5 years of experience and have

been successful in maximizing the use of EHRs systems. The participants are employed

in multiple medical facilities, resulting in a multiple-case study. To avoid potential biases

and conflicts of interest, I ensured that I possessed no type of relationship with any of the

participants.

The focus of this qualitative multiple-case study was to explore the strategies

health care managers use to successfully maximize the use of EHRs systems. Even

though the creation of EHRs and HIE are associated with improvement of health care,

barriers and resistance to adoption remain (Gesulga et al., 2017). Experienced and

knowledgeable health care managers who can share strategies not only to maximize the use of EHRs systems, but also to overcome the barriers associated with it and increase the adoption of EHRs systems will be beneficial to other health care managers. I expected that participants in this study would be experienced and knowledgeable to offer valuable information that would aid in answering the research question.

Because gaining access to the right participants impacts the credibility and validity of a study, I made sure that before contacting any of the participants, I received approval to interview participants who met the criteria of the study per Walden University's Institutional Review Board (IRB) guidelines. As soon as permission was granted, I contacted the participants. To establish initial contact with potential participants, I made a phone call to the potential participants, left a message as needed, and followed up with an email.

After contacting the participants, I sent them an informed consent form including information about their participation and the intent of the research study via email. When a researcher ensures the rights of the participants and establishes a transparent relationship with them, this positively impacts the research study (Husband, 2020). A discussion with the participants regarding what the study entails prior to the interviews aids in developing a trustworthy relationship. It is beneficial for participants to fully understand a research topic to be prepared for an interview. I made myself available to the participants to answer any questions prior to the interview as needed. I contacted the participants via email or phone call to answer any possible questions and to build a positive relationship.

Understanding that gaining participants' trust is important, I ensured communication was clear and effective and was transparent and open to listen and answer questions or concerns. Developing open and honest communication prior, during, and after the interview process is necessary. Maintaining professionalism and showing respect to participants' time and effort to collaborate in the study as well as maintaining confidentiality also aided in developing a trustworthy relationship.

Research Method and Design

This section includes details regarding selecting the qualitative research method and the multiple-case study research design. In the review of the professional and academical literature, I provided supporting literature for the qualitative research of this study topic. I selected the qualitative research method to learn what strategies health care managers use to maximize the use of EHRs systems. As previously mentioned, I received IRB approval prior to conducting this study, and the IRB approval number is 06-27-22-1022144.

Research Method

For this study, I used qualitative methodology to explore the strategies health care managers use to successfully maximize the use of EHRs systems. Researchers who conduct qualitative studies use open-ended questions to generate knowledge and create an understanding of exploring a phenomenon (Yin, 2018). With open-ended questions, I can review in depth the meanings and descriptions of data. Therefore, open-ended questions generate knowledge and understanding of the strategies used to maximize the use of EHRs systems.

In contrast, researchers conducting quantitative studies use statistical analyses to test hypotheses about variable characteristics or relationships (Bougie & Sekaran, 2019). Quantitative research is used to quantify a problem by transforming numerical data into statistical facts. (Bougie & Sekaran, 2019). In this study, I did not test hypotheses about variables. Statistical data and closed-ended questions do not provide vast information on what strategies health care managers use to successfully maximize the use of EHRs systems; therefore, the quantitative method was not the best choice for this study.

Conducting a mixed-method study entails the use of both quantitative and qualitative methods. The mixed-method approach deliberately uses the strengths of both qualitative and quantitative approaches to explore a phenomenon. A mixed-method approach requires analyzing relationships between variables. This method was not useful for this study because I was not quantifying relationships among variables.

Research Design

I considered the following qualitative designs: (a) case study, (b) ethnography, (c) phenomenology, and (d) narrative. The case study is an empirical method for investigating a contemporary phenomenon in depth and within its real-world context (Yin, 2018). A multiple-case study includes more than one case to allow for comparing findings among the cases (Saunders et al., 2015). A multiple-case study was appropriate for this study to enable me to address the research question. In ethnographic research, a researcher focuses on the culture of a group (Saunders et al., 2015). The ethnography design was not appropriate for this study because I was not studying the cultural issues related to this problem. The phenomenological researcher studies the personal meanings

of participants' lived experiences through certain phenomenon (Saunders et al., 2015). I did not select the phenomenological design because the focus of the study was not on evaluating personal meanings of participants' lived experiences, but on strategies used to maximize the use of EHRs systems. The narrative inquiry researcher uses participants' personal-life stories to answer the research question (Ford, 2020). The narrative design was not selected because in this study the target population did not engage in storytelling of personal experiences. After considering four qualitative research designs, I selected the multiple-case study design as the most appropriate for addressing this study's purpose and research question.

Yin (2018) mentioned six methods for collecting data on a multiple-case study design: direct observations, archival records, documentation, interviews, physical artifacts, and observations of participants. A researcher can use multiple sources to draw conclusions and achieve data triangulation (Shufutinsky, 2020; Stahl & King, 2020). The methods for collecting data I used were publicly available documentation from multiple clinics and conducting interviews with participants. A researcher conducting a qualitative study should seek to obtain data saturation (Vasileiou et al., 2018). Data saturation is influenced by the quality of the sample size used in qualitative studies (Vasileiou et al., 2018). Data saturation occurs when no new relevant information emerges after the last in-depth interview is conducted. I conducted a preliminary analysis of the data after completing four interviews. Then after each additional interview, I analyzed the interview data to see if new information or themes were gained from the additional interview. I

continued collecting data until the additional interview did not yield any new information to ensure data saturation.

Population and Sampling

The target population for this study was six health care managers from multiple clinics in Massachusetts. The goal of the population sample selected for this study was to fulfill the requirements of capturing information on strategies for successfully maximizing the use of EHRs systems. Quality data to support the topic of the research question will be generated by using the proper sample size in qualitative research (Vasileiou et al., 2018). The determinant factors for the selection of the participants in this study were: (a) be a health care manager, (b) more than 5 years of experience, and (c) successful in maximizing the use of EHRs systems.

The purposive sampling method is a technique researchers use to select participants who are knowledgeable and experienced about the research topic (Vasileiou et al., 2018). Purposive sampling can be useful in selecting participants who can exponentially contribute to answering the research question (Vasileiou et al., 2016). Qualitative research is conducted with a small sample size to sustain the depth and richness of the information collected (Vasileiou et al., 2018). Therefore, I used purposive sampling to select participants.

For this study, the sample size included six health care managers from multiple clinics in Massachusetts who have successfully maximized the use of EHRs systems. In multiple-case studies, each case could predict similar or contrasting results (Yin, 2018). In other words, a multiple-case study researcher can explain the differences and

similarities among cases and draw conclusions to answer the research question. The

sample size of six health care managers from multiple clinics met the needs of this study

to capture the strategies for successfully maximizing the use of EHRs systems. As part of

the sources for data collection, I used publicly available documents and information

about these clinics: information from clinics' websites, Facebook pages, marketing

materials, and other public sources.

Ethical Research

The Belmont Report established the ethical values for conducting research

including respect for persons, beneficence, and justice (U.S. Department of Health and

Human Services, 1979). I conducted the research following these principles. I ensured

respect for this study participants by providing informed consent for participation in the

study. I ensured beneficence with no risk or harm to the participants and the benefits of

participation in the study. I ensured the principle of justice by treating and being fair and

equal with the selection of participants and participation.

Informed consent is not just permission participants give to researchers to

participate in the study (Goldstein et al., 2017). Informed consent is an agreement

between a participant and researcher regarding the roles and responsibilities taken

throughout the entire research process. Before conducting interviews, I received approval

from Walden University's IRB. The Walden University's IRB approval number is 06-27-

22-1022144. In this study, each participant received a copy of the informed consent.

Participants could have withdrawn their participation at any time during the

research process without penalty. Participation in the study was completely voluntary

(Gupta, 2017). Although it was not required to provide a reason for withdrawing from the study, participants may provide their withdrawal reason to the researcher. The process of withdrawing from the study was informing the researcher you no longer want to participate in the study.

Some research studies may provide paid or other rewards for participating in their studies. No incentives were given to participants. Walden University set forth guidelines for student researchers to protect the identities of participants. I protected the participant's identity by keeping interview records, data, and names in a fireproof and locked cabinet. The data will be secured for a minimum of 5 years. I used pseudonyms to protect the names of participants and their employers. Protecting the privacy of research participants is crucial for ensuring compliance with ethical standards of research (Gupta, 2017).

Data Collection Instruments

The primary data collection instrument in qualitative studies is the researcher (Costa et al., 2017). Interviews help researchers discover the *how* and *why* of critical events (Yin, 2018). The role of the researcher is an essential part of the study (Saunders et al., 2015). For this study, I conducted interviews through Zoom video conferencing and reviewed publicly available information about the participants' medical clinics. Interview protocol is in Appendix A.

The focus of this study was to explore the strategies used by health care managers to maximize the use of EHRs systems. The use of interviews provided in-depth information from each participant regarding their experiences of maximizing the use of

EHRs systems, which assisted me while exploring the topic. I conducted video

conferencing calls with all participants via Zoom at a convenient date for each of the six

participants. I conducted the interviews from my private home office and used the Zoom

recording feature to record each interview. Before the start of each interview, I reminded

each participant of the purpose of the study and their ability to withdraw from the

interview at any time. I also reviewed the assigned consent form and asked for verbal

consent before each interview. I made sure all participants were comfortable and ready to

start the interview.

To enhance the reliability and validity of the data collection instrument, I

conducted member checking (Cope, 2014; Yin, 2018). Member checking is the process

the researcher uses to help improve the validity, transferability, creditability, and validity

of a particular study (Cope, 2014; Yin, 2018). Some techniques of member checking

include sharing a summary of the research or full details of the findings to each

participant. Member checking can be completed at different phases of the study, such as

during the interview, after the study, or during both times to increase the credibility of the

information received (Cope, 2014; Yin, 2018). For this study, I used member checking by

sharing a summary of my results with interviewees after I have completed all interviews.

Data Collection Technique

The data collection technique for this study was 45-90-minute video conferencing

interviews with each participant. During the interviews, I wrote notes and observed the

nonverbal cues of each participant. The interview questions were included in the

interview protocol located in Appendix A. I asked each participant follow-up questions to

get more in-depth data. At the end of each interview, I thanked each participant for their

participation in the study. I followed up with summaries that were sent to each participant

to ensure validity and creditability. I asked each participant to provide any corrections or

feedback within 5 business days of receipt.

The advantages of qualitative interviews are the depth and detail; the researcher

can get a deeper look into feelings and behaviors (Ballena, 2021). Additionally,

interviews may encourage the participants to expand on their responses. The

disadvantages of interviews are fewer people are usually studied. The study is dependent

on the researcher's skills, and it can be difficult for the researcher to make systematic

comparisons. Member checking is the process of participants reviewing data or results to

check for accuracy (Yin, 2018). Member checking was used to review and summarize my

findings after all interviews. To validate my interpretation of each interview, I employed

member checking by sharing interview summaries with all participants.

Data Organization Technique

Data management for research is a structure used by researchers to categorize,

systemize, and file researcher materials to make the study manageable (Hardy et al.,

2016). To keep track of the research data, I audio-recorded the interviews using cloud

recording on Zoom. Zoom enables users to record meetings, videos, and text. Once a

recording is complete, I downloaded the recorded interviews from Zoom and uploaded

them to NVIVO for transcript and then started the data analysis using NVIVO.

Data organizational techniques provide researchers with tools to save time,

manage data, and increase validity and credibility (Hardy et al., 2016). NVIVO is a

software used by researchers conducting qualitative studies to transcribe and code their data (Alam, 2020). As a researcher, I color-coded the data and reviewed emerging themes. I stored all raw data collected throughout the research process in a fireproof and locked cabinet. Raw data will be destroyed after 5 years.

Data Analysis

Yin (2018) described the following five analytic techniques: pattern matching, explanation building, time series analysis, logic models, and cross-case synthesis. The first analysis is the pattern matching logic that the researcher can use to compares an empirically based pattern (one based on the findings from my case study) with a predicted one (or with several alternative predictions, including rivals) made before data is collected. The second analysis is the explanation building in which the researcher analyzes the data by building an explanation about the case by stipulating a presumed set of causal sequences about the phenomenon (Yin, 2018). The third analysis is the time-series in which the researcher's objective is to examine some relevant *how* and *why* questions about the relationship of events over time (Yin, 2018). The fourth analysis is logic models which stipulate and operationalize a complex chain of occurrences or events over an extended period (Yin, 2018). The fifth analysis is the cross-case synthesis which only applies to the analysis of multiple-case studies (Yin, 2018).

I used pattern matching analysis to correlate the key themes with the literature. Each pattern consists of the background of frequent problem and the key to find a solution in the research activity (Yin, 2018; Pearse, 2019). To ensured I was able to correlate the key themes with the literature, I aligned the data analysis with the

conceptual framework of CLT. To focus on the key themes and align the key themes with the literature, I used the conceptual framework to derive themes from the coding process. After coding was converted into themes, I interpreted the meanings of the themes and then provided a conclusion.

Reliability and Validity

The goal of reliability and validity is to minimize the errors and biases in a particular study (Yin, 2018). Researchers must ensure the reliability and validity of the topic being studied to maintain neutrality and trustworthiness (Yin, 2018). This section of the study detailed reliability, dependability, validity, creditability, transferability, confirmability, and data saturation.

Dependability

The objective of reliability is to ensure later investigators will arrive at the same findings and conclusions (Yin, 2018). There are two forms of reliability internal and external (Yin, 2018). Researchers also use multiple data sources (e.g., interview and documents) to verify the information is correct (Shufutinsky, 2020; Stahl, & King, 2020). A researcher can use triangulation to achieve dependability. I reviewed publicly available information to achieve triangulation.

Credibility

Creditability is the first aspect of qualitative research that should be established to ensure the study is trustworthy (Cope 2014; Yin, 2018). Researchers have the task of linking the findings of the study with reality to determine the truth about the subject's findings. The two most important aspects of creditability are triangulation and member

checking. Triangulation is the process of using more than one method to collect research data on the same topic. Triangulation is a strategy in which researchers use multiple theories, types of data, and techniques to enhance the depth of its findings (Yin, 2018). Member checking is also called participant validation (Thomas, 2017). Data or results are returned to participants to check for accuracy and resonance with their experiences (Thomas, 2017). Member checking can be completed at different phases of the study, such as during the interview, after the study, or during both times to increase the credibility of the information received (Cope, 2014; Yin, 2018). For this study, I used member checking by sharing my interpretation of the interview with interviewees after I completed all interviews.

Transferability

Transferability in qualitative research refers to how data can be generalized or transferred to other contexts or settings (Connelly, 2016). Transferability is one of the primary duties of the researcher or the person doing the generalizing. To ensure transferability, the researcher can do a thorough job describing the data and the assumptions discovered during the research process (Connelly, 2016). If a person can connect personally to a study and the findings have a significant impact on individuals not involved, transferability has been met. I ensured transferability by conducting in-depth face-to-face interviews and member checking.

Confirmability

Confirmability in qualitative research is when the study results can be confirmed or corroborated by others (Connelly, 2016). There are several strategies

researchers can use to enhance the confirmability of their study. Researchers conducting qualitative studies keep detailed notes and journals to document the progression of their research (Connelly, 2016). Some researchers conduct member checking after their research with participants or similar individuals (Connelly, 2016). To ensure confirmability, I reviewed the data to ensure the results came directly from the data and not my personal views.

Data Saturation

Data saturation is an essential aspect of qualitative research (Lowe et al., 2018). Data saturation is where observing more data will not lead to additional findings related to the research topic (Lowe et al., 2018). To reach data saturation, I interviewed six health care managers and did not stop the interview process until no new information was forthcoming.

Transition and Summary

In Section 2 of the study, I covered vital points such as participants, research method, research design, population and sampling, ethical research, data collection instruments, data collection technique, data organization technique, data analysis, reliability, and validity. Throughout the study, I explored the successful strategies to maximize the use of electronic heath systems. The primary data collection methods for this qualitative multiple-case study were face-to-face interviews and publicly available information related to the topic. To arrive at common themes and patterns, I analyzed the interview transcripts.

Section 3: Application to Professional Practice and Implications for Change

Introduction

The purpose of this qualitative multiple-case study was to explore the strategies health care clinic managers use to maximize the use of EHRs systems. Effective communication among all stakeholders is key for the successful implementation of EHRs systems (Hettinger et al., 2021). Through semistructured interviews, I gained insight from six health care managers who have created successful strategies to maximize the use of EHRs systems. Deductive reasoning strategies were used to make conclusions from the data collected. Qualitative pattern matching analysis strategies were used to identify, analyze, and interpret common themes from the data. Research findings demonstrated that to successfully maximize the use of EHRs systems, health care managers use strategies that involve communication skills from the EHRs implementation phase, during implementation, and post implementation. Successful maximization of the use of EHRs systems positively impacts not only patients but practitioners as well.

The research question that guided this study was: What strategies do health care managers use to maximize the use of EHRs systems? To answer the research question, I reviewed the research to understand the strategies health care managers use from the implementation to the post implementation process of an EHRs system, what obstacles they face during the implementation process, and how they overcome obstacles to maximize the use of the EHRs system. I also reviewed the publicly available information posted on participants' employers' websites.

In this section, the findings of the research are presented. A description of each participant and their demographics will be the first subject in this section. An overview of the qualitative thematic analysis will be provided as well. The key themes will be identified and described in detail. Each theme will be supported with direct quotations from the interviews and current literature.

Presentation of the Findings

I used semistructured interviews to collect data to answer my research question regarding strategies health care managers use to maximize the use of EHRs systems. A purposive sample of six health care managers was used to achieve the study purpose. I selected six health care managers from five different medical clinics: community hospital, community clinic, medical center, pediatric clinic, and adult clinic. The purpose of selecting different medical clinics was to determine if strategies to maximize the use of EHRs systems differed among clinics. To protect the identity of each participant, I used pseudonyms (P1, P2, P3, P4, P5, and P6). All the participants were female. All participants were college graduates; two held medical doctorates, three held master's degrees, and one had a bachelor's degree.

All participants had been involved in the health care management field for more than 5 years and had experience with multiple EHRs systems. All participants had experience with the pre-implementation phase of the EHRs system, the implementation phase of the EHRs system, and the post-implementation phase of the EHRs system. All participants stressed the importance of collaboration and willingly shared their knowledge and experience related to EHRs systems. The participants hoped their

participation in this study would serve as a collaboration for other health care managers

using strategies to maximize the use of EHRs systems. Additional demographic

information for each health care manager can be found in Table 1.

Table 1

Participant Demographics

Participant	Gender	Education	Medical clinic
P1	F	Master's degree	Community hospital
P2	F	Medical doctorate	Medical center
P3	F	Bachelor's degree	Primary care clinic
P4	F	Master's degree	Pediatric primary care clinic
P5	F	Master's degree	Pediatric primary care clinic
P6	F	Medical doctorate	Community hospital

All the semistructured interviews were conducted via Zoom at a convenient date

for each of the six participants. I conducted the interviews from my private home office

and used the Zoom recording feature to record each interview. Before the start of each

interview, I reminded each participant of the purpose of the study and their ability to

withdraw from the interview at any time. I also reviewed the informed consent form, and

I asked for verbal consent before each interview. I made sure all participants were

comfortable and ready to start the interview.

In addition to the Zoom audio recordings, I also took observational notes and

reviewed publicly available information of participant employers. Member checking was

completed after each interview. I emailed each participant a copy of the summary of my

interpretation of their responses. Participants were asked to review the summary to ensure

I interpreted their responses correctly. In the following section, I will provide a

description and overview of each health care manager interviewed. The description and overview of each health care manager are provided to add context to the interview.

Participants

Participant 1 (P1) was a woman with a master's degree who participated in the interview from her private home office with the door closed. P1 has more than 20 years of experience in the hospital administration field. Part of her career experience entails health care management positions in five hospitals throughout the state of Massachusetts. P1 was involved multiple times in the implementation of a new EHRs system and enabled users in transition from one system to another. P1 said that the implementation of an EHRs system is stressful and challenging but worth it in the end. P1 said that while training is important before an EHRs system go live, support at the time and after it goes live are probably as or more important.

Participant 2 (P2) was a woman with a medical doctorate who participated in the interview from her private office with the door closed. P2 has more than 5 years of experience in the health care administration field. Part of her career experience entails health care management positions in a medical center in the state of Massachusetts. P2 was involved in the implementation of an EHRs system and enabled users to transition from paper charting to an EHRs system. P2 said that it is much harder to criticize something that you have helped build than someone saying, "Here, this is what you have; make it work."

Participant 3 (P3) was a woman with a master's degree who participated in the interview from her private office with the door closed. P3 has more than 5 years of

experience in the health care administration field. Part of her career experience entails health care management positions in three medical clinics in the state of Massachusetts. P3 was involved in the implementation of several EHRs systems serving as the EHRs application analyst. P3 said that to have a successful EHRs implementation, you really need a project plan, you need to do workflow analysis, and you need to engage the teams.

Participant 4 (P4) was a woman with a master's degree who participated in the interview from her private office with the door closed. P4 has more than 5 years of experience in the health care administration field. Part of her career experience entails health care management positions in a medical clinic in the state of Massachusetts. P4 was involved in the transition from paper charting to an EHRs system and the implementation of two EHRs systems. P4 said that patients having access to their records has done a great deal for them and their satisfaction with the organization.

Participant 5 (P5) was a woman with a master's degree who participated in the interview from her private office with the door closed. P5 has more than 5 years of experience in the health care administration field. Part of her career experience entails health care management positions in three medical clinics in the state of Massachusetts. P5 was involved in the transition from paper charting to an EHRs system and the implementation of two EHRs systems. P5 said she believes in sharing best practices in the community and finding out what works and what does not work.

Participant 6 (P6) was a woman with a medical doctorate who participated in the interview from her private home office with the door closed. P6 has more than 5 years of experience in the health care administration field. Part of her career experience entails

health care management positions in three medical clinics in the state of Massachusetts. P6 was involved in the transition from multiple EHRs systems to one EHRs system. P6 said that a crucial thing when implementing a new EHRs is that people genuinely feel like they have representation in those decision-making processes.

Thematic Data Analysis

The demographics and background have been established for each health care manager participant. I will now provide a detailed overview of the qualitative analysis I conducted. After the participants were interviewed via Zoom, each interview was automatically transcribed using NVivo Transcript software. All transcripts were imported into NVivo software to assist with data organization and the pattern matching process. Yin (2018) described the following five analytic techniques: pattern matching, explanation building, time series analysis, logic models, and cross-case synthesis. I used pattern matching analysis to correlate the key themes with the literature. I aligned the data analysis with the conceptual framework of CLT. I used the conceptual framework to derive themes from the coding process and to interpret the meanings of the themes.

To become familiar with the data, I first had to familiarize myself with each participant's strategies for the successful maximization of the use of the EHRs system. This was done through my research questions. I asked each participant the same questions, which aimed at detailing the methods used to successfully maximize the use of EHRs systems. I analyzed the responses from each participant and read the data multiple times.

Uhl-Bien et al. (2007) proposed a leadership framework labeled CLT in which

leadership is achieved through the interaction of three types of functions: administrative,

adaptive, and enabling. After understanding the key elements of the CLT, I was able to

fully familiarize myself with the data. In reading over the data in this study several times,

I noticed the responses from each participant aligned with the administrative leadership,

adaptive leadership, and enabling leadership. Therefore, I conducted the data analysis

using the components of the conceptual framework as the themes. Theme 1 is

administrative leadership strategy, Theme 2 is adaptive leadership strategy, and Theme 3

is enabling leadership strategy. Table 2 shows a summary of description of the emerging

themes.

Table 2

Summary of Description of the Emerging Themes

Themes	Description of themes
Administrative leadership strategy	Entails managerial and formal activities of an organization through strict control and a significant bureaucratic hierarchy (Uhl-Bien et al., 2007)
Adaptive leadership strategy	Is informal, emergent, complex, and dynamic because it surfaces from the interactions between individuals acting in response to pressures and opportunities within their given setting (Uhl-Bien et al., 2007)
Enabling leadership strategy	Acts in between the administrative and adaptive function to create the conditions for complex interactive dynamics of adaptive leadership to emerge and to manage and integrate the administrative-adaptive interface (Uhl-Bien & Arena, 2017)

Emergent Themes

Qualitative pattern matching analysis yielded three themes related to the

following research question: What strategies do health care managers use to maximize

the use of EHRs systems in medical clinics? All themes addressed the strategies health

care managers use to maximize the use of EHRs systems successfully. All themes will be

discussed in detail in the section to follow. For each theme, direct quotations will be

provided from participants.

Theme 1: Administrative Leadership Strategy

The first theme I identified was administrative leadership strategy. Based on CLT,

the administrative function entails managerial and formal activities of an organization

through strict control and a significant bureaucratic hierarchy (Uhl-Bien et al., 2007).

Therefore, administrative leadership is grounded in traditional leadership. I identified this

type of leadership when reviewing data collected from participant interviews. For

example, P1 said:

> We actually do user surveys. So, we did it 3 months after go live, and will do it,
>
> then 6 months, and then 9 months, 6 months and then 9 months. So that is a
>
> survey that goes to all of our users. And we had close to 2,000 responses in this in
>
> our 3 month one that asked a series of questions about everything from just
>
> overall are you happy with EHRs to were you provided the right training, do you
>
> find it helps you see your patients, etc. And then we could benchmark that against
>
> other Epic users, and then we will hopefully get better with the next one, and it
>
> helped us identify areas that we could work on more.

P2 stated:

> You had to rate how your areas were doing on a scale of 1 to 5 from *very stable* to
>
> *very unstable*. So that was a good way for us to, like, keep track of things till we

got to the point where all the areas were stable, and stable, meaning that we are

able to function, we are able to see our patients. We are able to get through

everything that we need to get through—not saying that there are not still issues,

but there were times when some of the areas were very unstable where patient

care was impacted. So, I think that was really helpful to be able to see that, and

they were color coded. So, you were kind of able to see by number and color how

effective we were being in our transition to go live. I think another way is that,

you know, we had any time there was an issue where something needed to be

done, you had to put in what is called a ticket. So, if there was an issue someone

could not log in, you had to put a ticket in. So, measuring the number of tickets

you were having, your areas, each day and then, you know, just even to the point

of like, you know, how many complaints a day we are getting from patients,

employees, by providers. The provider put an order in for something, we did not,

it was not routed to our work queue.

P3 stated:

There are all these measures, you know, there are quality measures, MU

measures. So, a lot of it has to do with reporting. So different things right now,

currently, we use a thing called Tableau Dashboard, which gives us the reporting

so I can see how certain measures are going for providers. And if they are meeting

those needs and if they are low, then we get into that and then we go and meet

with the provider and do one-on-one training. So, a lot of that we also do like peer

review. So, you get five charts quarterly and you look at this provider's charting

and then you can see did they hit this, this, this, this, and then you can go back

and do a little more one-on-one training.

The participants gave examples of the mandated electronic reports they used. The participants stated they use these reports as a tool to measure quality. The data analysis demonstrated the use of administrative leadership strategy to maximize the use of EHRs systems by establishing the creation of mandated electronic reports as a tool to measure productivity and quality.

Theme 2: Adaptive Leadership Strategy

The second theme I identified was adaptive leadership strategy. Considering the CLT, the adaptive function is informal, emergent, complex, and dynamic because it surfaces from the interactions between individuals acting in response to pressures and opportunities within their given setting (Uhl-Bien et al., 2007). Adaptive leadership refers to informal actions that surface from the interactions of complex adaptive systems as they strive to adjust to tension. These actions are not an act of authority. I identified this type of leadership when reviewing my participants interviews. For example, P1 stated:

But I would say if I were talking to an organization sort of starting this journey, to give yourself enough time before go live to really plan it well, to make sure you involve people in making the decisions about what the standard protocols are going to be so that people really own what is in the EHRs and it hasn't been imposed upon. And then that while training is important before go live support at and after go live is probably as or more important.

P1 also stated, "It is helpful to have very user-friendly support lines, service centers, whatever you want to call centers where people can call to ask quick questions, but also to have super users in every area." P1 highlighted, "It is not just about how to use the system, it is the workflow around that. And so have the more you can have the local team involved in developing the workflow that is going to use that system the better," P1 also highlighted, "Helping them get access to easy-to-understand high-level data is helpful." P2 stated:

> I would say that again, the communication is the most effective strategy that you
>
> can have from the top down and the bottom up. That communication is really
>
> important, but also the follow-through. If you don't have that follow-through, then
>
> the communication is going to keep coming. So, if you know, if staff has concern
>
> or something is not working and you bring it forward and they say, OK, we are
>
> going to, we are not going to address that for another month, if you do not, then
>
> go back to your staff and say, I brought it forward. It is on the agenda for them to
>
> look at in a month. The staff do not feel supported. They feel like things are being
>
> ignored. So, you really need to have that follow-through with the staff and with
>
> the administration, because if you don't let the administration know that there's
>
> still issues, they think everything is fine and dandy. So, you know, being able to
>
> have those forums where you can say, OK, we're still concerned about this. This
>
> is not working.

P3 stated:

I think many meetings with the key staff are really important to make sure we're on the same page. Training with documentation and how to document, not just like how to do it, but with screenshots. So, I am able to hand it to anybody, not even in that role, and they could follow that process, you know, strategies of adding new functionality and going through that project plan. You know, a few functionalities recently were like medication history that we're able to export those out from SureScripts, which is a vendor for all pharmacies into our electronic health record and what the process is. You can do it troubleshooting mascot, which is something for controlled substance. Whenever we go and prescribe something, the provider has to check it. So originally it was outside the system. We were able to get the functionality and trained the providers that it's able to be done from within the medication module before you even prescribe something else.

The data analysis showed the use of adaptive leadership strategy to maximize the use of EHRs systems by ensuring communication among users and training. The maximization of the use of EHRs systems facilitated communication between multiple health care clinics which enabled providers within their facilities to communicate efficiently and receive patient data in a timely manner. The maximization of the use of EHRs systems also fostered a decrease in errors.

Theme 3: Enabling Leadership Strategy

The third and last theme I identified was enabling leadership strategy. In the CLT, the enabling function acts in between the administrative and adaptive function to create

the conditions for complex interactive dynamics of adaptive leadership to emerge and to

manage and integrate the administrative-adaptive interface (Uhl-Bien & Arena, 2017).

Therefore, enabling leadership directly fosters and maneuver the conditions (context) that

catalyze adaptive leadership and allow for emergence (Uhl-Bien et al., 2007, p. 309). I

identified this type of leadership when reviewing my participants' interviews. P1 stated:

> But the other, that I talked about, the fact that the patient now has access to a
>
> really robust, patient-focused patient interface with the EHRs, and they can do so
>
> many things once a patient has had access to that kind of system to be able to sort
>
> of control their own health care better, like I can look up and say, oh, what was
>
> my blood pressure two years ago? And just, you know, I have to remember all
>
> tracks that or when, you know, what was the results of my imaging? And so, you
>
> hear you get information immediately. As soon as your test results are back, you
>
> see them, right? You don't have to wait and call a doctor. You can write notes and
>
> say, you know, can I get an appointment? You can ask questions online. You can
>
> get documents, you know, if they'd, I'm in PT right now because I hurt my knee.
>
> And so all of my, you know, what I'm supposed to do at home if I lose the piece
>
> of paper and forget, I can look at that. So, it just puts the patient so much more in
>
> the center and in control. People were worried when that first happened that
>
> providers would get inundated with silly emails from patients, and it would
>
> actually take more time. But it hasn't. It's just reduced the number of unnecessary
>
> phone calls back and forth and people leaving messages and all that.

P1 also stated:

What we did again, in part because we were doing such a broad rollout across many different organizations that really weren't working together a lot before that. So, it was important to do, but we definitely made it. We sort of were very ambitious in what we did. And then as I said, this issue about the staffing crisis was so challenging. So, what we did do that I wish we had done earlier is we pivoted to having, for example, we had a very strict policy that everyone had to get trained. There were no shortcuts to that because it had been shown that that was better than even if people had used it somewhere else. It is not the same. But we just could not do that. And so pretty late in the game, we pivoted and did allow some people to quote test out. And we also did some shortened training for like traveler nurses and things like that. So, I think if we had decided that earlier and been sort of more flexible earlier, we could have developed more approaches that would have allowed us to weather this staffing crisis that made it so hard.

P5 stated:

Not many patients are good historians, especially children, right? So, you know, you have access to the data real-time they can get it when they need to. They can reach out to a provider through Epic and send messages. So, if there's anything that needs to be escalated or discussed to possibly triage a call and be given, you know, to be accommodated sooner, they can do that a lot easier versus picking up the phone. And you try to you try to call any of these specialist offices. Many times, you could be on hold 10 to 15 minutes each call, when now that time that

wasted time of holding and even missing people's calls has dramatically cut back.
So, we are more efficient, and it is more exact.

P6 stated:

Other providers can see our notes. Nurses can see as if I do not have a chance to
talk to the nurse about what my plan is. They can see it. They can see my thought
process in the note and the documentation. You get more clear orders. You know,
the order. The electronic physician order entry allows me to make sure that I'm
ordering that when I order a dose of medication every three hours by mouth, that
that information gets transmitted and communicated more clearly to the
pharmacist and to the nurse so that if I am doing a good job entering my orders,
then that provides a more effective communication between the staff caring for
the patient, which then translates into better care of the patient. Fewer medical
errors.

P6 also stated:

One of the things you can do with a lot of the EHRs is implement best practices
and clinical decision support strategies. So, you can if somebody is doing
something that might not be best practice, you can create an alert that reminds
them, oh, hey, this isn't recommended anymore. Do you want to do this? Or, you
know you see them admitting somebody with, you know, diagnosis x? You can
prompt them to say patients with diagnosis x typically responds well to this. Is
this something you'd want to order? And so, I think that can be a benefit for both

patients and physicians as it helps to, you know, make sure that people are staying within Evidence-Based practice and can be really helpful.

P4 stated, "The most successful strategy is just simplifying the management of patient information." The data analysis proved the use of enabling leadership strategy to maximize the use of EHRs systems by utilizing flexibility and creativity even when policies and procedures are in place. For example, enhancing communication not only between the patients and providers but between multiple health care clinics. The introduction of the patient portal eradicated the wait and processes for patients and providers to contact one another.

The Relevancy of the Conceptual Framework

The relevancy of the conceptual framework is that the central constructs of the CLT are consistent with the emerging themes identified on this study. The conceptual framework is also consistent with other theories on the literature. For example, the administrative leadership construct is consistent with the transactional leadership theory, the adaptive leadership construct is consistent with the transformational leadership theory, and the enabling leadership construct is consistent with the servant leadership theory. The data collected showed that the central constructs of the CLT are present and used as a leadership strategy in these medical clinics.

The administrative leadership construct is consistent with the transactional leadership theory. Transactional leadership focus on results and measure success according to an organization's system of rewards and penalties (Creel et al., 2021). Transactional leaders motivate their followers by offering incentives upon goal

completion (Creel et al., 2021). This transaction motivates followers by increasing their self-efficacy, fostering social identification within the work community, and linking organizational values (Creel et al., 2021). Therefore, employees will feel more determined in their work. Nonetheless, an incentive should not be the sole motivator for individuals.

The adaptive leadership construct is consistent with the transformational leadership theory. The transformational leaders focus on the needs of their followers by exerting motivation, intellectual stimulation, and individualized consideration to foster all followers' abilities (Creel et al., 202; Munawar et al., 2020). Transformational leaders encourage and motivate their followers to perform tasks that create a meaningful and successful change (Munawar et al., 2020). This type of leadership relies on performance and development for the success of the organization (Northouse, 2022).

The enabling leadership construct is consistent with the servant leadership theory. The servant leadership theory focuses on how leaders treat others and the outcomes that are likely to emerge (Canavesi & Minelli, 2022). The servant leader emphasizes behaviors such as conceptualizing, emotional healing, putting followers first, helping followers grow and succeed, behaving ethically, empowering, and creating value for the community (Northouse, 2022). These behaviors emulate the characteristics of servant leadership. The servant leader chooses to serve first and then lead as a way of expanding service to others.

Applications to Professional Practice

During the data analysis phase, three themes emerged: administrative leadership strategy, adaptive leadership strategy, and enabling leadership strategy. The findings of this study are applicable to health care managers who want to maximize the use of their EHRs systems. The study aimed to explore the different strategies health care managers could use for maximizing the use of EHRs systems. Health care managers willing to practice these leadership strategies may benefit from optimizing their EHRs systems along with all the benefits entailed.

To derive all the potential benefits from using EHRs systems, health care managers should do more than the minimum that federal and state regulations require. For example, using digital medical and health records to improve the quality, safety, and efficiency of patient health information would sufficiently comply with the MU regulatory requirements (Joneidy & Burke, 2019). To go beyond this, improving the accuracy and timeliness of the patient data in the EHRs systems would further enhance the benefits of using the EHRs system (Vahdat et al., 2018). Also, creating a patient portal where patients can access their medical information can provide additional benefits (Carlson & Goldstein, 2020; Dendere et al., 2019). Indeed, the findings of this study showed that health care managers strive to do more than the regulations require to maximize the use and benefits of the EHRs systems, demonstrating their professionalism and commitment to providing high-quality health care.

The CLT is a useful framework in which health care managers conceptualize and plan their strategies to maximize the use and benefits of EHRs systems. In particular, the

findings of this study demonstrated that health care managers do not simply rely on one type of leadership strategy. Each participant described strategies that were coded into multiple strategy themes identified in this study. In fact, most participants reported strategies that were coded into all three strategy themes. These findings are consistent with the extant literature that effective leaders use various leadership strategies rather than relying on a particular one (Biggadike et al., 2022).

Implications for Social Change

The implications for positive social change include the potential for improving the quality of health care for patients by maximizing the use of the EHRs systems and realizing all the benefits that these systems can provide. EHRs improve efficiency by reducing medical errors and increasing service quality for patients (Yaad et al., 2019). EHRs systems increase the patients' safety (Hassan et al., 2018). HIPPA promotes portability so that patients can receive a multitude of services in a variety of settings and specialties effectively (Gold & McLaughlin, 2016; Lite et al., 2020). The EHRs systems facilitate that portability. EHRs systems enable patients to manage their health and interact with their medical providers. This partnership may result in an increase of communication between the patient and the practitioner. With the growth and optimization of the EHRs systems, patients will potentially receive better quality of health care.

Recommendations for Action

The purpose of this qualitative multiple-case study was to explore the strategies health care managers use to maximize the use of EHRs systems. Health care managers

use leadership strategies to maximize the use of EHRs systems. When health care managers apply administrative, adaptive, and enabling leadership as their leadership strategy into maximizing the use of the EHRs systems, this will potentially positively impact patient's health care (Horvat & Filipovic, 2020; Horvat & Filipovic, 2018). Health care managers and medical clinics that do not already have strategies targeting the maximization of the use of EHRs systems should consider the findings of this study.

I encourage health managers to pay attention to the findings of this study and focus on learning and implementing these leadership strategies to maximize the use of their EHRs systems. Understanding how health care managers can use the CTL to conceptualize and plan the strategies to maximize the use of EHRs systems could foster the types of leadership styles health care managers will be practicing in their medical clinics. This could be the first step toward considerably improving the quality of health care services that clinics provide using EHRs systems. I will disseminate my study results via conferences, training, and seminars with health care managers and leaders.

I encourage health care managers to create a training tool to incorporate the findings of this study on their medical clinics. This training tool may serve as a connection with multiple health care managers. This training tool may serve as a collaboration among health care managers to ensure the maximization of the EHRs systems. The participants of this study will be notified if my study is published.

Recommendations for Further Research

The purpose of this qualitative multiple-case study was to explore the strategies health care managers use to maximize the use of EHRs systems. The population consisted

of six health care managers from multiple clinics in Massachusetts with successful

strategies for the maximization of the use of EHRs systems. A limitation of my research

was that the data I gathered is not suitable to generalize about all health care centers in all

locations, because circumstances and needs vary between agencies. The findings of this

study may not be generalizable over a large population in the way in which those of

typical quantitative studies. Limitations are potential weaknesses in studies beyond the

researcher's control (Holloway & Galvin, 2016). However, a study could be conducted

with a larger sample size using a quantitative study approach to collect statistical data on

how EHRs systems implemented into medical clinics have improved over time. To

remain aware of the limitations of my study, I provided a thick detailed description of the

phenomenon under study that quantitative studies do not.

Recommendations for further research include exploring successful leadership

strategies for the maximization of the use of EHRs systems from the EHRs users'

perspectives. Users who are the beneficiaries of successful being led to maximize their

use of EHRs systems. Their perspectives may offer real-time information regarding the

effectiveness of the leadership strategies used by health care managers to ensure the

maximization of EHRs systems. Another recommendation for further research would be

to review the successful implementation and maximization strategies for the use of EHRs

systems by a variety of medical clinics across Massachusetts including community

clinics, hospitals, and medical centers. Their perspectives may offer other community

clinics, hospitals, and medical centers health care manager's helpful information to

enhance their current practices to successfully maximize the use of their EHRs systems.

Health care managers could also collect a larger data sample, so it will be more accurate and less biased towards having a small sample of participants.

Reflections

The Doctor of Business Administration Program at Walden University required time management skills and commitment. The main purpose of this multiple-case study was to explore the strategies health care managers use to maximize the use of EHRs systems in medical clinics. This multiple-case study involved the collection of data from six health care managers through the process of semistructured interviews and publicly available information from these clinics. Prior to completing this study, I believed health care managers in Massachusetts would be interested in participating in a study that focused on strategies to maximize the use of their EHRs systems. After the study was completed, I discovered health care managers of the clinics were interested in identifying the gaps from the implementation of EHRs systems to successfully maximize its use.

As a health care management student, one of my main concerns was potentially developing a bias based on the results of the study as my knowledge was from academia and not from a personal experience in the field. Prior to conducting the semistructured interviews, I already had a perception of what strategies could be used to maximize the use of EHRs systems in medical clinics. However, to avoid my personal biases towards the results of this multiple-case study, I continuously referred to the ethical guidelines and followed the interval protocol by asking the research questions during the semistructured interview process and follow up questions to achieve data saturation.

During the interview, each participant was granted the opportunity to reveal detailed

responses on their experiences with EHRs systems.

Furthermore, completing the doctoral study required exceptional time

management skills, sacrifice, commitment, and perseverance. Nonetheless, I feel fulfilled

that I have contributed to the field of health care and identifying gaps when implementing

EHRs systems. Interviewing multiple health care managers from different clinics across

the state of Massachusetts was rewarding considering I contributed to adding more

research on the topic of strategies to maximize the use of EHRs systems. My overall

experience broadened my horizons with knowledge about the EHRs system

implementation process from the participants. This study was beneficial and applied to

my personal strategies as a patient. EHRs systems enable patients to manage their health

and interact with providers which create opportunities for patients to actively participate

in their care, improve the communication between the patient and practitioner, and allow

the health care providers to form a partnership with their patients.

Conclusion

In this multiple-case study, I conducted research on the strategies health care

managers use to maximize the use of EHRs systems. The information and data collected

for this study was received through the process of using semistructured interviews to

gather information from health care managers about their clinics. Publicly available

information from these clinics was also used. After I completed all the interviews, I did a

data analysis that developed into three themes: (a) administrative leadership strategy,

(b) adapting leadership strategy, and (c) enabling leadership strategy. A health care

manager who uses the administrative leadership strategy will represent with act with strict control. In contrast, a health care manager who uses the adaptive leadership strategy will act informal and dynamic. Nonetheless, a health care manager who employs enabling leadership strategy will act integrating the administrative and adaptive leadership strategies. Therefore, a health care manager must master the three leadership strategies. These themes fostered understanding of what strategies health care managers can apply to maximize the use of EHRs systems. The EHR systems allows its users not only to retrieve, store, and exchange patient health information but also provides an array of useful features that can enhance the quality of care that the EHRs users provide. Healthcare managers who use administrative, adaptive, and leadership strategies may successfully maximize the use of EHRs systems in their medical clinics.

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Appendix A: Interview Protocol

Hello, {name of participant}. Thank you for agreeing to be a part of my research study. You have been selected to speak with me today because you have been identified as a health care manager in Massachusetts. This study will explore strategies health care managers use to maximize the use of electronic health systems. The questions I intend to ask you will be about the totality of your characteristics and work experiences over an extended period in the past and leading up to the present. Do you have any questions for me before we begin?

To meet our human subject requirements, you are asked to provide an informed consent form. The interview process will take 45-90 minutes and will be audio-recorded to facilitate notetaking for later transcription. For your privacy, only the researcher, mentor, committee members, and transcriptionist will be privy to the audio recordings which will be destroyed after being stored for 5 years.

Interview Questions:

1. What strategies have you used to maximize the use of EHR systems?

2. How did you measure the effectiveness of the maximization of the use of EHR systems?

3. What strategies have you determined to be most effective when maximizing the use of an EHR system?

4. What strategies have been determined to be less effective when maximizing the use of an EHR systems?

5. What key barriers had to be addressed for the successful maximization of your organization's EHR system?

6. How did you address the key barriers to maximizing the use of your organization's EHR system?

7. How has the maximization of the use of the EHR system benefited your organization's patients?

8. Based upon your organization's experience, how does the maximization of the use of the EHR system benefit practitioners?

9. What additional information would you like to share about the strategies your organization developed and implemented for the maximization of the use of your EHR system?