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Strategies to Implement an Electronic Medical Records System in Health Care Organizations

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Abstract

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MBA, National Louis University, 2015

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Doctoral Study Submitted in Partial Fulfillment

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Abstract

Despite the 2009 mandate from the U.S. Government that healthcare organizations adopt and implement electronic medical records (EMR) systems to avoid fines and take advantage of the benefits EMR systems provide, adoption of EMR systems in the United States has been low. Since 2011, medical facilities have received incentive payments if they demonstrated "meaningful use" of certified EMR systems; however, medical facilities unable to demonstrate meaningful use beginning in 2015 have faced up to 5% penalties. Grounded in the diffusion of innovation theory, the purpose of this qualitative single case study was to explore strategies that hospital project managers use to adopt and implement EMR systems successfully to receive federal incentive payments. The participants included three project managers in a hospital in Illinois with successful experience in adopting and implementing EMR systems to receive federal incentive payments. Data were collected from semistructured interviews and company documents. Thematic analysis resulted in three themes: the process of change management, initial and continuous training of staff, and staff resistance to current and new processes. A key recommendation is for leaders and adopters to establish up-front communication to outline the stages of the implementation process to the staff. The implications for positive social change include the potential to reduce patients' time in the hospital. Hospital leaders could use the federal incentive payments from the U.S. Government to improve the healthcare services delivered to members of the community.

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Dedication

For my younger self. “The only limit to the height of your achievements is the reach of your dreams and your willingness to work for them.” - Michelle Obama

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This endeavor would not have been possible without my chair, Dr. Jorge Gaytan. Through his invaluable guidance, encouragement, and expertise, I have successfully navigated my way through this journey. With the ups and downs that can occur in life, Dr. Gaytan was my true North Star. I am completing my doctorate degree due to his support. Thank you.

I would like to acknowledge my MBA Professor, Dr. Susan Neustrom, who inspired me to get my doctorate degree. She shared her journey of starting a new career later in life when her current career had become obsolete. She started with completing her associate degree and continued until she graduated with her doctorate degree. Her story resonated with a part of me that had always wanted to graduate with a doctorate degree but was unsure if I could reach that high. Through her inspiration, I am accomplishing that dream.

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Section 1: Foundation of the Study

Electronic medical records (EMR) systems have several functions, including historical reference, communication tools, indicators for future ailments, and clinical research (Zhang & Zhang, 2016). Hospital leaders integrate EMR systems into health care settings to help streamline the EMR's functions. The usage of EMR systems can increase the communication among health care professionals (Yaseen et al., 2022). The more effective the communication is among health care professionals, the more accurate the documentation prepared.

Background of the Problem

On February 17, 2009, the U.S. Congress passed the Health Information Technology for Economic and Clinical Health (HITECH) Act to promote the adoption and meaningful use of health information technology, commonly referred to as EMR (Office for Civil Rights, 2017). The use of EMR systems has the potential to improving patient care, coordinating treatment, and engaging patients in their own care (Hsiao et al., 2013). Other anticipated benefits include decreasing medication errors and improvements in quality of care (Hamann & Bezboruah, 2020).

The HITECH Act included incentives to encourage health care providers to adopt EMR systems prior to 2015 (Kempfert & Reed, 2011). In 2012, the U.S. Congress offered $44,000 per physician under Medicare with a decrease of reimbursement over time as penalty for failure to adopt EMR systems (Centers for Medicare and Medicaid Services [CMS], 2013). Health care providers implemented the HITECH Act in two stages. Stage 1 established the foundation of the integration program and the

requirements for collecting electronic data. Stage 2 consisted of continuous quality improvement and exchange of information to ensure that electronic health records (EHR) supported the priorities of the National Quality Strategy (CMS, 2018). The U.S. Congress' purpose for its 2009 mandate was to ensure that health care providers properly use EMR systems. Further research is needed to expand on the adoption and usage of EMR systems.

Problem Statement

Despite the 2009 mandate from the U.S. Government that healthcare organizations must adopt and implement EMR systems to take advantage of the benefits EMR systems provide, adoption of EMR systems in the United States has been low (U.S. Department of Health & Human Services, 2020). Starting in 2011, leaders of medical facilities could receive incentive payments up to a total of 5 years if they could demonstrate "meaningful use" of certified EMR systems, while leaders who could not demonstrate meaningful use beginning in 2015 could face up to 5% penalties (Gurtner, 2018). The general business problem is that healthcare organizations are struggling with the EMR implementation process and losing U.S. Government funding. The specific business problem is that some hospital project managers lack strategies to adopt and implement EMR systems successfully to receive federal incentive payments.

Purpose Statement

The purpose of this qualitative single case study was to explore strategies that hospital project managers use to adopt and implement EMR systems successfully to receive federal incentive payments. The target population for this study consisted of three

project managers in a single hospital in Illinois with successful experience in adopting and implementing EMR systems successfully to receive federal incentive payments. The implications for positive social change include the potential to reduce patients' time in the hospital. Hospitals could use the federal incentive payments from the U.S. Government to improve the health care services delivered to members of the community.

Nature of the Study

Three types of research methodologies are available to researchers: qualitative, quantitative, and mixed methods. Researchers use the qualitative research methodology to explore the *what, why,* and *how* during the research process (Yin, 2018). In addition, the qualitative research methodology involves using multiple techniques to collect data, such as personal interviews, observations, and review of documentation (Yin, 2018). Researchers use the qualitative method to search for addressing a research question (Smith, 2018). I used the qualitative research method because I explored strategies that hospital project managers use to adopt and implement EMR systems successfully to receive federal incentive payments. Researchers use the quantitative research method to answer questions about a phenomenon of interest by collecting and analyzing numerical data (Astroth & Chung, 2018). The quantitative method was not appropriate for my study because I was not testing hypotheses for examining the relationships or differences among variables. Researchers use the mixed methods research methodology that integrates quantitative and qualitative methods throughout all phases of a study (Jones et al., 2020). I did not use the mixed-methods research methodology because I did not test hypotheses for examining relationships or differences among variables and,

consequently, I did not need the quantitative aspect of the mixed-methods research methodology.

Researchers use case study, ethnographic, or phenomenological research designs to conduct business research (Yin, 2018). Researchers use the case study research design to conduct a more in-depth investigation of a topic to develop insights on a phenomenon (Duchatelet & Donche, 2022). In a case study, researchers explore a program, organization, process, or event by collecting data from various sources and use triangulation to explore convergence of findings among the different sources (Yin, 2018). I used the case study research design for this study because I conducted an in-depth review of a topic to offer insight on a phenomenon, which is the adoption and implementation of EMR systems. Researchers use an ethnographic research design as a means of engaging in ethical, meaningful, and culturally sensitive research with newcomer communities (Kassan et al., 2020). In addition, the researcher can immerse themselves in the cultural group for an extended period of time (Dorren & Van Dooren, 2021). I did not select the ethnographic research design because I did not study shared behavioral patterns, beliefs, and language of cultural groups, but rather I explored strategies that hospital project managers use to adopt and implement EMR systems successfully to receive federal incentive payments. Researchers use the phenomenological research design to capture as closely as possible the way in which the phenomenon is experienced within the context in which the experience takes place (Arnout et al., 2020). I did not select the phenomenological design because I did not seek to capture the meanings of participants' lived experiences with a particular phenomenon,

but rather to explore the what, how, and why of a phenomenon in its natural setting, which in this study was the successful adoption and implementation of EMR systems.

Research Question

What strategies do hospital project managers use to adopt and implement EMR systems successfully to receive federal incentive payments?

Interview Questions

1. What strategies have you used to adopt and implement EMR systems successfully?
2. What was the process to determine which EMR system to use in your organization?
3. How was the staff made aware of the change in the organization prior to the initial training of the EMR system?
4. How did you assess the effectiveness of the EMR from the users' perspective, including the clinical staff?
5. What training techniques did you use to train new clinical staff members for using the EMR system?
6. What strategies are in place to ensure the clinical staff members are using the EMR system accurately?
7. What were the key barriers to implementing the EMR system?
8. How did your organization address the key barriers to implementing the EMR system?

9. What additional information would you add regarding your experience in adopting and implementing the EMR system successfully that we have not discussed so far?

Conceptual Framework

The conceptual framework for this study was Rogers' (1962) diffusion of innovation theory, which involves the dissemination of an innovation to all employees in the entire organization. The EMR systems represent a potential innovation to hospitals in which project managers have not implemented EMR systems. Rogers (2002) defined an innovation as the adoption of a change in a process or application. The five essential components of the diffusion of innovation theory are (a) innovation, (b) adopters, (c) communication channels, (d) time, and (e) social system (Rogers, 2002).

Parthasarathy et al. (2021) used diffusion of innovation theory as the foundation to explore the effective adoption and implementation of technological systems. More recently, El-Yafouri et al. (2022) used diffusion of innovation theory to explore needs of the end-user to increase adopt of an EMR systems. Because several researchers (El-Yafouri et al., 2022; Mijin et al., 2019; Parthasarathy et al., 2021) have used diffusion of innovation theory as a foundation to explore the effective adoption and implementation of EMR systems, I selected the diffusion of innovation theory to serve as a foundation to understand strategies hospital project managers use to adopt and implement EMR systems successfully to receive federal incentive payments. The EMR systems represent a potential innovation to hospitals in which project managers have not implemented EMR systems.

Operational Definitions

Continued adoption: A stage in the adoption process during implementation. The continued adoption of the innovation will warrant benefits or costs through the planned methods (Elison et al., 2014).

Electronic medical record (EMR): An electronic version of a patient's health record that can be accessed via an electronic device, such as a laptop or phone. The EMR system provides an effective method to access patients' record easily. The usage of EMR systems is a data source for clinical care that can link data sets to determine the impact on the populations health (Barbazza et al., 2021).

Health Information Technology for Economic and Clinical Health (HITECH) Act: Congress passed this act as part of the American Recovery and Reinvestment Act of 2009. This act was to increase the use of EHRs within the health care industry within the United States. The adoption and usage of EHRs resulted in a monetary reward, while noncompliant providers faced a penalty (Gurtner, 2018).

Implementation: The process of putting a plan into effect. The implementation process for EMR systems usually take place in stages. Strategies are put into place to achieve cost and quality benefits and to achieve a reduction in Medicare expenditures (El-Yafouri et al., 2022).

Innovation: The implementation of a new improved product or process or a new method in business practices, workplace, or external relationships (Schuwer & Janssen, 2018).

Medicare and Medicaid EHR incentive program: A program designed for participants to receive financial bonuses for "meaningful use" to improve patient safety, care coordination and quality, efficiency of care, and public health reporting where participants were incentives to participate by establishing electronic workflows to improve health care quality and efficiency (Heisey-Grove et al., 2018).

Relative advantage: The degree to which individuals perceive an innovation as better than the idea it supersedes and can be measured in terms of convenience, economic terms, and social prestige (Hatch et al., 2020).

Assumptions, Limitations, and Delimitations

Assumptions

Assumptions are specific beliefs related to the study that a researcher believes to be true or valid for the purpose of the study (Ellis, 2019). The first assumption was that data collected during interviews would accurately reflect participants' experiences and that the participants would provide honest answers. To address this assumption, I purposively selected participants with knowledge and experience in the phenomenon under investigation. I also conducted member checking. The second assumption was that the use of the concept of EMR systems is universal across industries, cultures, and organizations. The third assumption was that data collected from participants could assist in answering the overarching research question. The fourth assumption was that the selection of the conceptual framework, research method, and research design were appropriate for this study.

Limitations

Limitations are those aspects of a study that a researcher cannot control (Creswell, 2009). The first limitation of this study was that only a few participants using the EMR system participated in this study. The second limitation was that the participants' willingness to implement the EMR system could have affected the results of this study. The third limitation was that conducting a study at one organization prevents me from making generalizations of the findings to the larger population.

Delimitations

Delimitations refer to the scope and boundaries of a study, as set by a researcher (Ellis, 2019). The first delimitation in this study was that I conducted in-depth, face-to-face interviews with only a few project managers of EMR systems at one organization. The second delimitation was that I interviewed only selected participants meeting the eligibility criteria. The third delimitation was that project managers of the participating hospital must have successfully implemented an EMR system. The fourth delimitation was the geographical location for this study, which took place in the State of Illinois.

Significance of the Study

Findings from this study may be of value to hospital project managers in the successful implementation of EMR systems in their organizations. Healthcare providers successfully implementing EMRs within the specific timelines qualify for federal incentives; EMR adoption rates for independent hospitals grew from 48% in 2008 to 77% by 2011 (Parthasarathy et al., 2021). Physicians and nurses have real-time patient data and easier access to information after EMR implementation (Rathert et al., 2019).

Physicians using an EMR system appear to improve accuracy of biomedical data capture and may improve patient engagement and effective medical treatment (Rathert et al., 2019). Implementing an EMR system can reduce error, improve quality of care, and improve order and receipt of lab tests as well as diagnostic images (Bisrat et al., 2021).

Contribution to Business Practice

The findings from this qualitative study focusing on hospital project managers' successful experiences may benefit healthcare leaders by giving them strategies to improve the success rates of EMR systems' adoption. Hospital project managers' peer-to-peer communication may assist other hospital project managers in understanding successful strategies used to adopt and implement EMR systems successfully to receive federal incentive payments (Parthasarathy et al., 2021). Healthcare organizations may benefit by reviewing and strengthening their internal practices. With poor internal practices, barriers can develop, including low user acceptance, poor project leadership, poor network connectivity, low staff awareness, lack of training and follow-up, and low level of commitment from the top management, which can impact implementation (Bisrat et al., 2021).

Government leaders may use the results from this study to achieve a higher EMR adoption rate. According to Kellermann and Jones (2013), the United States could save an estimated $81 billion annually by using EMR systems. Organizations may experience cost savings by decreasing patient length of stay due to easy access to patients' records in the EMR systems (Lee et al., 2013).

Healthcare organizations and eligible professionals may benefit from the findings of this study by capitalizing on part of the $30 billion in federal incentives approved in 2011 by the Medicare EHR Incentive Program of the CMS (Hsiao et al., 2013). In addition, healthcare organizations may benefit from this study by analyzing data generated from EMR systems to make more informed business decisions.

Implications for Social Change

Hospital leaders use EMR systems to share and track patients' records more effectively (Scott et al., 2019). Hospital project managers using EMR systems facilitate patients' understanding of what patients need to do within their treatment plan, which can reduce their time at the hospital (Lee et al., 2013). Less time spent in the hospital reduces expenses for patients and lost work time. Hospitals could use the federal incentive payments from the U.S. Government to improve the health care services delivered to members of the community.

Hospital project managers could take advantage of the social impact associated with the adoption and implementation of EMR systems, including obtaining clinical decision support, accuracy and legibility of medical records, patient safety and satisfaction, physician satisfaction, drug interaction warnings, critical data trend monitoring, and healthcare maintenance tasks (Cimino, 2013). Potential for improved patient care, coordination, and engagement of patients in their care are all benefits associated with patients having access to their healthcare records (Hsiao et al., 2013).

A Review of the Professional and Academic Literature

I reviewed the literature on the implementation of EMR systems published in various journals and seminal scholarly books. Google Scholar, linked to the Walden University Library's website, served as the primary source for accessing journal articles. The Walden University Library allows students access to various databases. Databases used to obtain literature for this study included ABI/INFORM Complete, Academic Search Complete, Business Source Complete, Emerald Management, ProQuest Central, and Sage Premier.

I accessed various open journals to obtain literature related to EMR systems. AOSIS OpenJournals provides open access to peer-reviewed scholarly journals from various academic disciplines. Similarly, ScienceDirect provided both tolled and open access to a full-text scientific database containing journal articles and book chapters. In some instances, I accessed government websites to obtain information about EMR systems.

The strategy for searching through existing literature entailed the use of keywords and phrases in the various databases listed above. I applied filters to database searches to narrow down the search results. These filters included specific keywords, a specified period, and specific databases. When using Google Scholar, I gave preference to articles published in or after 2018, ensuring the literature is topical and relevant. Secondly, I gave preference to articles that were available in the Walden University's Library.

The keywords and phrases I used in my search were *EMR systems, implementation EMR, hospital EMR, successful EMR, EMR streamline,* and *EMR*

benefits. Crossref and Ulrich's Periodicals Directory are tools to verify that literature is peer-reviewed. The 125 references that this study contains include 107 scholarly peer-reviewed articles, representing 86% of the total, seven government websites, representing 5%, and 11 books, representing 9%. The total number of references in this study published within the 2018 to 2022 period is 80, which is 64% of the total number. The literature review contains 53 references, with 32 references published within the 2018 to 2022 period, representing 60%, and 49 from scholarly peer-reviewed sources, representing 92%.

Literature Review Organization

The literature review section has several subsections. It begins with an introduction, which includes information about the strategy for searching the literature, the frequencies, and percentages of peer-reviewed articles as well as publication dates. In the next section, I focus on the application of the literature to the research question and include a brief description of the purpose of the study. The themes I discuss in this literature review are as follows: strategies to successfully implement EMR systems, change management, and strategies hospital project managers use to manage resistance to change. Throughout the literature review, I compared and contrasted different points of view and relationships between previous research and findings with this study.

The first theme, strategies to successfully implement EMR systems, includes a critical analysis and synthesis of the conceptual framework I selected for my study, which is Rogers' (1962) diffusion of innovation theory, using supporting and contrasting theories from relevant literature on the topic of EMR systems. Some of the supporting

and contrasting theories are Ishikawa's (1968) fishbone diagram, Kotter's (1996) eight-stage process for leading change model, resource dependence theory, and institutional theory.

The second theme, change management, starts with a brief overview of the development of EMR systems construct over time. I discuss common concerns relating to the construct as well as the various definitions, antecedents, and consequences of EMR systems. The third and final theme for discussion is strategies hospital project managers use to manage resistance to change. The theme starts with a general discussion about leadership and leadership styles related to EMR systems. Leadership styles reviewed include organizational leadership and motivational leadership.

Application to the Applied Business Problem

The purpose of this qualitative, single case study was to explore the strategies that hospital project managers use to adopt and implement EMR systems successfully to receive federal incentive payments. Developing an understanding of such strategies required a qualitative approach, more specifically an exploratory single case study. The findings from this study might provide insight into EMR systems from a group of leaders' perspectives.

The findings of this study may assist with the development of appropriate strategies for hospital project managers. Once an understanding of the underlying meaning emerges, appropriate strategies might equip leaders with the skills to improve the implementation of EMR systems. The findings from this study might improve business practice by identifying appropriate strategies, leading to increased productivity

and organizational competitiveness. The potential for social change rests in the development of strategies to improve the implementation of EMR systems and personal well-being.

Diffusion of Innovation Theory

In this section, I present a discussion of research studies in which their authors used Rogers' (1962) diffusion of innovation theory to determine strategies that healthcare leaders use to adopt EMR systems effectively, among other areas. Organizational leaders can use diffusion of innovation theory to achieve a successful implementation process (Liebe et al., 2016). The adoption of innovation decision emerges from a group within the organization that has a higher hierarchy because business leaders should consider both technical and clinical knowledge for a successful adoption (Liebe et al., 2016). Liebe et al. (2016) analyzed the interaction between the chief information officer (CIO) and the director of nursing (DON) during an adoption process, with an emphasis on the awareness of knowledge and uniformity using Rogers' (1962) diffusion of innovation theory. Liebe et al. found there was a significant disagreement on awareness-knowledge between the CIOs and DONs. The understanding of the information technology (IT) portion was more apparent to the CIOs than the DONs; however, this understanding was not as apparent to the front-line staff.

For organizational leaders wanting to implement an EMR system, leaders should understand the way they are going to integrate this new process into their community and the way their key staff members are going to work together to be successful. When reviewing EMR system acceptance, innovativeness is a key construct (Cocosila &

Archer, 2018). With a strong foundation in this implementation, organizations can then focus on the adopters and plan the implementation process.

Perception of both stakeholders and end-users are important during the initial phases of the adoption process; end-users' perception of the EMR can influence workplace culture, utilization, and success of implementation (Schwarzt et al., 2020). Another element is for healthcare leaders to identify champions. Champions can establish buy-in, reduce resistance to change, and create a culture of readiness and acceptance, which leads to greater success with an implementation (Woody, 2020). Overall, the implementation process consists of several components that need to be considered (Weagraff, 2016).

The workflow and process of healthcare workers continue to change with the integration of EHR systems. Organizations that are implementing EMR systems due to the federal mandate must bear the cost of training new nurses and health care providers (Samadbeik et al., 2020). A comprehensive project plan that consists of well-designed planning and training should be provided to staff (Weagraff, 2016). Some organizations use training-EMR systems to help assist their staff in the learning process. Identifying resources for teaching the EMR system can be beneficial to the organization to ensure stakeholders gain a full understanding of the EMR system (Samadbeik et al., 2020).

EMR systems are an innovative tool that disrupts the current work process, and adopters view this disruption either as a challenge or a complexity that is not needed (Vosko et al., 2021). The motivation of an adopter is a driving force in the implementation of EMR systems. Determining the type of adopter within the

organization can help leaders understand an effective way to approach the adoption process. The adoption of innovation depends on the type of innovation, leaders' opinions, and the type of adopter (Vosko et al., 2021). Organizations should be aware of the driving force behind the adoption of EMR systems to provide a higher probability of success in the implementation process (Vosko et al., 2021).

Schuwer and Janssen (2018) conducted a study regarding the adoption of sharing and reusing learning materials in online courses. Schuwer and Janssen found that educators would share materials, but the materials would not be accessible for all users due to the mode used. A participant in the study had stated that anyone asking for the materials could have them, but there were no additional steps taken to ensure the materials could be accessible by all. Schuwer and Janssen considered motivation of both the educators and management during this study. Lack of understanding of the policy on sharing and reusing of materials played a role, as well as the uncertainty of whether there is value in sharing the materials. Educators were divided on the issue of whether spending time to make the material more accessible was beneficial. Overall, Schuwer and Janssen used Rogers' (2003) diffusion of innovation theory to conclude that individuals can be motivated to reduce the lack of knowledge about the advantages and disadvantages of the innovation.

Convenience, economic terms, and social prestige can make up the relative advantage used to measure an innovation (Rogers, 2003). The lack of knowledge of an innovation can cause different perceptions, and over adoption to occur where the desired outcome cannot be achieved (Radnejad & Osiyevskyy, 2020). Relative advantage can be

the main predictor in determining the rate of adoption, benefits, and cost of adopting the innovation (Rogers, 2003).

The diffusion of innovation theory has been used in business-related studies. Hensmans (2021) conducted a study to rank types of innovation with the goal to give business organizations a competitive advantage. Hensmans found that business leaders use the innovation pyramid to organize their strategic innovations to align innovations to the business organization's goals. Business leaders could use the innovation pyramid to eliminate exaggerations when discussing the effect of disruptive innovations on organizational performance. Researchers have also used the diffusion of innovation theory in studies related to virtual learning. Azman et al. (2021) used diffusion of innovation theory to explore teachers' perceptions regarding virtual learning during the COVID-19 pandemic. Azman et al. conducted their study using a cross-sectional survey administered to teachers required to teach online during the COVID-19 pandemic. Azman et al. found that adopting an innovation in the teaching arena requires adopters to consider the five factors of the diffusion of innovation theory: perceived relative advantage, perceived compatibility, perceived complexity, perceived trialability, and perceived observability. Awad et al. (2022) also identified factors affecting learners' intentions to use e-learning during the COVID-19 pandemic. Awad et al. developed a research model by combining the diffusion of innovation theory, Delone and McLean's (1992) model, and COVID-19 perceived risk and self-efficacy as contextual factors. Delone and McLean used Smart PLS 2 to assess the model they proposed. Delone and Mclean found the following factors to have a direct significant effect on learners'

continued intentions to use the innovation: relative advantage, COVID-19 perceived risk, compatibility, and satisfaction.

The diffusion of innovation theory has also been used in the online shopping environment. Lee et al. (2021) used the diffusion of innovation theory to demonstrate the way an innovation, which is online shopping, can be diffused and become successful. Lee et al. conducted statistical analyses and found that compatibility, relative advantage, and observability had a positive effect on the participants' responses. Lee et al. recommended that business leaders desiring to disseminate information to the potential customers faster could buy online keyword marketing services and use the appropriate keyword string, allowing more potential customers to search for their products through keywords or related words.

Researchers have used the diffusion of innovation theory in supply chain. Hartley et al. (2022) conducted a study to examine the adoption of blockchain to take advantage of its supply chain benefits. Hartley et al. used content analysis and found that business organizations understanding blockchain's relative advantage, complexity, and compatibility and feeling the pressure to adopt blockchain supply chain applications seek more intensively information related to blockchain adoption.

Rogers' (1962) diffusion of innovation theory has also been used in studies related to financial technology. Okoli and Tewari (2021) conducted a study to investigate the adoption process of a nonlinear/inverted U-shaped Fintech in 32 countries in African in the 2002 to 2018 period. Okoli and Tewari found that the adoption of Fintech in Africa does not mirror the inverted U-shaped process if it is supported by trade openness. The

implication of the findings of this study are that the adoption of Fintech will first grow during the beginning stages after invention, achieve a threshold point, and begin to decline when new technology better than Fintech is invented. African countries' financial institutions need to become more innovative to gain a competitive advantage.

Researchers have also used the diffusion of innovations theory in the accounting curricula in college. Dow et al. (2021) used Rogers' (1962) diffusion of innovation theory's five stages to integrate data analytics into the college accounting curriculum, which are knowledge, persuasion, decision, implementation, and confirmation. Data analytics are now affecting most accounting firms, producing a significant effect on college curricula. Dow et al. recommended that faculty would integrate free tools, questions, and cases to integrate data analytics into the accounting curriculum.

Researchers have also used Rogers' (1962) diffusion of innovation theory to conduct studies related to cryptocurrency investing, recognizing that cryptocurrency is growing at an unprecedented pace and that investors continue to be skeptical about investing in cryptocurrency, Bharadwaj and Deka (2021) examined the behavioral intentions of Generation Z Indians regarding investing in cryptocurrencies. Bharadwaj and Deka analyzed the behavior of 392 study participants using the street-intercept data collection method, which was later tested with structural equation modeling. Bharadwaj and Deka found that compatibility, observability, and complexity affected perceived usefulness and ease of use, which ultimately affected behavioral intention.

Researchers have used Rogers' (1962) diffusion of innovation theory in massive open online courses (MOOCs) systems. Al-Rahmi et al. (2021) conducted a quantitative

study to examine factors that affect behavioral intentions of learners to use a MOOCs system. Al-Rahmi et al. used the technology acceptance model and the diffusion of innovation theory to propose a new technology acceptance model. Data were collected from 1,148 learners using a MOOCs system. Al-Rahmi et al. found that intricacy, relative advantages, compatibility, observability, trialability, and perceived enjoyment have an important effect on the perceived ease of use of the MOOCs system. Al-Rahmi et al. recommended a new model, consisting of a combination of technology acceptance model and the diffusion of innovation theory, which should be used for prolonged periods of time to improve learners' performance.

Rogers' (1962) diffusion of innovation theory has also been used in Facebook. Kao et al. (2021) conducted a study to generate a theoretical model of Facebook fan-page development and simulate the trend of Facebook fan-page development, with the goal of providing Facebook operators with a reference of the use of fan pages. Kao et al. found that a Facebook fan page could produce interaction and connection with fans and establish communication between customers and the business organizations, resulting in the development of an innovative marketing platform to increase sales.

Rogers' (1962) diffusion of innovation theory has been the focus of research studies in the area of Internet of Things, which has the potential to becoming a new technological platform to provide innovative applications and services addressing various levels of technology adoption. Lu (2021) conducted a study to examine six potential reasons of users' adoption of the Internet of Things platform. Lu found that participants' perceived traits of an innovation, Internet of Things, played a role in the differences in

users' intentions to use the innovation. Users reported a compatibility concern between current system and the Internet of Things.

The diffusion of digital skills in fostering the architecture, engineering, and construction industry is another area in which researchers used Rogers' (1962) diffusion of innovation theory. Karampour et al. (2021) conducted a study to determine digital skills diffusion through building information modelling adoption and to design feasible strategies for such adoption. Karampour et al. found the clients' lack of knowledge as the most critical challenge to building information modelling adoption in the architecture, engineering, and construction industry.

Other Contrasting and Supporting Theories

Identifying the root cause for the challenges that leaders face during the implementation can give meaning and creditability to the process (Rumeser & Emsley, 2016). Similar to Rogers' (1962) diffusion of innovation theory, leaders could apply Ishikawa's (1968) fishbone model to the implementation process. Rumeser and Emsley (2016) applied Ishikawa's fishbone model when reviewing two case studies to determine the challenges faced in the implementation process. Three main categories emerged, which are shifting the mental model, stakeholders directing the change, and understanding of the model.

Rumeser and Emsley (2016) found that the lack of understanding of the value and confidence in the product and of involvement from the stakeholders were the root causes for unsuccessful implementation. Rumeser and Emsley stated that the success of an implementation would come from managing the people and not the model. Comparable

to Rogers' (1962) diffusion of innovation theory, leaders could use Ishikawa's (1968) fishbone model as framework for the implementation process.

Organizations may have additional influence outside of the adopter to consider when implementing an EMR system. Hospitals have an increased pressure to introduce EMR systems even with a lack of capabilities with their current technology (Fareed, et al., 2015). Organizations can depend on the proper resources to be successful in their implementation. Pfeffer and Salancik (1978) introduced the resource dependence theory and its premise is that external resources of the organization affect the behavior of the organization. Hospitals are dependent on the shareholders to provide the necessary resources to implement the innovation. Similar to Rogers' (1962) diffusion of innovation theory, the resource dependence theory aligns with factors that assist with the implementation process.

Fareed et al. (2015) conducted a study on short-term hospitals to review the effect that organizational theory-specific predictors have on institutional pressures hospitals have to comply with the mandated transitioning to an EMR system. Fareed et al. found that there were other factors to consider in the implementation process, such as underlying causes and influence of control on the pressures. Organizations that had the resources for adopting the EMR systems during the study period may have been compliant due to their technical capabilities over other hospitals (Fareed et al., 2015). Technology is an essential resource that connects other resources, such as patients and money (Fareed et al., 2015).

Pressures from organizations can be a major challenge. Kotter's (1996) eight-stage process of creating major change is a model that organizational leaders use to manage change that can be found across the organization (Pollack & Pollack, 2015). Kotter's (1996) eight-stage process model was created by John Kotter as a framework for organizations to manage change. Comparable to Rogers' (1962) diffusion of innovation theory, organizational leaders could use Kotter's (1996) eight-stage model to guide organizations through transformations, such as the implementation process of EMR systems.

A study was conducted at an Australian organization with 10,000 employees that span across the globe. The researchers used Kotter's (1996) eight-stage process to complete this change within their organization. The researchers found that Kotter's (1996) eight-stage process was effective to make the major change in the Australian organization; however, some adopters needed adaptions to better accommodate the change (Pollack & Pollack, 2015). Kotter's eight-stage process has overlapping stages with each moving at different rates and leaders implementing an EMR system should consider these factors when implementing an EMR system.

Kotter's (1996) eight-stage process can be applied to the implementation of changes in healthcare. Collective leadership among all levels can help build a culture of learning and trust, which can lead to improvements in the organization (Lv & Zhange, 2017). Rogers' (1962) diffusion of innovation theory is similar to Kotter's (1996) eight-stage process in communicating to the staff changes that will take place with the

innovation. Building trust among the employees can provide the necessary environment for changes (Lv & Zhange, 2017).

Diffusion, dissemination, and adoption make up the implementation process. Kotter's (1996) eight-stage process starts with urgency initially and then creates a collective leadership that focuses on the engagement of the staff in the change process. Through vision and strategy, leaders motivate the staff to make the necessary changes in the implementation process (Lv & Zhange, 2017). Leaders using effective communication assist the staff in understanding the goals and direction of the collective leadership (Lv & Zhange, 2017). Kotter's (1996) eight-stage process showcases a framework that leaders can follow to have a successful implementation process.

Understanding the adopter can guide leaders in the proper method of implementing a new system. DiMaggio and Powell (1983) developed the framework for the institutional theory, which can assist leaders in the adoption process. The institutional theory (DiMaggio & Powell, 1983) consists of processes that establish a guideline for social behavior (Krell et al., 2016). Krell et al. (2016) applied the institutional theory (DiMaggio & Powell, 1983) as a framework on Australian firms to determine if institutional pressers affect the determinants. The determinants consisted of the project management approach and the project team competence.

Krell et al. (2016) reviewed three institutional pressures of institutional theory (DiMaggio & Powell, 1983): coercive, mimetic, and normative pressure. Krell at al. were able to study how the institutional pressures impact the adoption process and concluded that the level of motivation of the firm impacted the success of the project. Coercive,

mimetic, and normative pressures had a positive effect on one of the determinants. Krell et al. were able to provide leaders with insight to the adoption process by correlating successful adoptions to motives.

Organizational leaders could use institutional theory (DiMaggio & Powell, 1983) to understand the way institutions influence the use of technology. Thorseng and Grisot (2017) conducted a study to determine the relationship between technology and institutional change from the view of institutional work. Individuals and organizations focus on routine and put effort into maintaining the institution without disruption (Thorseng & Grisot, 2017). Thorseng and Grisot conducted a study on a Norway hospital to analyze the activities of a team while they changed their practices on diabetic care.

The team in the Norway hospital digitalized its software for their diabetic care. The institutional perspective consisted of a better tool for their patients that they could own and use autonomously (Thorseng & Grisot, 2017). Therefore, Thorseng and Grisot (2017) concluded that the institutional change influenced the digitalization process and affected the institution on diabetes care. Because the team desired to make a better tool for its patients, the team had the drive to make the institutional change. Individuals could use the institutional theory (DiMaggio & Powell, 1983) to comprehend that the external pressures to adopt can impact the success of the implementation. Decision makers can use institutional theory to have a clear understanding of environmental pressures, organizational and human factors when adopting EMR systems (Ahmadi et al., 2018).

Ahmadi et al. (2018) conducted a study on 137 Malaysian hospitals to determine if hospital size on inter and intra-organizational factors of EMR systems has an impact on

adoption. Malaysian hospitals have focused on adopting EMR systems to maintain international standards in healthcare services and customers' satisfaction (Ahmadi et al., 2018). Outpatient care provides a large share of hospital revenue, and the competition is high among hospitals (Ahmadi et al., 2018). The competition provided a motivator for the hospitals to be successful with their adoption (Ahmadi et al., 2018).

Strategies to Successfully Implement EMR Systems

Organizational leaders can use different strategies during an implementation of EMR systems to be successful. Project managers can use Rogers' (1962) diffusion of innovation theory as a framework for the adoption process of EMR systems. The diffusion of innovation theory (Rogers, 1962) consists of five components: innovation, adopters, communication channels, time, and social system. By reviewing these five components, project managers can prepare for the implementation process.

Organizations need to prepare for the implementation process. In implementation of EMR systems, it is estimated that most projects are typically 100% over budget and a year behind schedule (Goodison, 2019). Organizations should have a comprehensive plan to prevent unnecessary costs. Implementation can stall when decision-makers lack information on the cost and upkeep of an EMR system (Huebschmann et al., 2022). Implementation cost should be considered pre-implementation, implementation, and sustainment; the cost of staff time to deliver and implementation strategy should be considered pre and during implementation, while ongoing system cost in the sustainment phase should be considered (Huebschmann et al., 2022).

Adopters need to be aware of the innovation and its impact on their organizations. Clear measurable objectives, an outlined implementation process that is specific to the organization, clear roles, and division of labor should be established by executive leaders to build trusting relationships (Fennelly et al., 2020). Efficient communication should be established by strong leadership to conduct project management techniques while establishing the outline to the implementation, alongside training (Yaseen et al., 2022). Leadership engagement and support is key to a successful implementation project, as understanding and buy-in can be gained by maintaining open communication with organizational leadership (Yaseen et al., 2022).

Staff concerns can lead to difficulties if organizational leadership does not provide an understanding of the implementation with a focus in change of workflow (Priestman et al., 2018). Early communication with key stakeholders, support by peers, on-site technical assistance, and comprehensive staff training can improve the success of the implementation (Hamann & Bezboruah, 2020). Managers needs to be aware of the implementation process to provide support to the front-line staff. Staff resistance can increase with usability during the implementation process if the end-user does not feel engaged in the decision to implement and, as a result, could continue to worsen after the go-live phase (Priestman et al., 2018).

Institutional pressures impact the adoption process and can impact the success of the project (Krell et al., 2016). Rogers' (1962) diffusion of innovation theory outlines that the adopter needs to evaluate and determine if the new process is better than the previous practice. An adopter sees the innovation positively if the innovation is a better process

than the system that is in place (Rumeser & Emsley, 2016). Personal attitudes toward innovation, time required for the change in processes, and available support are factors that adopters consider when there is a process change (Mijin et al., 2019). Project managers need to anticipate barriers that can occur in the project and to identify the different needs adopters may require for a successful implementation (Porter et al., 2016).

End-user involvement is essential during each stage of the implementation process. Champions should be appointed to engage end-users and ensure end-users' needs are met (Fennelly et al., 2020). Leaders and champions can assist adopters and provide guidance during the process change. Champions should be well respected among their peers and have the knowledge to bridge the gap between end-users and IT staff (Fennelly et al., 2020). Champions can provide insight to the project manager on challenges the adopters are facing (Mount & Anderson, 2015). Successful practices include adopters having a positive attitude on the implementation process and recognizing the value of the EMR system (Mijin et al., 2019).

External resources of the organization affect the behavior of the organization and hospitals are dependent on the shareholders to provide the necessary resources to implement the innovation (Pfeffer & Salancik, 1978). Project managers need to determine the time and resources that will be provided to adopters to implement the EMR system. Providing several education opportunities and review sessions for the adopters to ask questions on the EMR system will allow adopters ample time to familiarize themselves with the new process (Tetef, 2017). A help desk service can provide an open

communication with the adopters, which increases adopters' experience and satisfaction with the EMR system (Fennelly et al., 2020).

Project managers should rollout the implementation of an EMR system in phases, which would allow the staff sufficient time to learn different components of the system. By pausing in-between phases of the implementation process, the adopters can relay questions and concerns that are occurring (Tetef, 2017). Short-term goals that the staff could achieve promote confidence in the new process (Lv & Zhange, 2017).

Project managers need to review the timeline for the implementation process to ensure there are systems in place to maintain the success throughout the project. Leaders need to establish accountability to ensure project ownership when challenges arise (Seijits & Gandz, 2018). Transparency in the organization promotes progress and, by recognizing individual staff, leaders are able to motivate employees to maintain the success (Mount & Anderson, 2015).

Change Management

The implementation of an EMR system involves the organization to adopt and make the necessary changes to be successful. Project managers should determine the root cause for the implementation to identify the challenges that may arise (Rumeser & Emsley, 2016). The implementation of an EMR system can have overlapping stages, each moving at different rates, which affects the adopter and the organization (Kotter, 1996). Project managers need to prepare for barriers that can hinder the success of the implementation process. In the event that project managers have a complex system to implement, projects are successful when project managers do not factor all the

components of the project initially and view it in a simpler way (Rumeser & Emsley, 2016).

Project managers should start by creating a sense of urgency. Project managers must make everyone in the organization aware of the needed change to ensure the adopters understand the need for the change; urgency can be critical in gaining cooperation for the adopters because complacency is a common factor in the resistance for change (Kotter, 2008). Setting up the project with a vision can help adopters understand the need for the change and promote a smoother implementation process (Lv & Zhange, 2017). Discussions should take place in the organization before the implementation takes place to allow leaders and adopters to provide feedback on the process, which can help project managers overcome the barriers that might emerge once the implementation process starts (Lv & Zhange, 2017).

Up-front communication with leaders and adopters provides time for them to understand, question, and support the innovation (Leggott et al., 2016). Project managers should create a coalition of key people sharing the same goal for the implementation process (Seijits & Gandz, 2018). Project managers cannot lead the change process alone; instead, they need a group to convince others that the proposed change is beneficial (Kotter, 1996). Project managers need a team that can assist with the decision-making process. The team should consist of main organizational leaders, people with different perspectives on the project, staff with established reputations, and driven leaders able to drive the process (Lv & Zhange, 2017). Individuals build a trusting relationship in an

organization if an effective coalition is in place because a trusting culture has an easier time with transitioning through change (Lv & Zhange, 2017).

Project managers need to develop a strategy to have a successful implementation. The organization needs to support the changes and help initiate actions that are necessary to move the implementation into action (Seijits & Gandz, 2018). An agreed upon vision needs to be established throughout the organization to eliminate disagreements or confusion that can create barriers to a successful implementation (Lv & Zhange, 2017). A strategy with a timeline becomes tangible, eliminating the idea that the implementation is an internalized discussion (Eriksson & Fundin, 2018). Project managers should set a strategy that aligns with the organization's culture and is feasible for the organization to achieve (Lv & Zhange, 2017).

The strategy should be presented to the leaders and adopters in a way that allows them to understand the implementation process. Communication is a process that takes time and may need to be provided in different media to be effective (Eriksson & Fundin, 2018). Project managers can underestimate the amount of communication required to develop a consistent understanding (Kotter, 1996). Project managers need to explain the reason behind the change in an honest and effective manner to get the leaders and adopters to buy into the change (Lv & Zhange, 2017). Communication needs to be consistent and frequent to ensure the message is delivered in a clear and concise manner to set expectations (Mount & Anderson, 2015).

Obstacles need to be removed to achieve change, which can entail structures or systems that do not align with the vision (Kotter, 1996). Structural, skills, systems, and

supervisors are obstacles that create barriers in the implementation process (Lv & Zhange, 2017). Project managers need to address these barriers by providing effective training and evaluating the capability of their staff (Lv & Zhange, 2017). Alternative forms of training may need to be provided for the adopters' more complex learning needs (Herbert & Connors, 2016). External support is critical for a successful EMR implementation and internal support from super-users, also known as champions, help end-users optimize their use of the EMR (Fennelly et al., 2020).

Leaders establish short-term wins to bring credibility to the implementation process (Seijits & Gandz, 2018). The short-term win can showcase the change taking place in the organization and continue momentum throughout the stages of the project (Kotter, 1996). Leaders and adopters can gain confidence during the change process by receiving recognition that they are doing well (Lv & Zhange, 2017). Being transparent on the performance outcomes can help motivate leaders and adopters and keep a focus on the overall goal (Mount & Anderson, 2015).

The change within the organization can be a long process. Project managers need to establish the implementation process as part of the organizational culture to maintain the change in the long term (Lv & Zhange, 2017). Without a strong foundation, leaders and adopters can revert to old practices, which will hinder the project from being successful (Seijits & Gandz, 2018). Leaders will need to adjust as the project continues. Transparency and shared discussions to establish real-time modifications will improve the success of the implementation process (Mount & Anderson, 2015). Senior leaders

must maintain the level of urgency and shared vision to ensure the change continues, especially with change in internal team members (Lv & Zhange, 2017).

Strategies Hospital Project Managers Use to Manage Resistance to Change

Resistance to change can occur among adopters during the implementation process. In the diffusion of innovation theory, Rogers (2003) described five factors that influence an adopter's decision to adopt or reject an innovation: relative advantage, compatibility, complexity, trialability, and observability. Project managers need to have strategies in place to manage the resistance to change that may emerge from the adopters (Rogers, 2003).

Relative advantage can be the main predictor in determining the rate of adoption, benefits, and cost to adopt the innovation (Rogers, 2003). Organizational leaders need to establish strategies to handle attitudes and behaviors and to recognize individuals leading the organization to success from the implementation process (Mijin et al., 2019). The adopter needs to perceive the innovation as better than the previous application. Adopters finding the innovation to save time and effort with immediate results can reduce resistance (Priestman et al., 2018). Adopters that see the change as unnecessary can feel disinterested in the innovation, which can impact the success of the implementation process. Communication to the adopters can provide clarity to the purpose for the change (Tetef, 2017). Project managers need to have a well-designed plan in place to keep the staff engaged in the process and foster the new culture of the organization (Lv & Zhange, 2017). Leaders could use incentives to produce a higher relative advantage of the

innovation, which can influence other adopters' behavior related to the implementation process (Hamann & Bezboruah, 2020).

Organizations that are implementing EMR systems need to ensure the process aligns with their existing values, needs, and experiences to increase the compatibility among adopters (Chan et al., 2016). Adopters undertaking the implementation process can see an increase in work due to the adjustment of the organizational change, which can result in adopters wanting to leave (Barrett, 2018). Project managers need to have support available to assist with this barrier (Chan et al., 2016).

Leaders identify nurse champions based on leadership skills and their influence on peers during the implementation process (Mount & Anderson, 2015). Champions provide a strong coaching environment for end-users and allow for communication between champion and provider (Weagraff, 2016). Champions can provide insight to the project manager on challenges the adopters are facing (Mount & Anderson, 2015).

Resistance to change can derive from the complexity of the innovation. The adopter can perceive the implementation of the EMR system to be very difficult to use and resist the implementation (Priestman et al., 2018). Project managers need to prepare the adopters with the knowledge and skill to be successful in the implementation process (Herbert & Connors, 2016). Providing effective trainings to the adopters can result in empowered staff, resulting in less resistance to change (Lv & Zhange, 2017). Providing competency reviews on an annual basis can increase the success of the implementation in the long-term (Tetef, 2017).

Project managers need to determine the resources that they will provide to adopters during the implementation process. Project managers should consider the resources required for training, program development, and technology support (Herbert & Connors, 2016). Leaders could provide outside resources to adopters to provide reassurance during the implementation process. A common resource for EMR systems is help desk operators assisting adopters during the implementation process, which improves the adopters' experience and satisfaction (Ngugi et al., 2021). Technical and peer support should be available around the clock, as external parties and professional networks are crucial in providing support (Fennelly et al., 2020).

Adopters can feel uncertainty about their job security and role within the organization when change takes place (Barrett, 2018). The implementation of the EMR systems will require the adopters to learn and adjust to the technology itself while adjusting to the organizational change (Barrett, 2018). Communication is key during the implementation process to ensure the project managers and adopters understand the required steps for the implementation. Project managers need to answer questions and concerns ahead of time to communicate the changes to the adopters (Tetef, 2017). Project managers should allow adopters to have access to the innovation prior to the adoption. Trialability allows adopters to experiment with the innovation on a limited basis and has a positive influence on the implementation process (Azman et al., 2021). Trialability of the innovation reduces uncertainty and allows adopters to assist with the customization of the implementation process (Al-Rahmi et al., 2021). Adopters should have multiple opportunities to interact with the innovation to attain a progressive competency (Herbert

& Connors, 2016). Adopters can determine the benefits of the innovation when given access prior to the implementation process (Chan et al., 2016).

Project managers need to show the benefits and results of the innovation during the implementation process to ensure observability (Priestman et al., 2018). Making adopters aware of short-term wins can bring credibility to the implementation process (Seijits & Gandz, 2018). Adopters need visibility of the innovation because the lack of visibility can result in a higher risk that the implementation process would fail (Penjor & Zander, 2016). Adopters not feeling part of the decision to implement the new system can increase resistance to the implementation (Priestman et al., 2018). Strong leadership needs to be present to influence the success of the adoption and provide effective communication (Yaseen et al., 2022).

Transition

In Section 1, the following topics were presented: background of the problem; problem statement; purpose statement; nature of the study; research question; interview questions; conceptual framework; operational definitions; and assumptions, limitations and delimitations. The significance of the study was explained with future details on the contribution to business practices and implications for social change. A review of the professional and academic literature for this study was completed.

In Section 2, the following topics will be presented: purpose statement, role of the researcher, participants, and the research method and design. The objective will be to discuss the research process, which includes population and sampling, ethical research, data collection instruments and technique, data organization techniques, data analysis,

and reliability and validity. In Section 3, the following topics will be presented: presentation and analysis of the findings, applications to professional practice, implications for social change, recommendations for action and further research, reflection, and conclusion.

Section 2: The Project

In Section 2, I present the following subsections: purpose statements, role of the researcher, participants, and the research method and design. I will also discuss the research process, which includes population and sampling, ethical research, data collection instruments and technique, data organization techniques, data analysis, and reliability and validity.

Purpose Statement

The purpose of this qualitative single case study was to explore strategies that hospital project managers use to adopt and implement EMR systems successfully to receive federal incentive payments. The target population for this study consisted of three project managers in a single hospital in Illinois with successful experience in adopting and implementing EMR systems successfully to receive federal incentive payments. The implications for positive social change include the potential to reduce patients' time in the hospital. Hospitals could use the federal incentive payments from the U.S. Government to improve the health care services delivered to members of the community.

Role of the Researcher

Researchers have a variety of roles when conducting studies, including the identification and access to study participants, development of rapport with participants, organization of the research process, execution of the research study, the collection and analysis of data, and the presentation of study results (Yates & Leggett, 2016). I was the primary research instrument in this study. I was responsible for all steps in the research process, which are the (a) definition of concepts, (b) collection of data from various

sources, (c) conduction and transcription of interviews, (d) analysis of data collected, and (e) development of emerging themes, as Sanjari et al. (2014) recommended. I interacted with hospital leaders to develop a list of prospective hospital managers meeting the established eligibility criteria for this study. I sent emails and made phone calls to invite them to participate in this study.

I work in the healthcare field, which allows a realistic perspective on how adopters handle internal changes. My personal experience implementing EMR systems gives me insight on the implementation process and complications that can occur. When developing my interview questions, I thought of previous issues that occurred and questions that my team would ask prior to the implementation process. My knowledge of the implementation process and healthcare practices assisted me in gathering a sample population willing to provide their experiences related to the successful adoption and implementation of EMR systems to receive federal incentive payments.

Researchers must adhere to ethical standards, guidelines, and codes that review boards and professional associations enforce (Rakic et al., 2017). Informed consent, withdrawal from the study, confidentiality, and anonymity are ethical considerations that researchers should consider when conducting social research (Ngozwana, 2018). Researchers should conduct their research in an ethicial manner and have a moral obligation to avoid any harm to participants during the study (Ngozwana, 2018); they should also adhere to the guidelines *The Belmont Report* protocol contains (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979).

The Belmont Report consists of three basic ethical principles: respect for persons, beneficence, and justice (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979). *Respect for persons* consists of two components, which are that the participants should be treated as autonomous agents and are entitled to protection and recognizing that some participants may have reduced autonomy (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979). For *beneficence*, the researcher should not harm the participants and should maximize the benefits to participants for their willingness to a participate in the study (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979). Lastly, *justice* refers to researchers treating participants fairly regarding the potential harm and benefits to participants (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979).

Researchers must adhere to *The Belmont Report's* ethical principles, including informed consent, risks and benefits assessment, and the selection of research subjects (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979). Researchers need to adhere to inform consent, which consists of disclosure and comprehension of information and the voluntary nature of participation (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979). Researchers must explain the informed consent principle to study participants and secure informed consent forms signed by study participants before starting the research process (Yin, 2018). It was my responsibility to

adhere to the ethical principles contained in *The Belmont Report* protocol, requirements of the Institutional Review Board (IRB), and any additional ethical requirements of the participating organization. I began data collection in this study after I received permission from the IRB. I explained the informed consent form and process to participants and securing participants signed and dated informed consent forms before conducting my research to ensure ethical practices occur in my research study. I reminded participants that participation was voluntary and that they could withdraw from the study at any stage without any negative consequences. To conclude, I ensured confidentiality of information.

Avoiding bias in the research process can be challenging due to researchers having a biased opinion on the outcome of the study (Karagiozis, 2018). Researchers recommend to other researchers not to introduce additional biases to eliminate already an already existing bias (Karagiozis, 2018). To avoid bias, the reseacher should use member checking, which allows participants the opportunity to see what the researcher understood from the participants' anwers to interview questions (Rakic et al., 2017). I used member checking to avoid biases by allowing the participants to review my interpretation of their answers to interview questions to verify the accuracy of my interpretations. By recording the assumptions and limitations of my study, I gave the reader the necessary information to assess the reliability and validity of my study.

Researchers use an interview protocol to ensure the interview process is comprehensive and consistent in the time allotted, which can increase the effectiveness of the interview (Yin, 2018). The interview protocol can include important information,

such as interview procedures, script of introduction and conclusion, text to ask participants to obtain signed informed consent forms, interview questions, and prompts (Yeung et al., 2018). To ensure I obtained quality interview data, I used an interview protocol (see Appendix A) to guide me through the interview process and ensure I gave the same information to all participants.

Participants

Researchers need to identify suitable participants before the start of the data collection process (Sanjari et al., 2014). The participant eligibility criteria must align with the research study's overarching research question (Yeung et al., 2018). Researchers can encounter several challenges when conducting research, such as identifying a suitable organization, gaining access to the organization, and obtaining consent from participants to partake in the research study (Yin, 2018). Participant eligibility criteria are the requirements participants must meet to qualify for participation in a research study (Yeung et al., 2018). If participants possess successful experience in, and knowledge of, the phenomenon being studied, participants become eligible to participate in a research study (Yates & Leggett, 2016).

I determined participant eligibility criteria based on the participants' experience using strategies that hospital project managers employ to adopt and implement EMR systems successfully to receive federal incentive payments. Participants became eligible if they possessed at least 2 years of successful experience in adopting and implementing an EMR system to receive federal incentive payments. I purposively selected project managers for this study from a hospital in Illinois. These hospital project managers

became appropriate for this study because of their successful experience in adopting and implementing EMR systems to receive federal incentive payments.

Locating a suitable organization and obtaining access to participants can be challenging when conducting research studies (Ahmadi et al., 2018). Researchers can work with organizational personal, network with healthcare providers, use several recruitment tools, and attend healthcare conferences to overcome this challenge (Yates & Leggett, 2016). Henderson (2018) discussed the relationship between participants and researchers and how assumptions can be revealed about the researcher based on the participants selected and location of the research study. Building rapport with key organizational personnel allowed me to gain access to participants because I shared with key personnel the purpose of my study and the participant eligibility criteria.

For the research study to be successful, researchers need to gain the trust and acceptance of the participants in the study (Karagiozis, 2018). Building rapport with participants can provide rich and thick data (Henderson, 2018). Researchers engaging with participants on a consistent basis is a way to secure the participants' trust and build rapport (Ngozwana, 2018). I used the strategy of engaging with participants on a consistent basis to secure trust and build rapport with the participants of my study, which led to the collection of rich and thick data.

Selecting an appropriate research design is essential to ensure the overarching research question aligns with participants (Sanjari et al., 2014). Researchers use the participant eligibility criteria to identify participants with successful experience and ample knowledge related to the phenomenon under investigation to be able to answer the

overarching research question (Yeung et al., 2018). I aligned participants with the overarching research question by selecting suitable participants with successful experience and ample knowledge related to the adoption and implementation of EMR systems to receive federal incentive payments.

Research Method and Design

Research Method

Yin (2018) described three research methodologies, which are qualitative, quantitative, and mixed. Researchers conduct a qualitative study when they need to understand a phenomenon in its natural setting (Sanjari et al., 2014). Yin (2018) described qualitative research as a method to explore the *what, why,* and *how* of a phenomenon in its natural setting. I used the qualitative research method because it was my intent to explore the *what, why,* and *how* of a particular phenomenon which, for this case study, was exploring strategies hospital project managers use to adopt and implement EMR systems successfully to receive federal incentive payments.

Researchers use the quantitative research method to examine relationships among variables, using measuring techniques and controls to ensure study validity (Astroth & Chung, 2018). Researchers use the quantitative research method to test hypotheses on relationships or differences among variables (Astroth & Chung, 2018). The quantitative method was not appropriate for my study because my goal was not to examine relationships among variables using statistical analyses through hypotheses testing. In the event that researchers combine the qualitative and quantitative methods in a single study, the appropriate research methodology to use is the mixed method (Yin, 2018). The mixed

method is suitable when researchers need to use both inductive and deductive reasoning (Yin, 2018). I did not use the mixed-method research methodology because my focus was not to examine relationships among variables using statistical analyses through hypotheses testing.

Research Design

I considered four qualitative research designs for this study, which are narrative, phenomenological, ethnographic, and case study. The narrative design is an account of an event or series of events, chronologically connected as told by an individual (Saunders et al., 2015). I did not use the narrative research design because I did not focus on participants' experiences relayed through their personal stories. Researchers use the phenomenological design to collect participants' lived experiences regarding the phenomenon under study (Yin, 2018). I did not select the phenomenological design for this study because I did not collect participants' lived experiences about the phenonemon under investigation. Researchers use the ethnographic research design to conduct an in-depth exploration of a community's cultural and social aspects (Saunders et al., 2015). I did not select the ethnographic design because my focus was not on the exploration of the values, behaviors, beliefs, and languages of members of a community. Exploring real-world business situations in business and management research requires the use of the case study design (Duchatelet & Donche, 2022). Researchers use the case study design to explore phenomena in their natural setting and conduct methodological triangulation, using a variety of data sources, increasing the validity of the research study (Yates & Leggett, 2016). I used the case study design to explore phenomena in their natural setting,

which for this study was exploring strategies hospital project managers use to adopt and implement EMR systems successfully to receive federal incentive payments.

Population and Sampling

Researchers use several types of sampling methods, including convenience, snowball, maximum variation, and purposeful (Yin, 2018). A phase of purposeful sampling entails establishing a selection criterion for participants meeting eligibility standards to address the overarching research question (Gall et al., 2007). Sample size should be purposeful to provide richness and relevance to the study (Yin, 2018). Researchers use purposive sampling to select participants meeting the established criteria to obtain rich data related to the phenomenon under investigation (Gall et al., 2007; Hüseyin et al., 2019). I used purposive sampling to select participants meeting the participating criteria to obtain rich data related to the phenomenon under investigation, which for this study was the effective adoption and implementation of EMR systems to receive federal incentive payments.

I collected data from three project managers in a single hospital in Illinois with successful experience in adopting and implementing EMR systems successfully to receive federal incentive payments. Researchers decide the appropriate sample size by acknowledging the exploratory nature of the study, richness and thickness of data, and generalizability to the larger population (Moser & Korstjens, 2018). At least three and no more than 15 participants are a suitable number of participants for a case study (Yin, 2018). However, Yin (2018) recommended that at least three participants suffice for case study research, but these participants must possess successful experience in the

phenomenon researchers are trying to investigate. If I had not reached data saturation with three participants, I would have continued to interview the study participants until reaching data saturation.

Researchers reach data saturation when they are unable to obtain any new information from the study participants (Moser & Korstjens, 2018). Yin (2018) stated that researchers could reach data saturation with at least three participants providing rich and thick data about the phenomenon under investigation. I achieved data saturation by asking study participants open-ended questions in semistructured interviews to obtain rich and thick data. I called and emailed qualified candidates to extend an invitation to participate in this study and secured their approval.

The researcher needs to ensure that the interview is held in a setting that allows for open dialogue with the participants (Yin, 2018). In addition, researchers must provide convenience to participants to establish fluid conversations with them to build rapport and decrease their anxiety because interviews conducted with tension and conflict can reduce the rapport needed to gather information related to the phenomenon under investigation (Malterud et al., 2016). Because of the 2020 pandemic, I did not conduct face-to-face, semistructured interviews. As an alternative, I conducted semistructured interviews using Zoom. I emailed participants the informed consent form. I included this information in my IRB application. In addition, I provided convenience to participants to establish fluid conversations with them to build rapport with them and decrease their anxiety. I arranged the interview in a convenient setting to interview the participants without distractions to enhance communication. I provided an outline to each participant

on what would take place and informed them that the interview would take approximately 60 minutes.

Ethical Research

Researchers must obtain consent from study participants (Neufeld et al., 2019). Before I began my data collection, I required each participant to sign the informed consent form. Some of the components of the informed consent form include the nature of the study, expectations of researchers and participants, potential risks and benefits, and researchers' contact information (Yin, 2018). Ellis (2019) stated that researchers must inform study participants that participation is strictly voluntary. In addition, researchers must inform study participants that participants may withdraw their participation at any time during the research process, are not required to provide a reason for such withdrawal, and will not face any negative consequences (Yin, 2018). I informed the participants of this study that participation is voluntary and that they could withdraw from the study at any time without having to state a reason for such withdrawal or suffering any negative consequences. Participants were able to announce their withdrawal in writing or verbally; however, nobody withdrew from the study. The consent form contained all the guidelines, including steps to withdraw from the study. Researchers must ensure the participants' dignity, privacy, and confidentiality (Lee, 2018). At no point during this study, participants received any tangible or in-tangible benefits. Tangible or in-tangible benefits may integrate biases into the research study (Lee, 2018).

As the researcher, I determined if each participant met the minimum criteria to participate in this study, including that the participant had to be at least 18 years of age.

Walden University's IRB granted me permission to conduct this study, which allowed me to begin conducting interviews. During the interview process, I focused on each participants' dignity, privacy, and informed consent in alignment with Walden University's IRB guidelines. The Walden University's IRB approval number for this study is 08-21-20-0658759.

Researchers develop the informed consent form, explain its content to each participant, and secures participant agreement to participate by collecting a signed informed consent form (Lee, 2018). I created an informed consent form using basic English to ensure that participants with various education levels were able to understand its contents, as Lee (2018) recommended. I provided a copy of the informed consent form to each qualified participant and reviewed its contents with each participant to ensure understanding of the content of the informed consent form. Reviewing of the informed consent form is necessary to ensure each participant has read the consent form and is making an informed decision to participate in a research study (Ellis, 2019).

Participants of this study had their identification and affiliation to their organization masked to ensure confidentiality. To ensure study participants or organizations are not indirectly discovered, I did not include any attributes in this study. A researcher should conduct ethical research that has minimal impact on the study participants and that produces ethical, trustworthy, and meaningful results (Lee, 2018). To ensure confidentiality, a password-protected area of my personal computer's hard drive was used to collect and store all research-related documents. For a period of 5

years, I will maintain a locked drawer with any physical documents. Per Walden University's IRB guidelines, I will destroy all research-related data after 5 years.

Data Collection Instruments

Lincoln and Guba (1985) were the first scholars introducing the idea of the researcher as the primary research instrument in a study. It is widely accepted that researchers become the research instrument when conducting qualitative research (Clark & Vealé, 2018; Moser & Korstjens, 2018; Pustulka et al., 2019). Because a qualitative researcher is the research instrument, several options to collect data when conducting case study research exist, including conducting semistructured interviews, reviewing organizational documents and artifacts, and making observations (Carr et al., 2019; Fritz & Vandermause, 2018).

Qualitative researchers favor the use of semistructured interviews containing open-ended interview questions, allowing researchers to ask follow-up questions to gain an improved understanding of the participants' experiences (Barrett & Twycross, 2018; Hamilton & Finely, 2019). Researchers can gain a better understanding of the participants' experiences with the phenomenon under investigation when conducting semistructured interviews (Clark & Vealé, 2018).

I collected data by asking participants, selected from a single hospital, open-ended questions in semistructured interviews to obtain rich and thick data. Researchers could collect rich and thick data from study participants related to the phenomenon under investigation (Barrett & Twycross, 2018; Fusch et al., 2018). The rich data collected through semistructured interviews can lead to researchers uncovering new themes (Clark

& Vealé, 2018). An outline of predetermined interview questions is useful during semistructured interviews with the opportunity to ask clarifying questions to gain a better understanding of the participants' experiences with the phenomenon under investigation (Barrett & Twycross, 2018; Hamilton & Finely, 2019). I conducted semistructured interviews with the study participants and asked clarifying questions to ensure the collection of rich and thick data.

As the researcher, I was the primary research instrument to collect data following an interview protocol (see Appendix A) to conduct semistructured, face-to-face interviews that I recorded and transcribed. I ensured that participants answered all interview questions (see Appendix B) during the interview. I gave participants time at the end of the interviews to add any additional thoughts on the implementation of EMR systems. Researchers ask study participants for any parting thoughts and experiences to obtain responses related to the phenomenon under investigation that did not emerge during the interviews (Hamilton & Finely, 2019). Researchers integrate biases into their research studies (Barrett & Twycross, 2018). Researcher reflexivity is a practice researchers use to address their biases (O'Boyle, 2018). Researchers review their thoughts and decisions on the data collected when they use the process of research reflexivity (Rae & Green, 2016). Researchers eliminate their biases by practicing researcher reflexivity, ensuring research transparency (O'Boyle, 2018). I engaged in reflexivity by reviewing my thoughts and decisions on the data collected and recorded them to address my bias.

Document analysis is another technique researchers use when collecting data (Moser & Korstjens, 2018; Yin, 2018). Researchers conduct methodological triangulation by concurrently using semistructured interviews and organizational documents and artifacts to explore a phenomenon in its natural setting, improving the study's rigor (Hamilton & Finely, 2019; Moser & Korstjens, 2018). Annual reports, financial statements, and budget reports are some examples of documents researchers review (Yin, 2018). Documents can be beneficial during case study research because they can contain details about data collected that had not emerged (Yin, 2018). I analyzed organizational documentations and artifacts, such as project smart sheets and employee records, related to the implementation of the EMR system.

Member checking is a tool that researchers use to increase the credibility of the study by allowing the participants to confirm, adjust, or clarify any aspect of the data collected (Rakic et al., 2017). Researchers use member checking by providing participants with researchers' interpretations of participants' answers to interview questions and asking participants to verify the accuracy of such interpretations (Rakic et al., 2017). I used member checking to avoid biases by allowing the participants to review my interpretation of their answers to interview questions and verify the accuracy of my interpretations.

Data Collection Technique

To capture the paritipants' experiences within the phenomenon under study, researchers use semistructured interviews (Barrett & Twycross, 2018). The semistructured interviews consist of open-ended questions that participants answer to

describe their personal experiences with the phenomenon researchers are investigating (Hamilton & Finely, 2019). The overarching research question is the focal point that researchers use to control the direction of the semistructured interviews and to develop supporting questions to gather additional information related to the phenomenon researchers are investigating (Fritz & Vandermause, 2018).

I conducted semistructured interviews with three project managers in a single hospital in Illinois with successful experience in adopting and implementing EMR systems successfully to receive federal incentive payments. Researchers also review and analyze organizational documentation and artifacts, to obtain information directly related to the phenomenon researchers are investigating (Yin, 2018). The use of different data collection methods increases the researchers' understanding of the phenomenon under investigation and the rigor of the study because researchers are able to conduct methodological triangulation (Yates & Leggett, 2016). I reviewed and analyzed organizational documentations and artifacts, such as project smart sheets and employee records, that directly related to strategies that hospital project managers use to adopt and implement EMR systems successfully to receive federal incentive payments.

Conducting semistructured interviews and reviewing and analyzing organizational documentation and artifacts can have both advantages and disadvantages (Hamilton & Finely, 2019). Regarding the advantages of conducting semistructured interviews, qualitative researchers could ask follow-up questions to gain an improved understanding of the participants' experiences and to give participants an opportunity to explain their answers (Barrett & Twycross, 2018). Another advantage is that researchers could observe

participants' nonverbal cues when answering interview questions (Ngozwana, 2018). Regarding the advantages of reviewing and analyzing organizational documentation and artifacts, researchers collect data from multiple sources to conduct methodological triangulation, comparing data collected to determine if data alignment occurred to increase the validity of the research study (Moser & Korstjens, 2018). Collection of data from various sources can result in the development of emerging themes or additional areas for researchers to explore to perhaps obtain new themes (Sanjari et al., 2014). By reviewing and analyzing organizational documents and artifacts, researchers discover important information related to the phenomenon they are investigating, such as the correct spelling of employees' names and rich descriptions of events (Yin, 2018).

I conducted semistructured interviews, consisting of open-ended questions, with the study participants and asked clarifying questions to give participants an opportunity to elaborate on their answers, ensuring the collection of rich and thick data. I engaged in methodological triangulation to increase the validity of this study by using several sources of data collection methods, such as conducting semistructured interviews and reviewing and analyzing organizational documentation and artifacts, and comparing data collected from several sources to determine if data alignment existed.

Semistructured interviews and organizational documentation and artifacts also have disadvantages (O'Boyle, 2018). Participants can become nervous or uncomfortable when researchers' record participants' answers to interview questions (Henderson, 2018). Another disadvantage is that researchers may have limited experience in conducting semistructured interviews (Fritz & Vandermause, 2018). Participants could incorporate

biases into the research process because participants may want to please the researchers by answering interview questions with information that participants believe that researchers would like to hear (Yin, 2018). Researchers could integrate biases into the research process by exhibiting nonverbal cues and expressing their own views regarding the phenomenon under investigation (Barrett & Twycross, 2018). Disadvantages can expand to the analysis of organizational documents if the employee of the participating organization develops the documents with biases that reflect own personal interests (Barrett & Twycross, 2018). Employees in the participating organization could have developed organizational documents filled with own biases that cause an inaccurate account of events or numbers (Rakic et al., 2017). When attempting to gain access to organization documents, researchers could face difficulties (Moser & Korstjens, 2018).

When appropriate, researchers conduct a pilot study. To ensure the significance on the content of the study, some researchers conduct a pilot study (Karagiozis, 2018). However, because qualitative researchers use a variety of data collection techniques, such as semistructured interviews and organizational documentation and artifacts, a pilot study is not absolutely necessary, avoiding the extensive time required for a pilot study (Barrett, 2018). For this study, I did not conduct a pilot study because it is a time-consuming activity and I used several data collection techniques, such as semistructured interviews and organizational documentation and artifacts, making the pilot study not absolutely necessary.

Researchers use member checking by providing participants with researchers' interpretations of participants' answers to interview questions and asking participants to

verify the accuracy of such interpretations (Rakic et al., 2017). Member checking is a tool that researchers use to increase the credibility of their study by allowing the participants to confirm, adjust, or clarify any aspect of the data collected (Rakic et al., 2017). There can be disadvantages to member checking. Researchers can mistakenly assume the study participants agree with their interpretations of participants' answers when no comment is received from the study participants when, in fact, the participants may not have read that portion (Birt et al., 2016). Participants may not want to disagree with the researchers' interpretation of their answers and may just accept these interpretations as accurate (Yin, 2018). I conducted member checking to enhance the credibility of this study by allowing the participants to review my interpretation of their answers to interview questions and verify the accuracy of my interpretations.

Data Organization Technique

Researchers that are completing a qualitative study can begin organizing their data before starting data analysis by creating an appropriate data organization system (Yin, 2018). The organization of data can result in more rigorous research studies (Yin, 2018). Comparable to quantitative data being organized in a database, qualitative researchers could benefit from collecting and organizing data in a systematic way (Malterud et al., 2016).

I conducted semistructured, face-to-face interviews with three project managers in a single hospital in Illinois using open-ended questions (see Appendix B). Researchers assign unique codes to study participants to maintain participants' confidentiality (Fennelly et al., 2020). I assigned unique codes to participants of this study to ensure their

confidentiality. I used the letter P and a number between 1 and 3, to differentiate the participants and maintain their confidentiality. I ensured that no identifying markers are in the transcripts. To ensure the confidentiality of participants, researchers can change the names of participants, participating organizations, and places that participants mention (Sanjari et al., 2014). To ensure the privacy of the participants in this study, I transcribed each project managers' interview, removed any identifying information, and assigned the appropriate identifying participant code to each project manager in the interview transcript.

To ensure participants' confidentiality, a password-protected area of my personal computer's hard drive was used to store all research-related documents. The unique participant code was included on any documents connected to the specific participant. I ensured data security through data protection and safe keeping of research-related documents. A document identifier number was assigned to all documents obtained during the research process. To organize the organizational documentation and artifacts, I converted paper documents to electronic documents by scanning them into my secured, password-protected personal computer's hard drive. I filed electronic documents on a dedicated folder to ensure data organization. Annotated bibliographies were included within these scanned documents to improve the retrieval process, as Yin (2018) recommended.

To improve data organization, I stored electronic data in an identified folder on a password-protected area of my personal computer's hard drive. Computer-assisted qualitative data analysis software (CAQDAS) can host raw data imported from a

computer's hard drive to improve the organization of data collected. Researchers can organize and analyze their data more effectively and efficiently by using CAQDAS (de Almeida et al., 2019). Tools such as CAQDAS enhances the data analysis process but it does not replace the researcher's role in detecting and interpreting meanings while organizing and analyzing the data (Antoniadou, 2017). I used NVivo, which is a qualitative data analysis computer software. NVivo helps qualitative researchers to organize, analyze, and find insights in qualitative data like interviews and open-ended survey responses (Antoniadou, 2017). I used NVivo to import, file, and organize my semistructured interview transcripts. Having a centralized location for data collected in this study allowed me to retrieve and analyze the data more efficiently.

Researchers exhibit transparency by keeping a reflective journal, which can assist them in bracketing (Baksh, 2018). Researchers can capture an accurate picture during the research process with a reflective journal because the journal could include reactions to interviews or descriptions of the interview settings, which enriches the study (Gamble et al., 2019). To ensure transparency and assist with the bracketing process, I kept an electronic reflective journal to track my thoughts and ideas during the analysis of organizational documents and artifacts. I documented my reactions to the interview process, interview setting, and decisions made throughout the study to promote transparency.

Researchers should not keep data longer than required and ensure that information is secured (Glenna et al., 2019). Best practices that emerged from legislation regarding data protection are in place to assist with researches on proper data protection during and

after conducting research (Boyd et al., 2018). The best practices for research included: identifying the purpose of collecting data, obtaining informed consent, collecting essential data, using data for research purposes only, storing the data for the required length of stay only, and keeping all data secured (Boyd et al., 2018).

I kept all raw data on a password-protected area of my computer's hard drive when not in use and kept all hardcopies in a secured, locked, and restricted area. My practice aligned with Boyd et al.'s (2018) recommendations to secure and lock the data collected. Researchers must consider ethical requirements for data collected when conducting research, including storing hard copies in a secured and locked filing cabinet and electronic copies in a password-protected area of a computer's hard drive (Kempfert & Reed, 2011). For a period of 5 years after the completion of this study, I will maintain a locked drawer with all raw data, adhering to the requirements of Walden University. Per Walden University's IRB guidelines, I will physically destroy all raw data kept on my hard drive and shred all hard copies after 5 years.

Data Analysis

Researchers increase the richness and thickness of the data collected by using triangulation (Johnson et al., 2017). Methodological triangulation occurs when researchers collect data using several methods and compare the data collected to see if data alignment exists (Johnson et al., 2017). Researchers conduct methodological triangulation by using several data collection methods, such as semistructured interviews and organizational documentation and artifacts, to increase the credibility and validity of the data collected (Varpio et al. 2017). Collecting data using several methods is desirable

research practice because researchers obtain several perspectives related to the phenomenon under investigation (Yates & Leggett, 2016). For example, researchers obtain convergent evidence when they triangulate data collected from conducting semistructured interviews and reviewing organizational documentation and artifacts (Yin, 2018). Convergent evidence leads to the increase in the construct validity of a case study (Yin, 2018). I conducted methodological triangulation by conducting semistructured interviews and reviewing organizational documentation and artifacts to compare data collected and determined that data alignment occurred, increasing the validity and credibility of the data. Conducting methodological triangulation allowed me to obtain several perspectives regarding the successful implementation of EMR systems. I used member checking by giving participants my interpretations of their answers to interview questions and asking participant to verify the accuracy of such interpretations.

Researchers often conduct data analysis at the same time they are collecting data, resulting in an interactive process (Frost et al., 2018). Qualitative data analysis can consist of various methods: thematic, content, and discourse analysis (Cowley et al., 2019). Researchers use thematic analysis by reviewing interview transcripts several times to better understand the text (Frost et al., 2018). Classifying, ordering, and analyzing data can be completed by using DeDoose, which is a CAQDAS (de Almeida et al., 2019). Researchers use CAQDAS to identify themes and any relationship between them (Antoniadou, 2017).

Researchers can use five sequential steps in the data analysis process that Yin (2018) suggested: compile, disassemble, reassemble, clarify, and conclude. Step 1

consists of researchers searching for patterns and themes in different interview transcripts by compiling and organizing data. Researchers use qualitative data analysis software, such as NVivo, to code and analyze data collected (Çayir & Saritas, 2017). NVivo allows researchers to quickly organize, code, and classify large amounts of data (Çayir & Saritas, 2017). Step 2 consists of disassembling the data and assigning codes them. In Step 3, researchers reassemble and reorganize the data by themes. In Step 4, researchers validate the interpreted data against the interview transcripts by using thematic analysis. Researchers identify patterns and themes through thematic analysis to answer the overarching research question (Frost et al., 2018). For my data analysis process, I used NVivo to interpret the raw data collected from conducting semistructured interviews and reviewing organizational documentation and artifacts. I organized and coded the data by themes, map the emerging themes, and identify any relationships among the themes. Member checking is as tool used to validate researchers' interpreted data collected from study participants (Rakic et al., 2017). I conducted member checking to enhance the credibility of this study by allowing the participants to review my interpretation of their answers to interview questions to verify the accuracy of my interpretations.

Researchers use the case study design because of the opportunity to use several data collection techniques (Yates & Leggett, 2016). Researchers triangulate data collected to increase the richness and thickness of data (Yin, 2018). Researchers increase the validity of their studies when they conduct methodological triangulation to determine if data alignment exists between the data collected from conducting semistructured interviews and the data collected from reviewing organizational documentation and

artifacts (Yates & Leggett, 2016). Documents and artifacts related to the participating organization can be the second source of data for triangulation. Analyzing data collected from reviewing organizational documentation and artifacts could take the form of one of two methods, which are thematic analysis and content analysis (Cowley et al., 2019; de Almeida et al., 2019). I analyzed organizational documents and artifacts using content analysis. Researchers use content analysis to analyze data collected by organizing identified codes and identifying emerging themes (Frost et al., 2018). The three phases of content analysis are preparing, organizing, and reporting (Cowely et al., 2019). By conducting methodological triangulation, I triangulated data collected from semistructured interviews and organizational documents and artifacts and determined that data alignment occurred between these two sources of data collection. Conclusions and recommendations develop from the findings to answer to the central research question in Step 5 (Yin, 2018). I gathered my collected data, disassembled the data using codes, reassembled the data using themes to comprehend my research phenomenon, interpreted my data by using thematic analysis, and produced conclusions from my research results.

Researchers focus on major themes in the research data by mapping the relationship between the themes to answer the central research question (Yin, 2018) and to connect major themes to current literature and the conceptual framework (Antoniadou, 2017). Researchers can connect major themes and classify them into data categories by coding data with labels (Çayir & Saritas, 2017). Researchers determine statistical episodes of thematic codes within each data category by performing frequency analyses (Cowley et al., 2019). I mapped major themes into data categories by using the data-

coding feature in NVivo, which enhanced the trustworthiness in this study. Within the conceptual framework, researchers can locate major themes (Antoniadou, 2017). The conceptual framework links to previous literature, the methodology, and the results of a study (Antoniadou, 2017). I correlated major themes with the literature and the conceptual framework in this study.

Reliability and Validity

There are four accepted criteria when researchers are conducting qualitative studies to establish reliability and validity, which are dependability, credibility, transferability, and confirmability (Lincoln & Guba, 1985). Researchers use these four criteria to establish trustworthiness in their studies (Johnson et al., 2017). Just as quantitative researchers establishing reliability and validity in their studies, qualitative researchers ensure the trustworthiness of their studies (Yin, 2018).

Reliability

In qualitative research, especially case studies, reliability is an area of concern (Yin, 2018). When researchers use data collection instruments that are reliable, researchers generate reliable and convincing results (Hamilton & Finely, 2019). As suggested by several researchers (Fritz & Vandermause, 2018; Malterud et al., 2016), I used two data collection instruments in this study, which are semistructured interviews and organizational documentation and artifacts. All data collection instruments are of equal value and, consequently, researchers should not view one data collection instrument as better than the rest (Yin, 2018). In fact, data collection instruments are

complementary and researchers should use as many instruments as possible in a case study (Yin, 2018).

Dependability refers to the stability of findings over time (Birt et al., 2016). As recommended by several authors (Krell et al., 2016; Moser & Korstjens, 2018; Rumeser & Emsley, 2016), researchers should use the same interview questions to ensure dependability in a case study. I used the same interview questions to ensure dependability in this study. Rakic et al. (2017) recommended the use of member checking to establish data dependability. I used member checking to establish data dependability. Researchers use member checking by providing participants with researchers' interpretations of participants' answers to interview questions and asking participants to verify the accuracy of such interpretations (Rakic et al., 2017). Data dependability increases when using member checking because the researchers' biases do not taint the facts (Birt et al., 2016).

Researchers audio-record the interviews to review the content and reflect on participants' answers, leading to more reliable transcripts and themes (Barrett & Twycross, 2018). To avoid integrating my biases into this study, I asked the interviewees to explain their answers by giving substantial detail. If the answers lacked depth or significance, I asked the participants to expand on their answers. As suggested by several authors (Moser & Korstjens, 2018; Pustulka et al., 2019), I avoided tainting participants' perspectives by not discussing any details about the study prior to the interview to ensure reliable results. As recommended by several scholars (Yates & Leggett, 2016; Yeung et al., 2018), I maintained consistency and increased reliability by not introducing any new interview questions, following the interview protocol.

Validity

Researchers use the research validation framework, consisting of credibility, transferability, and confirmability to validate their studies (Birt et al., 2016). Case study researchers ensure credibility by using several data collection methods and comparing the data collected to determine if data alignment occurs (Yates & Leggett, 2016). Researchers establish credibility by carefully reading all interview transcripts (Cowley et al., 2019). To establish credibility, I thoroughly read and reviewed all interview transcripts to guarantee that I had captured the participants' perspectives accurately. When reviewing the transcripts, I looked for similarities and differences among the study participants. To increase the validity of the interview data, I used member checking between the transcription of interviews and the analysis of data collected processes, as suggested by experts (Rakic et al., 2017). I used member checking by giving participants my interpretations of their answers to interview questions and asking participant to verify the accuracy of such interpretations.

Within the research validation framework, there is transferability, which is when researchers apply the findings from one study to another (Porter et al., 2016). Case study researchers desiring to achieve high-quality results should focus on selecting suitable study participants, providing detail-oriented participant demographic information, completing in-depth data analysis, and presenting findings in an intuitive format to increase their study's transferability (Yin, 2018). To provide high-quality results, I selected suitable participants, gave detail-oriented demographic information, completed

in-depth data analysis, and presented findings in an intuitive format to increase the transferability of this study.

Confirmability occurs after researchers establish dependability, credibility, and transferability and refers to the ability of researchers to show that the data collected represent an accurate interpretation of the study participants' answers to interview questions without biases (Johnson et al., 2017). I recorded my thoughts, insights, and biases while listening and conducting each interview. I carefully transcribed the answers given in the interview, confirmed connections between data and results, and used existing literature to increase the confirmability of study results.

Using methodological triangulation when conducting a case study strengthens the validity of the research study (Yates & Leggett, 2016). Researchers collect data from multiple sources to conduct methodological triangulation and compare data collected to determine if data alignment occurred (Moser & Korstjens, 2018). I conducted methodological triangulation by comparing data collected using various sources, such as semistructured interviews and organizational documentation and artifacts, and determined that data alignment had occurred. Case study research validation most often has methodological triangulation as the foundation due to the multiple data sources used when collecting data (Hamilton & Finely, 2019).

I continued to analyze data until I reached data saturation. Researchers reach the point of data saturation when additional data collection does not lead to any new further information that would add to the study (Moser & Korstjens, 2018). To provide conclusive findings, researchers must achieve data saturation (Moser & Korstjens, 2018).

To ensure I reached data saturation, I collected and analyzed data until further data collection resulted in no new meaningful information that can add value to this study.

Transition and Summary

The purpose of this qualitative single case study is to explore strategies that hospital project managers use to adopt and implement EMR systems successfully to receive federal incentive payments. Section 1 included a discussion of how project managers can use strategies to adopt and implement an EMR system. Rogers' (1962) diffusion of innovation theory is the conceptual framework for this study. A review of the professional and academic literature for this study was completed.

In Section 2, the following subsections were presented: purpose statement, role of the researcher, participants, and the research method and design. The objective was to discuss the research process, which includes population and sampling, ethical research, data collection instruments and technique, data organization techniques, data analysis, and reliability and validity. In Section 3, the following subsection will be presented: presentation and analysis of the findings, applications to professional practice, implications for social change, recommendations for action and further research, reflections, and a conclusion.

Section 3: Application to Professional Practice and Implications for Change

Introduction

The purpose of this qualitative single case study was to explore strategies that hospital project managers use to adopt and implement EMR systems successfully to receive federal incentive payments. I conducted three virtual, semistructured interviews with three project managers with at least 2 years of successful experience in adopting and implementing an EMR system to receive federal incentive payments. I collected data using transcribed participants' interviews and organizational documentation, which included training guides and power points. Three primary themes emerged from data analysis: the process of change management, initial and continuous training of staff, and staff resistance to current and new processes.

Presentation of the Findings

The overarching research question for the study was as follows: What strategies do hospital project managers use to adopt and implement EMR systems successfully to receive federal incentive payments? Three semistructured interviews were conducted via Zoom with three project managers in a single Illinois hospital. Participants were identified as P1, P2, and P3. The primary hospital for the study was identified as H1, and the affiliated hospital was H2. Interviews were recorded and then transcribed, coded, and themed. I used NVivo software to establish themes from the transcribed interview. Three themes emerged from data analysis: effective change-management practices, strategies for training staff, and strategies for overcoming barriers and staff resistance to new processes.

Theme 1: Effective Change-Management Practices

The first theme that emerged as a result of analyzing data was the practice of effective change management. All three participants (P1, P2, and P3) discussed the way they approached their staff to adopt and implement their EMR system and provided support throughout the adoption and implementation process. The adoption and implementation of an EMR system involves the organization to adopt and make the necessary changes to be successful. P2 discussed the strategy as follows:

> The main thing is that you have to have an effective change management strategy . . . careful planning . . . transparency and communication are very important . . . you need to have an effective roadmap . . . training and really encourage participation . . . the more we can get everyone involved the easier that implementation will be.

This strategy showcases the critical importance of the way the three participants viewed change management and wanted to be successful in their organization. All three participants discussed the implementation process that led to get their team on-board. P1 stated that Bridges' transition model was used to conduct change management. Bridges' transition model is a research-based framework that classifies transition into three phases, which are an ending, a neutral zone, and a new beginning (Jones-Hooker et al., 2020). In Bridges' transition model, staff can feel a sense of loss of what is being left behind, which can result in grief, anger, and anxiety (Gill & Shanta, 2020). Individuals affected by the change should be involved in the change process; barriers can be created when effective communication has not taken place when introducing new technology (Woody,

2020). P1 and P2 informed that communication changes were relayed to the team using *Workplace by Facebook*. P2 discussed the use of posters on the walls in the hallway to communicate any changes within the EMR system. P1 provided further detail by stating the following:

> We communicate through the workplace component . . . from the project management side of things, they walked us through what their expectations were . . . where we are going and what opportunities are out there . . . what changes mean in current state . . . project timelines . . . trying to bring together a united, shared vision across the health system . . . we talked about some of the transition phases like shocked, denial, anger.

New workflows require layered decision support, order sets, and clinical pathways; clinical champions, superusers, and other implementation agencies need to be in place for support (Scott et al., 2019). All three participants claimed that champions, nursing onboarding teams (NTOs), and direct support staff have been identified in the organization. Champions can establish buy-in, reduce resistance to change, and create a culture of readiness and acceptance, which leads to greater success with an implementation (Woody, 2020). P1 provided the following additional details related to the implementations process:

> Part of their champion role, as some of the expectations . . . to be positive influencers . . . act as a resource for our peers. Identifying with them. I understand that you feel like you are losing this, this, and this. Let's look on the flip side. We might be losing these things but with the new system we are gaining this, this, and

> this which will help smooth your computer documentation. It will make it faster for you. We can now communicate across our affiliates more easily than just needing to print a whole record to send to them.

Individuals build a trusting relationship in an organization if an effective coalition is in place because a trusting culture has an easier time with transitioning through change (Lv & Zhange, 2017). Discussions should take place in the organization before the implementation takes place to allow leaders and adopters to provide feedback on the process, which can help project managers overcome the barriers that might emerge once the implementation process starts (Lv & Zhange, 2017). P2 noted that staff shortage can impact the management of an EMR system:

> The main barrier we are seeing right now is staff. There is a staff shortage here, as well as everywhere else. We are pretty small here. There are not enough of us to do our daily jobs . . . We are very busy. For instance, I am the only informatics nurse at this hospital. As I am still trying to do my daily job and troubleshoot issues as they arise.

P2 described the way P2 ensured the EMR would work for the organization by stating the following:

> It is important to involve the other departments . . . involving the other departments is challenging because they are short staffed too. Of course, taking care of the patient is top priority so we can't really pull them from their patient care to attend these meetings.

P3 discussed another barrier of employee adoption by stating the following:

> People don't like change. I had a HR director tell me there is more longevity here at H1 than anywhere else he has worked. We have older employees here . . . if something goes wrong with the computer, their first instinct isn't to reboot it. They are there to take care of the patients.

Obstacles need to be removed to achieve change (Kotter, 1996). Project managers need to address these barriers by providing effective training and evaluating the capability of their staff (Lv & Zhange, 2017).

The complexity of innovation can result in resistance to change. Providing effective training to the adopters could translate into empowered staff, resulting in less resistance to change (Lv & Zhange, 2017). To have a successful project, project managers should set a common goal and ensure processes are in place to reach the desired goal (Seijits & Gandz, 2018). I reviewed organizational documentations that included how-to guides on navigating different parts of the EMR system, troubleshooting guides, and mock case studies. These resources are provided to the nursing team and physicians. P1 trains new nurses on their EMR system and P2 works with the physicians.

The how-to guide titled *Navigating Paragon Clinician Hub and OneContent* walks a new team member through the login page and how to find a patient. It gives a step-by-step guide to navigate the following tabs: results (flowsheets), documentation, and medical record. Describing the different tabs, such as the way the lab and radiology results are found under the results tab and within the documentation tab allows the user to find all the notes that have been written by various providers. While the *RX Writer* shows the physicians instructions to print and transmit a prescription, the *Order Priority* guide

shows physicians the way to select the priority when placing an order, which are routine, STAT, or timed. The guides also provided tips on things to avoid.

The *Display Issue* guide provides troubleshooting for the nursing team. This guide gives step-by-step assistance on known issues in their current system. Providing additional resources to adopters provides reassurance during the implementation process. A common resource for EMR systems is a helpdesk because helpdesk operators assist adopters during the implementation process, which improves the adopters experience and satisfaction (Ngugi et al., 2021). P3 worked the helpdesk and primarily focused on problems users have within the EMR system, but previously played a large role in training. P3 stated, "I answer the phones when someone has a problem . . . I am one of the people that help users with our EHR." When asked about ways to overcome barriers in the organization, P3 stated the following:

> I try to help them out and understand them. I don't want to belittle them or make them think they have a stupid question . . . I know what it is like to learn new software and not know what every button means. Some people are scared to try it and think it they click on a certain button it will blow everything up. I try to understand and give them a helping hand and let them know I am there for them.

Having resources such as champions and help desks provide support for the adopters and can result in a stronger adoption.

Correlation to the Literature

The findings noted in Theme 1 aligned with the findings of Seijits and Gandz (2018) in that organizations need to support the changes and help initiate actions that are

necessary to move the implementation into action. Project managers should create a coalition of key people sharing the same goal for the implementation process (Seijits & Gandz, 2018). Communication is a process that takes time and may need to be provided in different media to be effective (Eriksson & Fundin, 2018). Individuals build a trusting relationship in an organization if an effective coalition is in place because a trusting culture has an easier time with transitioning through change (Lv & Zhange, 2017).

Correlation to the Conceptual Framework

Theme 1 relates to Rogers' (1962) diffusion of innovation theory because all three participants discussed the five essential components of the diffusion of innovation theory, which consist of (a) innovation, (b) adopters, (c) communication channels, (d) time, and (e) social system (Rogers, 2002). P1 discussed the innovation of fixing their staff issues through their EMR implementation. P1 explained that if there is a staff shortage at H1, they would be able to borrow staff from H2 because they are on the same EMR. The staff would be knowledgeable in the same EMR and be able to chart the same. All three participants discussed the importance of the adopters being on-board and the communication to ensure success. Communication was discussed by all three participants. P1 and P2 informed that communication changes were relayed to the team using *Workplace by Facebook*. P2 discussed the use of posters on the walls in the hallway to communicate any changes within the EMR system. P2 discussed how staffing can impact an implementation and delays can occur. Through champions and communication, all three participants explained how adoption could be successful through the social system. Rogers' (1962) diffusion of innovation theory outlines that the adopter needs to

evaluate and determine if the new process is better than the previous practice. All three participants described their process on meeting and outlining a process to ensure success.

Theme 2: Strategies for Training Staff

The second theme that emerged as a result of analyzing data was the use of strategies for training staff. All three participants discussed the way they train or support the staff during and after the implementation process. P1 trains and supports the nurses, P2 trains and supports the physicians, and P3 works the help desk and supports the overall organization. P1 described the moment when P1 started working at the organization as follows:

> I have grown up with our current EHR system. When I first started working here as a tech, we were doing paper charting . . . when I got my RN license initially in 2003, we were just transitioning to an electronic health system from paper documentation, and we have had that system ever since then . . . [I] recall going through classes and such to learn how to document appropriate through the system.

P1 described the training process by stating the following:

> The initial training with the NTO is myself. I am the one that is going through that system. You could say one-on-one. I may have two, three, five colleagues in the classroom at a time depending on the time of year and who is coming though. We will go through their checklist before they are allowed to go to their respected unit. Once they are on their unit, there is another clinical check list, where their preceptor, who could be a very experience colleague to a colleague who has been

> with us for a year or two. The nurse manager has made the decision to who will be the preceptor. There is a check lists for their preceptor for them to sign off on also. Some things such as enter daily assessment or demonstrates appropriate admission assessment completed, which would include the computer documentation.

P2 explained the collaboration that exists with the physicians when they start to use their current EMR system:

> I do all the initial trainings with all of the providers who start here. After the initial training, I regularly check-in with all of the providers and physicians and get their feedback, any problems they are having, anything they have noticed, how are they doing certain steps. Just really stay involved a lot with the clinical staff.

P1 provided the organizational documents that included the how-to guides on navigating different parts of the EMR system, troubleshoot guides, and mock case studies. P1 used those daily when training the nursing team. P1 provided an overview on what it would be like to be a new nurse onboarding by stating the following:

> When we have new colleagues come through to us, we have them go through what we call NTO. For our specific location, we will go through a brief overview of where to enter vital signs, where to enter assessments, where to enter care plans and notes for both our care techs . . . That is the first layer is educating the new colleagues. The second layer would be ongoing audits when we are looking at our quality indicators for nursing . . . What we have found through chart audits is that

> people document in many different places within the health record. It is not consistent. What it has forced us to do has been to go back and re-educate staff on where we prefer that documentation be located. Those audits still are continuing. It is a tedious piece that is necessary. In the last year or two we have changed, based on colleague feedback, where are request for that documentation was. Even based on that feedback, we still have those outliers, and to help with keeping them on track and using the electronic health record as intended, we do have some computer-based learning. As we are auditing and identify a colleague that consistently documents in the wrong location, they will be directed to this individualized learning for them to review the appropriate place. This needs to be submitted back to their manager.

An initial training is completed but it does not end there. P1 and other coworkers performed audits that allow them to identify areas that need to be retrained. Providing competency reviews can increase the success of the implementation in the long-term (Tetef, 2017). The three participants performed audits, which consisted of conducting competency reviews to ensure accuracy and gain an understanding of the proper use of the EMR system. P2 provided the initial training to the physicians and conducts the audits. Regarding this role, P2 stated the following:

> I do a lot of audits based on issues that are raised by varies departments. Say a lab, or registration, medical records, or any of those other partners, they will call contact me when they see an issue. They see it one time, okay. They see again, they contact me, and I do some audits and research to determine what is going on.

> Is it really a training need? A system limitation? It is usually a re-education need. That is where I get involved. We are not very proactive about it. It's more reactive when we start to see the issues. I do also check-ins.

The organization looked for areas of concern to correct them before they became a larger issue. When system issues were identified, P1 provided troubleshoot guides, which helped users navigate the system to learn issues in the EMR.

All three participants mentioned similar training processes. P3 was one of the earlier workers involved in the initial rollout and described having group sessions. However, P3 now focuses on the help desk. P1 and P2 currently train and the support the nurses and physicians and described one-on-one and group sessions. P1 mentioned, "I may have two, three, five colleagues in the classroom at a time," while P2 stated, "I do an initial one-on-one session. There have been times I might have to put a couple of them in the room at the same time but that is very infrequently."

Outside of the initial training process and audits, P1 discussed the organization's use of champions, which can assist with removing barriers. Appointed champions need to be respected by their peers and hold the line on the full adoption of the EHR (Woody, 2020). P1 explained in detail the true meaning of a champion by the organization by stating the following:

> Part of their champion role . . . they want us to be positive influencers for our peers. Act as a resource for our peers. Identifying with them. I understand that you feel like you are losing this, this, and this. Let's look on the flip side. We might be losing these things but with the new system we are gaining this, this, and

> this which will help smooth your computer documentation. It will make it faster for you . . . I think the champions are going to be very helpful with reducing those barriers . . .

Leaders and champions can assist adopters and provide guidance during the process change. Champions can help communicate the expected benefits with a positive attitude and encourage the adoption of the EHR during implementation (Kabukye et al., 2020).

Correlation to the Literature

The findings in Theme 2 align with Weagraff's (2016) study in that well-designed planning and training provided to the staff is critical to the organization's success. Internal resources, such as champions, build trust and help leaders and adopters have someone to reach out to during the implementation process (Mount & Anderson, 2015). Champions can provide insight to the project manager on challenges the adopters are facing (Mount & Anderson, 2015).

Correlation to the Conceptual Framework

Theme 2 provided insight into the training process conducted at H1. Theme 2 correlates with Rogers' (1962) diffusion of innovation theory by adopters being one of the five essential components. P1 and P2 described their training process and P1 explained their need for champions to be successful. Fennelly et al. (2020) explained that during the implementation process, leaders need to identify champions.

Theme 3: Strategies for Overcoming Barriers and Staff Resistance to New Processes

The third theme that emerged as a result of analyzing data was the use of strategies for overcoming barriers and staff resistance to new processes. Users'

perceptions are essential in exploring the barriers to EHR use due to the significance of users in information system utilization (Ngugi et al., 2021). All three participants discussed current barriers to the implementation and ways to overcome them. The initial rollout had been delayed a few times, causing staff to not embrace it as easily. P1 stated the following:

> The colleagues have been teased a little which may lead to people not embracing it as much to start with. We were told we were going to have it and then we weren't. It was put on hold and then were told again and then COVID came, and everything got pushed back.

Outside of the delays, P1 described the way staff felt about adopting an EHR system that their affiliated hospital uses. H2 acquired H1 a few years ago, which has brought up other barriers. Regarding this adoption, P1 stated the following:

> What we are seeing as potential barriers is kind of a big brother, little brother scenario . . . since our initial affiliation, I feel a lot of colleagues don't feel like it's their home anymore. Their comfort with being part of a larger health system is not very good. It's a different way of viewing things. Some will look to it as being very positive. We got resources opened up to us . . . There are others who are only doing it because the larger facility within our health system says so. It is not because we want it but we were told to do it.

Building trust in staff within H2 has been a barrier when implementing a new system, P1 described resistance from team members. P1 explained that H1 had staff that had worked

there for a long time and felt comfortable with their current EHR system. P1 described the following:

> Trying to figure out how to get them to trust and work through loss of familiarity. We do have several new colleagues, but we have a lot that have been here for a very long time . . . I also know with 20 years of experience working in the same electronic health records that I might come across my own challenges. A novice that doesn't have the familiarity, will that slow down my workflow down to start with? Yeah, it probably will to start with but once you become more fluent with its use, our colleagues should be able to combat that and see that it was a move for the better . . . I had this knowledge and now I don't.

P1 discussed strategies used to combat these barriers. All three participants discussed the different methods they use to combat barriers when implementing a new EHR system. These processes included champions and one-on-one and group training sessions. P1 explained that changes help to enhance their current workflow process when documenting. P1 stated,

> Act as a resource for our peers. Identifying with them. I understand that you feel like you are losing this, this, and this. Let's look on the flip side. We might be losing these things but with the new system we are gaining this, this, and this which will help smooth your computer documentation. It will make it faster for you. We can now communicate across our affiliates more easily than just needing to print a whole record to send to them.

Through acknowledgement of the concerns of the staff, P1 described the way P1's organization combats challenges. Staff was another barrier. Along with most hospitals, they are short-staffed. High staff turnover can be a barrier in the use of EHR, especially when new staff or agency staff lack the knowledge to use the system (Ngugi et al., 2021). P2 stated the following:

> The main barrier we are seeing right now is staff . . . There are not enough of us to do our daily jobs plus try to implement a new system . . . Of course, taking care of the patient is top priority so we can't really pull them from their patient care to attend these meetings . . .just last night we received a message that the project itself is being put on hold for a month . . . That is our huge barrier. Our staffing shortage. There are not enough people to go around to implement the project and to take care of patients. We are doing it but it's challenging at times.

P1 explained that the EHR implementation can make it easier on staff when they are short-staffed. P1 stated,

> Another thought for long-term for pulling in the affiliated piece (H2), if I have staffing shortage here (H1) . . . and H2 was doing okay with their staff levels, if we could borrow a colleague from them, like let's say the ICU for a shift or two, there a lot of opportunity, as long as, our electronic health record is the same and as long as our policy and procedures are the same. We are working on standardizing that as well. Those are some of those opportunities that they will not see right away but we can talk to those possibilities.

Having the same software can alleviate the barrier on being short staffed. P2 reinforced P1's statement that using the same software as their affiliated hospital (H2) is an effective strategy to alleviate the short-staffed barrier. P2 said the following:

> Many of our physicians travel to that hospital (H2). It works there so a lot of them have already used that system. They have used it, have experience with it, they have positive experience with it, and they are ready.

P3 followed with a similar conversation, "if our nurses needed to work over there or if their nurses needed to work over here, then there is one system. They can float back and forth and for providers too."

Janssen et al. (2021) showed that training and upskilling of all end-users of the EHR results in successful implementation. A lack of education and training can be a main barrier to implementation; support from experts can reduce fears of users (Busse, 2022). P2 shared training guides that assist staff in using the system. Documenting, receiving, and incorporating direct messages guides the physician through completing an electronic surgery scheduling form and how it's sent to Pre-Admission Screening and Scheduling. It is then placed on the scheduling grid in Resource Scheduling. A document, *Navigating Paragon Clinician Hub and OneContent*, guides team members through the login process to access patients' charts. Brightly colored tables are included to direct the team in the right direction on access notes and test results.

Correlation to the Literature

The findings in Theme 3 align with Porter et al.'s (2016) study in that project managers need to anticipate barriers that can occur in the project and to identify the

different needs adopters may require for a successful implementation. During an EMR implementation, barriers can include usability issues, time and resource constraints, suboptimal clinic workflows, patient-related factors, information access limitations, and insufficient clinician training, which can hinder the rollout (Murphy et al., 2019). Project managers need to address these barriers by providing effective training and evaluating the capability of their staff (Lv & Zhange, 2017). Well-established workflow processes should be in place to ensure a successful EMR implementation (Jung et al., 2020).

Correlation to the Conceptual Framework

Theme 3 provided insight into overcoming barriers and staff resistance to new processes. Theme 3 correlates with Rogers' (1962) diffusion of innovation theory as a framework to determine the barriers and benefits for caregivers and service providers to use this network. Adopters, communication channels, time, and social system make up four of the five essential components of the diffusion of innovation theory (Rogers, 2002). P1 described the way delays in the implementation resulted in trust barriers. All three participants described being short-staffed as a barrier to roll-out and stated the implementation as a possible solution. P1 discussed the organization's use of champions, which can assist with removing barriers.

Applications to Professional Practice

The main objective of this study was to determine successful strategies that hospital project managers use to adopt and implement EMR systems successfully to receive federal incentive payments. The findings identified strategies from a group of leaders' perspectives concerning the professional practice of business. The findings of the

study may assist with the development of appropriate strategies for hospital project managers. Once an understanding of the underlying meaning emerges, appropriate strategies might equip leaders with the skills to improve the implementation of EMR systems. The findings from the study might improve business practice by identifying appropriate strategies, leading to increased productivity and organizational competitiveness.

Effective change management strategy was essential in the success of the EMR implementation. Individuals that will be affected by the change should be involved in the change process; barriers can be created when effective communication has not taken place when introducing new technology (Woody, 2020). New workflows require layered decision support, order sets, and clinical pathways; clinical champions, superusers, and other implementation agencies need to be in place for support (Scott et al., 2019). Champions can establish buy-in, reduce resistance to change, and create a culture of readiness and acceptance, which leads to greater success with an implementation (Woody, 2020). The strategies identified from the findings can be used by the hospital project managers to equip them with the skills to improve the implementation of EMR systems.

The findings identified effective training method and strategies for overcoming barriers, such as staff resistance to new processes. Hospital project managers can use these strategies to increase productivity and organizational competitiveness. Janssen et al. (2021) showed that training and upskilling of all end-users of the EHR results in a

successful implementation. Adoption of an innovation, such as an EMR system, can increase revenue and help the organization stay competitive (Tetef, 2017).

Implications for Social Change

The results of this study can influence social change by improving the implementation of EMR systems and personal well-being. The implications for positive social change include the potential to reduce patients' time in the hospital. Less time spent in the hospital reduces expenses for patients and lost work time. Hospitals could use the federal incentive payments from the U.S. Government to improve the health care services delivered to members of the community.

Hospital project managers could take advantage of the social impact associated with the adoption and implementation of EMR systems, including obtaining clinical decision support, accuracy and legibility of medical records, patient safety and satisfaction, physician satisfaction, drug interaction warnings, critical data trend monitoring, and healthcare maintenance tasks (Cimino, 2013). Potential for improved patient care, coordination, and engagement of patients in their care are all benefits associated with patients having access to their healthcare records (Hsiao et al., 2013).

Recommendations for Action

To adopt and implement EMR systems successfully to receive federal incentive payments, hospital project managers need to determine successful strategies. Hospital project managers should have a comprehensive plan to prevent unnecessary costs. Project managers need to determine the time and resources that will be provided to adopters to implement the EMR system. Conduct competency tests and collect feedback from

adopters to ensure an understanding of the EMR system. Based on the results of the study, I recommend the following actions:

- Up-front communication between leaders and adopters. Outlining the stages of the implementation process to the staff creates a clear strategy resulting in staff being less resistance to adoption.
- Identify barriers and put strategies in place to overcome these obstacles.
- Develop training courses that best fit adopters, such as 1:1, group courses, videos, and other formats.
- Appoint champions to assist adopters and provide guidance during the process change.
- Rollout the implementation of an EMR system in phases, which would allow the staff sufficient time to learn different components of the system.
- Pause between phases to allow adopters to relay questions and concerns that are occurring.

The recommendations apply to various healthcare facilities and might assist with the implementation of an EMR system. Findings from this study could be of value to various leaders in the healthcare industry. Hospital project managers can use the strategies as a guide to successful implement an EMR system. I will disseminate the results of the study through business and scholarly journals, conferences, and healthcare leadership trainings.

Recommendations for Further Research

With the adoption of EMR systems becoming the new norm, unintended consequences can create new challenges and opportunities. To have continued success, hospital project managers need to be aware of new challenges and stay consistent with training new team members, updating their current EMR and providing regulatory audits. I suggest that healthcare leadership continues to conduct research studies on strategies to implement an EMR system. I suggest they make their findings of those studies available to other healthcare organizations to assist with a successful implementation process.

This study had limitations regarding the small sample size and the fact that the study was conducted with one organization, which prevents me from generalizing the findings to a larger population. I propose for other hospitals that have successfully implemented an EMR system to conduct a similar study. In doing further research, it may address the small sample size and allow for a variety in perception of different groups involved in the implementation process.

Reflections

This doctoral study involved an opportunity to determine successful strategies that hospital project managers use to adopt and implement an EMR system successfully to receive federal incentive payments. I have worked in the healthcare field for 14 years. I have implemented EMR systems in over 50 organizations in the long-term care setting. I selected this topic to conduct my study because it is something I am very passionate about and want to ensure the success of any organization trying to implement an EMR

system. I was concerned that my experience in implementing EMR systems would influence my perspective; therefore, I selected a hospital setting new to me.

To mitigate biases, I used member checking and reflexivity. I used member checking to avoid biases by allowing the participants to review my interpretation of their answers to interview questions to verify the accuracy of my interpretations. Member checking is a tool that researchers use to increase the credibility of the study by allowing the participants to confirm, adjust, or clarify any aspect of the data collected (Rakic et al., 2017). Researchers eliminate their biases by practicing researcher reflexivity, ensuring research transparency (O'Boyle, 2018). I engaged in reflexivity by reviewing my thoughts and decisions on the data collected and recording them to address my bias.

After conducting this study, I learned new barriers that other healthcare organizations not familiar to me encounter when trying to implement a new EMR system. With staff shortages affecting all areas of healthcare, I gained a first-hand look at the effect of these shortages on the implementation of a new EMR system. The use of social media to communicate with various organizational teams was a new process that I had not seen in my personal experience when implementing an EMR system in long-term care settings. I gained many new strategies throughout this process.

Conclusion

The findings from this qualitative single case study confirmed Rogers' (1962) diffusion of innovation theory, which was the conceptual framework for this study, which involves the dissemination of an innovation to all employees in the entire organization. The five essential components of the diffusion of innovation theory are (a) innovation, (b)

adopters, (c) communication channels, (d) time, and (e) social system (Rogers, 2002). Throughout the study, all five essential components were discussed. By using the identified successful strategies to adopt and implement an EMR system, hospital project managers can equip leaders with the skills to improve the implementation of EMR systems and improve business practice by increasing productivity and organizational competitiveness. Strategies that emerged from this study can help other healthcare leaders to adopt and implement an EMR systems successfully.

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Appendix A: Interview Protocol

Strategies to Implement an Electronic Medical Records System in Health Care Organizations

The purpose of this qualitative single case study is to explore strategies that hospital project managers use to adopt and implement EMR systems successfully to receive federal incentive payments.

Interviewee: _____ Location: _____

Date: _____ Time: _____

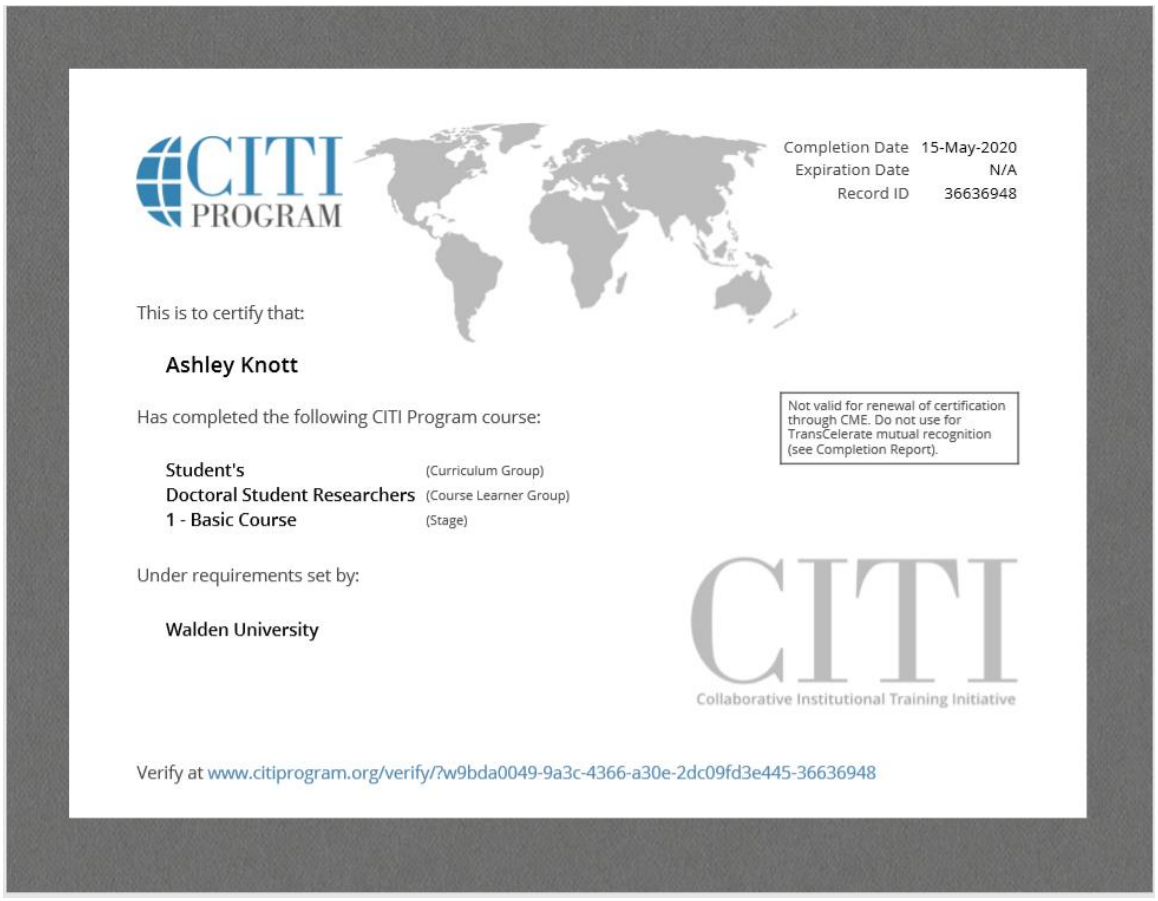
Notes:

1. Greet interviewee and introduce yourself.
2. Provide overview of the study and indicate the usefulness of the outcome.
3. Obtain signed consent form. Offer to answer any questions that interviewee may have.
4. Remind interviewee about their volunteer efforts to participate in the study.
5. Remind interviewee about recording the interview and start the recording.
6. Start the interview by recording interviewee's pre-assigned coded name, date, time and location.
7. Start asking interview questions. Allow enough time to answer those questions.
8. Listen carefully to interviewee. Ask probing and follow-up questions, if needed.
9. At the end of the interview, thank interviewee for their participation and time.
10. Provide participant your contact information if they have any questions.

Appendix B: Interview Questions

1. What strategies have you used to adopt and implement EMR systems successfully?
2. What was the process to determine which EMR system to use in your organization?
3. How was the staff made aware of the change in the organization prior to the initial training of the EMR system?
4. How did you assess the effectiveness of the EMR from the users' perspective, including the clinical staff?
5. What training techniques did you use to train new clinical staff members for using the EMR system?
6. What strategies are in place to ensure the clinical staff members are using the EMR system accurately?
7. What were the key barriers to implementing the EMR system?
8. How did your organization address the key barriers to implementing the EMR system?
9. What additional information would you add regarding your experience in adopting and implementing the EMR system successfully that we have not discussed so far?

Appendix C: CITI Certificate



CITI PROGRAM

Completion Date 15-May-2020
Expiration Date N/A
Record ID 36636948

This is to certify that:

Ashley Knott

Has completed the following CITI Program course:

Not valid for renewal of certification through CME. Do not use for TransCelerate mutual recognition (see Completion Report).

Student's (Curriculum Group)
Doctoral Student Researchers (Course Learner Group)
1 - Basic Course (Stage)

Under requirements set by:

Walden University

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w9bda0049-9a3c-4366-a30e-2dc09fd3e445-36636948