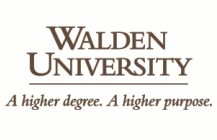

2018

Successful Strategies for Implementing EMR Systems in Hospitals

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This is to certify that the doctoral study by

Marcia Nicholas

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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2018

Abstract

Successful Strategies for Implementing EMR Systems in Hospitals

by

Marcia Nicholas

MBA, Davenport University, 2005

BSBA, Western Carolina University, 1990

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

Walden University

June 2018

Abstract

Some hospital leaders are ineffective in implementing the electronic medical record (EMR) systems in the hospitals. The purpose of this multiple case study was to explore strategies hospital leaders use to successfully implement EMR systems. The target population consisted of hospital leaders and healthcare professionals from two hospitals who have successfully implemented EMR systems. The conceptual framework of this research study was Kotter's 8-stage process for leading change, building on the model of an effective change management method. Data were collected from 5 interviewed participants and company documents related to strategies regarding the EMR system implementation. The results of reviewing open-ended interview questions and archived documents were analyzed using codes and themes to facilitate triangulation. Three primary themes were developed from the coded data: (a) strategies hospital leaders use to implement the EMR system, (b) strategies hospital leaders use to achieve quality and best practice, and (c) strategies hospital leaders use to manage change and resistance to change. Results revealed 4 steps for successful implementation: (1) creating a vision, (2) communicating the vision, (3) establishing strong leadership, and (4) consolidating gains. Utilizing the successful strategies hospital leaders use to implement the EMR systems could produce quality patient care, efficiencies in hospital operations, and reduced organizational operation cost. The findings could effect positive social change through delivery of quality health and patient care that results in community cost benefits and healthier patient lifestyles.

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Dedication

First, I give God thanks for helping me to make it through this process. This study is dedicated in loving memory to my parents Vernal Nicholas and Gloria Nicholas who has taught me to strive for the highest and work hard to achieve my goals.

Acknowledgments

I thank my chair Dr. Jill Murray without whose guidance, help, and encouragement I would not be able to complete this doctoral study. I would also like to acknowledge the doctoral team my second chair Dr. Patsy Kasen, URR, Dr. Rocky Dwyer, and CAO, Dr. Eric Riedel. I acknowledge and thank the participants who participated in my interview, without whose help I would not be able to complete my study. Special thanks to my family, friends, and co-workers who have prayed for me, supported, and encouraged me along the way. Thanks to my peers from 8100 and 9000 class, their sharing and contributions have helped me through this successful journey. Thank you.

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Section 1: Foundation of the Study

The advancement of information communication technology for the past 20 years has facilitated the emerging healthcare innovations improvement in decision-making, quality healthcare, communication, and data management (Biruk, Yilma, Andualem, & Tilahun, 2014). The electronic medical record (EMR) is a transformational tool that involves significant change within the organization for successful implementation (Neumeier, 2013). The EMR systems adoption to improve healthcare quality in the United States has been low because of technical barriers and inappropriate design elements (Han & Lopp, 2013). Challenges regarding the low EMR implementation include resources and organizational readiness for change (Saleh, Khodor, Alameddine, & Baroud, 2016). Other barriers involved the resistance of healthcare professionals, attitude, and knowledge, which hinder the success of EMR implementation (Biruk et al., 2014). Approximately 70% of the time leaders have difficulty to implement or sustain organizational change (Titzer & Swenty, 2014). In this study, I explored successful strategies health care leaders use to implement EMR systems in hospitals.

Background of the Problem

In the early 2000s, federal legislators recommended the use of EMR information system infrastructure in hospitals to improve the overall financial stability and transparency of the health care industry (Smith, Bradley, Bichescu, & Tremblay, 2013). The concept of healthcare reform embodied in the Affordable Care Act (ACA) promotes the continuous development of electronic health records (EHRs) to improve efficiencies in the quality of healthcare by the advancement of healthcare information technology

(HIT) (Freymann-Fontenot, 2013). Congress passed the Health Information Technology for Economic and Clinical Health (HITECH) Act of 2009 to promote the use of EMR and HIT to facilitate technological innovativeness and process improvements in the healthcare industry (Smith et al., 2013).

The ACA goals include reducing waste in the system, limiting hospital readmissions, cost-efficient effectiveness research, effective treatment protocols, and encouraging the development of Accountable Care Organizations (ACOs) (Freymann-Fontenot, 2013). In 2015, hospital failure to comply with the HITECH Act of 2009 to promote the use of EMR obtain financial penalties of reduced fee from the Centers for Medicare and Medicaid (Smith et al., 2013). The benefits of EMR include the process to simplify the management of patient information, lower medical information management cost, and increase productivity (Bain, 2015). Strategically integrating the EMR system in hospitals requires an extensive implementation of change initiatives. Kash, Spaulding, Johnson, and Gamm (2014) explained the three primary factors for successful change implementation as (a) culture and values, (b) business processes, and (c) people and engagement. The intent of this study was to provide an awareness of the strategies hospital leaders could use to successfully implement EMR systems.

Problem Statement

The efficiency and effectiveness of healthcare providers can be improved using EMR systems (Alshameri, Hockenberry, & Doll, 2014). By 2014, only 76% of the United States hospital leaders initiated a basic EMR to increase patient safety and quality of care (Charles, Gabriel, & Furukawa, 2015). The general business problem is that some

hospital leaders are ineffective in implementing EMR systems in the hospitals. The specific business problem is that some hospital leaders lack strategies to successfully implement EMR systems.

Purpose Statement

The purpose of this qualitative multiple case study was to explore strategies hospital leaders use to successfully implement EMR systems. The target population consisted of hospital leaders and healthcare professionals from two hospitals who have successfully implemented EMR systems. The implication for positive social change includes the opportunity to (a) provide awareness to the advantages of EMR systems, (b) increase communication between patients and healthcare providers, and (c) increase safety and security of patients' information. Hospital staff using EMR systems could reduce healthcare cost while providing improved healthcare to patients (Apfeld, Jahangir, & Sethi, 2013).

Nature of the Study

The qualitative researcher explores data from specific participants and their personal opinions and viewpoints, while the quantitative researcher tests a hypothesis and examines data derived from numbers and statistics (McCusker & Gunaydin, 2015). The mixed method approach is a combination of both the qualitative and quantitative methods where the researcher capitalizes on the strengths of the qualitative and quantitative methods combined in a single study (Annansingh & Howell, 2016; Yin, 2014). The quantitative and mixed methods do not apply in my research because I am not testing a hypothesis or a theory, nor am I collecting numeric data for statistical hypotheses testing.

The qualitative method is appropriate for this research because I used data collection processes to conduct a comprehensive review, which will include open-ended questions and archived data to explore the strategies hospital leaders use to successfully implement EMR systems in hospitals.

There are five possible qualitative research designs I considered to address the specific business problem: (a) narrative research, (b) phenomenological, (c) grounded theory, (d) ethnography, and (e) case study (Yin, 2014). In a narrative design, the researcher explores the lives of single individuals (Dixon, 2015). The narrative design is not appropriate for my study because I am not considering the stories of the lives of individuals. The researcher using the phenomenological design explores the participants' perceptions of the meaning of experiencing a common phenomenon (Wilson, 2015). The phenomenological design is not a suitable choice because I am not exploring the participants lived experiences with a phenomenon. In the grounded theory, the researcher develops a theory of the participants' experience, phenomenon, or an event (Kruth, 2015). The grounded theory is not an appropriate design because I am not developing a theory for explaining my research phenomenon. Ethnographers explore shared cultures and patterns of behavior or attitudes within a culture (Kruth, 2015). I do not intend to explore the cultures and pattern of behavior of my participants; therefore, the ethnographic design is not considered for this study. In the case study design, the researchers describe a specific event, activity, or problem by using a single case or multiple cases in a real-world situation (Turner & Danks, 2014). The purpose of this study was to explore strategies hospital leaders in metropolitan Detroit use to successfully

implement EMR systems. Using a case study design is appropriate for the study because I will explore detailed, real-life information from multiple cases while using different data types to discover specific strategies used by hospitals to successfully implement EMR systems.

Research Question

The overarching research question for this proposed study was: What strategies do hospital leaders use to implement EMR systems successfully?

Interview Questions

1. Please explain your role in the implementation of the EMR system.
2. Please describe the strategy you used to communicate the implementation process of the EMR system to the employees.
3. Please explain the strategies you used to implement the EMR system.
4. Please explain the methods used to assess the effectiveness of the strategies and the outcome.
5. Please describe the challenges you encountered while implementing the strategies for developing and launching the EMR system.
6. Please explain how you overcame the challenges to the strategies for implementing the EMR system.
7. Please describe the strategies used to address employee concerns before the implementation of the EMR system.
8. Please describe any strategies used to develop any changes in work processes since the implementation of the EMR system.
9. Please describe any organizational improvements and patient outcomes since the implementation of the EMR system.
10. How do you evaluate and assess the effectiveness of your EMR implementation strategies?

11. Please describe any additional information you would like to share regarding strategies used to implement the EMR system.

Conceptual Framework

Boston and Gregory (2015) explained that in qualitative studies, the conceptual framework illustrates which ideas from the literature ground the research. The conceptual framework of this research study is Kotter's eight-stage process for leading change, building on the model of an efficient change management method (Kotter, 1996). According to Kotter (2007), to create a successful implementation of change the process goes through a series of eight phases which include (a) creating a sense of urgency regarding the need for change, (b) creating a guiding coalition, (c) develop a vision and strategy, (d) communicate the change vision, (e) empower employees, (f) create short-term wins, (g) combine gains and make more change, and (h) attach new approaches in the corporate culture. Neumeier (2013) combined Kotter's 8-steps in three phases creating a climate for change, engaging and enabling the organization, and implementing and sustaining the change.

With the rise of the global market, Murray (2013) explained that Kotter's model had one new proposal that traditional system and a permanent network of volunteer change agents should share governance to create agility during the change. Kotter's model to conceptualize the change process is expected to be relevant to my study because implementing an EMR system within the organization involves organizational change. Neumeier (2013) explained the effectiveness of change management to the successful implementation of an EMR system as maximizing ability, behavior change, and achieving results.

Operational Definitions

The definitions below provided clarification of specific words and terms used in the study.

Change: A recognizable difference in the structure of things and identified in Lewin's three stage process as initiation (unfreeze), implementation (move), and outcome (re-freeze) where the organization creates the new goals and move the process through the translation to the new state (Anders & Cassidy, 2014; Osentoski, 2015).

Culture: The culture within the organization characterized by the shared assumptions that include individuality, risk taking, power structures, values, and innovation (Ben-Zion, Pliskin, & Fink, 2014).

EMR: The electronic medical record is the electronic record of patient health information that automates and streamline the clinician's workflow and is used by physicians to improve the quality of care and physician productivity while decreasing medication errors (Ben-Zion et al., 2014; Heart, Ben-Assuli, & Shabtai, 2017).

EMR system: An internal organizational system that includes patient charts, statistics, and reporting, computerized physician order entry (CPOE), clinical decision-making support system, document and image management, management of internal and external clinical papers and notes, and patient portal (Heart et al., 2017).

Organization Structure: According to Ben-Zion, Pliskin, and Fink (2014) the organization structure is characterized by its makeup such as decentralized or centralized, the reward system, and the reporting relationship.

Organizational change: The process to move from one stage to another desirable step that is initiated by leadership where the intentions and actions of the leaders affect the outcomes (Anders & Cassidy, 2014; Espedal, 2016).

Transformation: Kotter (2007) defined the eight steps of transformation as a sense of urgency, guiding coalition, vision, communicating the vision, enabling others to act on the vision, establishing short-term wins, consolidating improvements, and creating new approaches.

Assumptions, Limitations, and Delimitations

Assumptions

The researcher's assumptions of the study shape the research (Kirkwood & Price, 2013). Research assumptions defined as truths (Dean, 2014). I made the following assumptions (a) that the participants answer to the interview questions are truthful and accurate, (b) I will be unbiased, and (c) data transcription will accurately capture the participants' response. Another assumption is that the participants lived experiences could contribute to the development of effective strategies use by hospital leaders to implement EMR systems**.**

Limitations

The limitations of the study focus on the internal and external validity of the research and identify the potential weaknesses of the study (Connelly, 2013; Dean, 2014). A limitation of this study is that this research is a multiple case study and therefore the information regarding EMR implementation strategies cannot be generalized for other hospitals. Another limitation is the data for this study is from two hospitals where

participants shared their EMR strategic implementation processes; therefore, the data cannot be transferred and used to represent other hospitals strategic EMR implementation experiences. My reaction during the interview process could affect the participants' response and could pose as a limitation to the study. Another limitation could be my misunderstandings and biases during the interview process which could affect the integrity of the results.

Delimitations

Delimitations define the scope of the research design (Dean, 2014). The extent of this study was the strategies used by hospital leaders to implement the EMR system in two hospitals located in the Metro Detroit area of Michigan.

Significance of the Study

The United States government requires that physicians adopt the EMR system nationwide; thus, changing the organizational environment (Schwarz & Schwarz, 2014). The successful implementation of change within the organization could be a determinant of a business short-term or long-term success (Appelbaum, Habashy, Malo, & Shafiq, 2012). The results from this study may be valuable to bring awareness to hospital leaders to use the strategies identified to successfully implement EMR systems within the healthcare facilities.

Contribution to Business Practice

Neumeier (2013) explained that an EMR system can positively impact patient safety and key issues such as efficient retrieval and access to patient data, prescription records, and laboratory results. Hospital leaders' use of EMR system benefits patient

care, communication, patient well-being, and safety. The implementations of successful EMR strategies could provide a basis for identifying standardize business practices within the healthcare industry (Neumeier, 2013).

Implications for Social Change

This study could have implications for social change where potential hospital leaders could provide awareness to the advantages of the EMR systems, security and safety of patients' information, and improved patients' health. The adoption of the EMR system could prevent medical errors, provide easy access to patients' information, and alleviate the risk of drug overdoses and complications with combined prescriptions usage (Neumeier, 2013).

A Review of the Professional and Academic Literature

The purpose of this qualitative, multiple case study design was to explore successful strategies hospital leaders use to implement EMR systems. I used Kotter's (1996) eight-stage change model as the conceptual framework for the study. In the literature review, I explored Kotter's model as it relates to EMR systems implementation and organizational change. Kotter's change model is useful as an institution's action to develop successful strategies to implement change in healthcare.

Kotter (1996) examined mistakes organization leaders make when implementing change, the problems and strategies to the change, and the transformation. Kotter's (1996) eight-stage change process is a relevant model for examining the EMR implementation as the stages include barriers and strategies to organizational change. Kotter (2007) identified eight reasons change efforts fail as first not establishing a sense

of urgency and the second reason involves not having a guiding coalition. The third cause of failure is the lack of vision, and the fourth is poor communication of the vision. The established fifth problem is not eliminating obstacles to the new vision, while the sixth is not planning for short-term wins. Kotter's seventh reason for change failure is celebrating too soon, and the eighth cause is not establishing changes in the corporation's culture.

Information technology (IT) changes in healthcare are relevant to the improvement and advancement of the industry. Kotter's (1996) eight-stage model for change is essential for this study as an aid to understanding (a) the process of change, (b) change management concept, and (c) a point of reference for the data analysis from the interviews on successful strategies used to implement EMR systems. Kotter's model used to explore information on the role of the leader during change processes and the implementation strategies of EMR systems.

The primary databases I used for the research were ERIC, EBSCO, ProQuest, SAGE, PsycINFO, Google Scholar, and Education Research Complete. The key search words included *EMR systems, EMR, medical record technology, change management, electronic health record implementation, healthcare leadership, Kotter's eight-stage process for leading change, barriers to EMR, EMR adoption,* and *transformation leadership.* I used search words to acquire literature to develop the conceptual framework where critical review of the extant literature was analyzed.

Over 85% of the peer reviewed articles, publications, and journals from 2014 to 2018 are within 5 years of the study; however, some of the articles within the literature

review are more than 5 years because of the relevance of the articles. The analysis of the literature review primary section included the conceptual framework of Kotter's change model, organizational change management, leadership change strategies in healthcare and implementing and evaluating EMR transformations. Other subsections of the literature review are implementing strategies for EMR changes, and leadership of EMR and patient trust. In this literature review, the use of Kotter's change model applied to the successful implementation of EMR systems in the healthcare industry.

Conceptual Framework: Kotter's Change Management Model

Kotter's (1996) eight-stage change model underpinned the framework of this study as Kotter identified both barriers and strategies to the change implementation process. Kotter described organizational change as a holistic process of eight-stages that organizations could use to avoid the pitfalls in implementing change and achieve success. According to Kotter (2007), the change process was time-consuming and incorporates a series of sequential phases. In Kotter's (1996) study leading change, the author suggested the eight possible change processes organizations should use to implement change as (a) creating urgency and coalition, (b) establishing a vision and communicating the vision, and (c) removing obstacles to change and creating short-wins. The last two strategies include gaining momentum and anchoring the change in the organizational culture. I presented Kotter's change model as an active tool in the influence of effective change management regarding EMR implementation.

Change management refers to the ideal state of an organization (Kumah, Ankomah, & Antwi, 2016). Kumah et al. suggested that a strategically led change

process improves quality, standards, and patient outcome. Al-Haddad and Kotnour (2015) explained that organizations should plan for change as organizational change affects the internal structure, processes, strategy, culture, and employee's jobs and attitudes. Organizations within the healthcare environment should be willing to change, adapt and evolve to maintain competitive advantage (Longenecker & Longenecker, 2014).

The employees implementing the change within the organization should possess distinctive roles during the change process (Kumah et al., 2016). According to Kotter (1996), to speed up the process of change application require eight accelerators. Kotter (2012) defined the accelerators for the operation of organizational change strategy systems as concurrent and always working, incorporating many individuals in the organization to form a voluntary army, and requiring a flexible and agile network. Kotter (1996) eight stages of change also represent barriers to successful implementation of change when leaders do not incorporate the processes within the organization.

An essential phase of the change process incorporates the communication of the urgency for the change by the leaders. The first stage of the change process requires the business to establish a sense of urgency (Kotter, 1996). Creating a sense of awareness for the organizational change will gain cooperation from the employees and guide the change effort (Pollack & Pollack, 2015). The failure to create urgency at the beginning of a business transformation would result in employees becoming defensive, create resistance to change, and cling to the status quo (Kotter, 1996). Leaders fail to achieve their

objectives when managers and employees are complacent and do not give the extra effort that is essential for communicating the change (Kotter, 1996).

Effective communication helps to reduce resistance to change during the change process (Akan, ER Ülker, & Ünsar, 2016). The resistance to change could complicate the implementation process (Nilsen, Dugstad, Eide, Gullslett, & Eide, 2016). The five areas of resistance to change include a lack of awareness, fear of job loss, fear of the unknown and comfort with the status quo, organizational history and culture, and opposition to new technologies, requirements, and processes (Basu, 2015). According to Nilsen et al. (2016), resistance to change is inevitable and can be seen at the employees, organizational, and institutional level.

Longenecker and Longenecker (2014) revealed that most change initiatives in healthcare fail because of poorly planned implementation and an aggressive timeframe. The second transformation change strategy involves a guiding coalition (Kotter, 1996). In the second stage, Kotter identified the group leading the change process. According to Kotter, the effectiveness of a powerful coalition requires leaders with formal titles, information and expertise, relationships and reputation, and the ability to lead. Kotter (1996) emphasized that the team participating in the change transformation should include members such as the president, division general manager, department head, plus other lower-line employees committed to improving performance. The guiding team should be knowledgeable, credible, influential, and possessing the skills necessary to mobilize change (Neumeier, 2013).

Change management engages and prepares employees for transformation (Neumeier, 2013). When implementing new change processes, the organization support is necessary to ensure its employee's commitment, awareness, cooperation, and attitude (Johannsdottir, Olafsson, & Davidsdottir, 2015). Streamlining the change process requires group leaders or teams to plan and guide individuals for the initiating of the change (Johannsdottir et al., 2015).

Understanding the vision, according to Kotter (1996), is the third process when implementing change as the vision illuminates the objectives for the change. The vision defines the future strategic direction of the organization (Jordan, Werner, & Venter, 2015). Creating the vision is time-consuming (Klein, 2013). Kotter explained that a realistic vision helps to align, direct, and inspire people while eliminating incompatible and confusing projects. The vision contributes to guiding decision-making while establishing a clear statement of direction and should not be confused with plans and programs (Pollack & Pollack, 2015). This realistic vision should be communicable, flexible, focused, desirable, feasible, and imaginable while expressing the goal in a manner that is achievable and straightforward (Klein, 2013).

Kotter's (1996) fourth step described the effectiveness of a well-communicated vision with both words and deeds. Managers underestimating the amount of communication required to convey the change could hamper the change process (Pollack & Pollack, 2015). Under-communicating the vision could result in employees misunderstanding the new approach, managers become silent and not motivate employees for the change, and employees' behavior contrary to the vision (Kotter, 1996).

Communicating the vision using multiple methods such as using clear and uncomplicated languages and images should be used to communicate the vision (Kotter, 1996). Leaders should establish an open channel for employees to give feedback with continued dialog when communicating the vision (Kotter & Schlesinger, 2008).

Obstacles are usually aspects of the change process. Kotter in his fifth process for change described the effects of obstacles that block the new vision. Trying to encourage the support and participation of employees during the change process can be challenging (Klein, 2013). An example of change barriers included the organizational structure, small job categories, compensation or performance appraisal systems, and supervisor's refusal to adapt to new circumstances (Kotter, 1996). Other obstacles include healthcare processes and activities such as business strategies and information flow that differs from hospital to hospital because of available resources and culture (Iannone, Lambiase, Miranda, Riemma, & Sarno, 2013). Sometimes employees' compensation or appraisals could influence employees to choose their interest instead of the company's vision (Kotter, 1996; Kotter & Schlesinger, 2008). To avoid confronting obstacles, talented employees could undermine change and disempower employees (Kotter & Schlesinger, 2008).

The organizational readiness for change takes new technology and knowledge to engage employees and clients (Guerrero & Kim, 2013). Implementing change requires patience (Klein, 2013); therefore, Kotter's sixth process describes the short-term wins necessary for successful transformation. Leaders need to motivate employees as they initiate the change because leaders are the focal point to initiating, implementing, and

evaluating the change process (Guerrero & Kim, 2013). Short-term wins provide credibility and encouragement to the change management process (Klein, 2013). Kotter recommends creating short-term wins to increase momentum while creating performance improvements by rewarding and recognizing employees. Establishing short-term wins can also reduce complacency and encourage detailed analytical thinking to clarify or revise transformational visions (Kotter, 1996).

Celebrating creates motivation during the change process; however, the premature celebration can stunt the transformation change (Kotter, 1996). Kotter's seventh change process reminds management not to celebrate change prematurely. According to Kotter and Schlesinger (2008), most change initiative takes longer than anticipated, cost more than expected, and sometimes kill morale. The change adopted in the culture of the entire company takes 3 to 10 years before the celebration of victory (Kotter, 1996). Leadership should, therefore, maintain momentum and motivation of employees until the completed transformation of the change process (Klein, 2013).

Willis et al. (2016) emphasized that the culture of the organization also impacts the change process. The sustainability of change requires the anchoring of new approaches in the culture of the organization (Klein, 2013). Culture relates to occupational groups shared values, beliefs, and assumptions (Willis et al., 2016). Culture also influences how employees take the risk, manage change, and solve problems (Mouhamadou, Jeanie, & Rosa, 2017). Organizations and employees are affected by cultural groups or subcultures and therefore should be identified and addressed during change (Willis et al., 2016). Kotter's model places behavioral change before culture.

The successful implementation of change requires the embedded change in the culture throughout the change process (Farkas, 2013). The eighth-change process includes anchoring the change in the corporate culture (Kotter, 1996). In the model, Kotter incorporated a cultural assessment into the organizational culture, which could enhance a positive change transformation.

The organizational change process requires employees to develop a new behavior and a new approach (Kotter, 1996). Kotter expressed that the new behavior should be grounded in social norms and shared values of the corporate body. When leaders and employees accept the beliefs, core values, and behavior of the organization a strong culture emerges (Mouhamadou, Jeanie, & Rosa, 2017). The two factors in anchoring the new approach include the actions and attitudes of individuals to improve performance (Kotter, 1996). According to Kotter, a deterrent to anchoring change could occur because of the retirement of the Chief Executive Officer (CEO) as their successors could be resistors to the implemented change. Anchoring the new change requires continuation and consistency in leadership (Klein, 2013).

Other change theorist improved on Kotter's model to include the organizational culture. Kash et al. (2014) expanded Kotter's eight stage process by adding three additional factors for implementing change to include people and engagement, culture and values, and business processes. Change embedded into the organizational culture is necessary, so employees are not tempted to revert to the old process (Neumeier, 2013). EMR implementation readiness includes organizational culture, operational and technical readiness, and management and leadership (Ghazisaeidi, Ahmadi, Sadoughi, & Safdari,

2014). The alignment of culture and values combined with effective communication and human resource functions are essential to the achievement of change initiatives (Kash et al., 2014).

The process of system transformation needs purposeful and directed change management (Parston et al., 2015). The leaders of change can communicate the information and vision effectively to implement successful change (Ghazisaeidi et al., 2014). Management should also engage the users and provide resources to endorse corporate strategies for change (Goldstein et al., 2014).

Longenecker and Longenecker (2014) stated that leaders demonstrate competence and character to achieve improvements during the change. Successful leadership depends on the leader's ability to effectively manage the changes related to both processes and people (Basu, 2015). Quality leadership and management coupled with a multi-step process can improve transformation change and reduce cost when the ratio of leadership is 70% to 90% and management 10% to 30% (Kotter, 1996). The probability of success increases when leadership is actively involved in the change process (Kotter, 2012).

Similarities exist between leadership and management processes with some researchers using the terms interchangeably. Kotter (1996) described the difference between leadership and management as semantics where leaders give directions, motivate, inspire, and align people with the vision, while managers organize staff, plan, budget, control, and problem-solving. Leadership creates change while management produces orderly results based on experience within the organization (Edwards,

Schedlitzki, Turnbull, & Gill, 2015). Both leaders and managers are essential to create and sustain long-term change improvement (Kotter, 1996).

Introducing change is challenging (Lachman, Runnacles, & Dudley, 2015). Resistors to change will exist most of the time during the transformation process as people are hesitant to start a new process and approach and prefer to maintain the status quo (Kotter, 2007). The primary reasons people resist change include (a) unwilling to lose something of value, (b) misunderstanding the change and its complications, (c) possessing a lower tolerance for change, and (d) the feeling that change does not make sense for the organization (Kotter & Schlesinger, 2008). Other barriers that cripple change include fear of the unknown, lack of trust and teamwork, arrogant attitudes, lack of leadership in middle management, cultures, politics, and bureaucracy (Kotter, 1996).

Organizational Change Management

Situations that contribute to organizational change in the workplace include funding opportunities, legislation reform in healthcare, and government regulations (Guerrero & Kim, 2013). Organizational change implementation is the alteration of behavior or attitude by an individual in response to another person's actions (Battilana & Casciaro, 2012). The need for organizational change in the workplace increased because of global presence, new government regulations, new products, technology advancement, and increased competition (Kotter & Schlesinger, 2008). Therefore, the organizational change process affects the emotions of the employee.

The change process includes employees' adoption to something new. According to Kotter (2007), moving people out of their comfort zone when initiating change is

difficult. Lewin (1951), one of the pioneers to address change, identified change transformation in three steps (a) unfreezing, (b) moving, and (c) refreezing. For change to be successful; the organization should first unfreeze when the change is needed, move when the change commences, and refreeze with a stable equilibrium (Lewin, 1951).

Change theorists such as Kanter, Stein, and Jick's (1992) 10 commandments for executing change, Rogers (2003) five stages of planned change, and Luecke's (2003) seven steps in the comprehensive literature review expanded on the change theory of Lewin's (1951) three stages change model. Kanter et al. (1992) described the 10 commandments for executing change as an organization analysis, creation of vision and direction, separate from the past, create urgency, support from the leader, gather support, implement the plan, enable supportive action, communicate change process, and reinforce and institutionalize change. Kotter's (1996) eight-step model is a modification of Kanter et al. (1992) 10 commandments change model.

Rogers (2003) identified the five stages of planned change as awareness, interest, evaluation, trial, and adoption. Luecke (2003) defined the seven steps change process as identifying the need for change, develop a shared vision, analyze alternatives, develop the plan, and strategies, implement the plan, manage the transition, and evaluate the results. The common theme of each theory presents the concept that successful organizational change should demonstrate urgency, generate a vision, and implement the plan while garnering leadership support and direction (Mitchell, 2013). However, no one theory can adequately achieve a standard solution to organizational change (Pollack & Pollack,

2015). Organizational change differs between businesses because of the distinctiveness of each company (Pollack & Pollack, 2015).

Change occurs on a regular basis in businesses. Organizations experience changes because of the advancement in technology, global and environment changes, competitive environment, and workforce changes (Akan et al., 2016). Researchers defined change management as the alteration of the organization's present business activities into a new style to cope with the different changes (Hashim, 2013). These new changes, according to Hashim, could be in the organization structure, technology, employee, administration or management, and production technique. The result of the change process initiates the organization adoption of the activities for the new change process (Hashim, 2013).

The American government, stakeholders, and consumers demand quality patient care and medical advancement in the healthcare industry (Neumeier, 2013). The push across the United States to implement the EMR systems within the healthcare industry experienced limited success because of both organization and individual barriers (Rizer, Kaufman, Sieck, Hefner, & McAlearney, 2015). Change is challenging because of the different variable that impact change such as poorly developed plans, under motivated staff, ineffective communication, and poor leadership (Mitchell, 2013). Employees resist change because of sociological, economic, psychological, and rational reasons while obstructing the use of organizational resources (Akan et al., 2016).

Rizer et al. (2015) noted that the EMR implementation presents additional challenges because of the diverse mix of specialty providers and practice styles. The

challenges involve the group training of end users, planning and logistical arrangements of staff, the timing of implementation, and the flexibility of the implementation team approach to the change process (Rizer et al., 2015). The perceived barriers to EMR adoption include a lack of knowledge of digital alternative, lack of motivation to change, and lack of knowledge of consequences (Auguste, 2013). Other barriers to EMR implementation include concerns about the introduction of new errors, financial constraints, loss of productivity during the initial implementation phase, insufficient technical training, and the reluctance to change practice patterns (Qiao, Asan, & Montague, 2015; Rizer et al., 2015).

Using Kotter's eight-step model for implementing change is a good reference for the healthcare industry as the process deals with barriers that could hinder effective change implementation. According to Dias and Escoval (2013), the healthcare pathway requires an extensive integration and coordination processes during the change. Leadership is essential to the process of organizational change and, over time, a lack of leadership support increases change resistance (Jones & Van de Ven, 2016).

Healthcare Change Success Factors

To achieve successful change implementation of the EMR systems, the healthcare leader should process significant investments, changes in the workflow, and technical complexity (Blavin, Ramos, Shah, & Devers, 2013). Other healthcare success factors include effective communications that create a forum which disseminates new information and establishes a process for accountability (O'Keefe, 2017). O'Keefe also suggested that open communications with the head of the organization should involve all

stakeholders such as physicians, employees, board members, the community, volunteers, and the media. According to Blavin et al. (2013), the success factors for EMR implementation require strategic planning where the leaders identify the organization needs, defines the implementation strategy, and obtain staff buy-in.

Planning from the organization perspective should include consideration for technical needs, the organizational culture and environment, and partnership with external stakeholders (Blavin et al., 2013). The organization planned change to establish the growth opportunity for the company (Carlson, Harris, & McLeskey, 2013). Organizations should plan for changes in the workflow, hardware infrastructure, software customization, and usability throughout the implementation process (Blavin et al., 2013).

Success factors related to change implementation in the healthcare industry incorporates multiple strategic initiatives (Al-Balushi et al., 2014). The success of change initiatives requires change strategies to align with the organization culture (Schuller, Kash, & Gamm, 2015). Kash et al. (2014) interviewed 61 healthcare leaders to identify the success factors connected to different change initiatives. Kash et al. further revealed the top three success factors as culture and values, business processes, and people and engagement. Service quality, client satisfaction, and access to information are selective success factors to the healthcare industry (Kash et al., 2014).

Employee training is another method used to alter processes and create new organizational systems and workflow (Schuller et al., 2015). Blavin et al. (2013) explained that training should be given to all staff to prevent costly setbacks, productivity losses, and negative workflow. The best practices for training include the committed

organizational investment, assessment of users' skills and training needs, training support throughout the implementation process, and retraining for EMR optimization (Blavin et al., 2013). According to Best et al. (2012), change requires continual refinement because of its open process. Repetitive patterns are necessary to generate change for an ongoing performance (Schuller et al., 2015). The leaders in the organization should frequently modify and maintain the EMR technology to meet the institution's performance goals (Blavin et al., 2013).

The organization needs resources to fulfill the mission and achieve its goals for successful change. The organization's objective during change implementation is to direct the group towards the desired outcome (Kash et al., 2014). Lean implementation requires the organization management team to focus on the sociocultural factors such as effective leadership and culture (Stelson, Hille, Eseonu, & Doolen, 2017). Factors relating to change initiatives success includes communication, cultural alignment, access to information, and focus on patient satisfaction and safety (Schuller et al., 2015). The healthcare stakeholders are responsible for fulfillment of the new change process (Stelson et al., 2017).

Healthcare organization leaders need the necessary resources to initiate the change process for successful implementation (Kash et al., 2014). The organization resources can be internal or external, and the strategic decision-making regarding the deployment of the resources could affect the strategic goals of the business (Kash et al., 2014; Schuller et al., 2015). Internal stakeholder issues such as satisfaction and well-being, employee perception and attitude, and group norms and policies can affect change

implementation (Stelson et al., 2017). The quality and efficiency gained from organizations implementing effective strategies require investments and deployment of the primary management resources (Kash et al., 2014). Successful strategy development in the healthcare organization requires internal processes and human resources deployment of talented employees that will drive strategic decision-making, create competitive advantages, and sustainability for the organization change initiatives (Kash et al., 2014; Schuller et al., 2015).

Leadership Change Strategies in Healthcare

Kotter's process to organizational change emphasized strong leadership to effect change (Pollack & Pollack, 2015). Leadership creates clarity and articulates the company's desired outcome during the healthcare EMR transformation process (Morrissey, 2014). Effective leadership uses charisma and influence to develop enthusiasm and commitment among subordinates (Hayati, Charkhabi, & Naami, 2014). The partnership of a leader's style and employees working together for a mutual goal usually result in improved patient care, reduced staff turnover, and fewer medical errors (McRae, 2017). Leadership could also facilitate organization structural development in three areas (a) evident-based practice outcomes in strategic plan (b) mentors support, and (c) advocating for educational resources (Hauck, Winsett, & Kuric, 2013). Moreover, Hauck et al. suggested the support from leadership as instrumental to organizational readiness and success during the change.

The role of the leader fosters the organizational change process. The strengths and weaknesses of the leader are essential to the success of the change project (Mitchell,

2013). The transformational leader leads by example while motivating the self-growth of their employees (Guerrero & Kim, 2013). Organizations that assess leadership styles and provide transformational leadership educational courses promote a transformational culture throughout the organization (McRae, 2017). Some leadership strategies for successful change implementation include (a) the leader being responsive at all time during the change process, (b) establishing a relationship with external stakeholders, and (c) giving frequent and consistent information while utilizing all communication mediums (O'Keeffe, 2017). Additional leadership strategies include a high senior leadership presence, the leader's inclusion of experts, and the transparency of the leader to build employees and external stakeholders trust (O'Keefe, 2017).

The leadership stability creates innovation and growth (Capuano, 2013). The leader creates an environment of reassurance and safety while providing focus and guidance to the staff (Schuller et al., 2015). Organizational change requires the creation of a new system and new approaches (Kotter, 1996). Leaders sometimes have challenges to create an opportunity for employees to train and use new skills in the organization (Hauck et al., 2013). Most organizational change transformation fails because of ineffective leadership (Basu, 2015). A good leader is needed to drive organizational change successfully (Mangundjaya, Utoyo, & Wulandari, 2015).

Kotter's (1996) change model emphasized the importance of the leaders' ability to communicating the shared vision. The leader should be able to communicate the vision, motivate the team, take measured risks, encourage intellectual stimulation, and consider employees (Drenkard, 2013). The leader is responsible for the organization's

plan for change and its guidance and implementation through delegation (Teoh Kae & Yazdanifard, 2015). Leadership competencies are necessary to manage resistance, confusion, exploration, and commitment of management during organizational change (Teoh Kae & Yazdanifard, 2015). Therefore, the more competent the leader, the greater the success during organizational change (Sharif & Scandura, 2014).

The leader's style influences the type of behavior subordinates exhibit during the change process (Abrell-Vogel & Rowold, 2014). Researchers categorized the transactional leadership style in multiple ways. According to Vito, Higgins, and Denney (2014), the transactional leader uses contingent rewards to obtain the desired behavior and predict or prevent subordinates from deviating from the goals. The transactional leaders exhibit passive behavior and only acts when problems arise (Vito et al., 2014). Leaders in healthcare should exhibit innovative strategies to motivate employees and improve the organizational performance (Jordan et al., 2015).

The transformational leaders are more suited for technological changes in the healthcare industry (Abrell-Vogel & Rowold, 2014). The transformational leader is charismatic and able to motivate subordinates to accept the shared vision (Vito et al., 2014). Historically, transformational leadership includes qualities such as strong relationships with subordinates, motivator, and a moral agent (O'Keefe, 2017). The transformational leader trigger change in the employees and social systems creates value and positive change in employees, and generate new ideas and perspectives (Jordan et al., 2015). According to O'Keefe, transformational leadership exemplifies professional practice while implementing new knowledge, structural empowerment, innovation, and

improvement. Moreover, the transformational leader solidifies trust during the change process (Jordan et al., 2015).

Transformational leaders enhance Kotter's model towards change as the leader knows how to motivate employees to increase the importance and sense of value for a task and communicates the shared visions (Teoh Kae & Yazdanifard, 2015). Transformational leaders inspire employees to commit to the vision of the organization through inspirational motivation (Jordan et al., 2015). The ability for healthcare leaders to motivate employees effectively could offset the initial resistance to change. Transformational leaders are helpful to overcome resistance to change because of their integrity, thoughtfulness, and ethics (Teoh Kae & Yazdanifard, 2015). The transformational leadership is considered most effective regarding employee effectiveness, organizational commitment, satisfaction, and employees' effort (Abrell-Vogel & Rowold, 2014).

Transformational leaders exhibit a more democratic style of leadership. The transformation leadership style incorporates four key features (a) charisma, (b) motivation, (c) knowledgeable stimulation, and (d) consideration (Holten & Brenner, 2015). Change and transformation occur when leaders take great care to manage the human dimensions of the change process (Longenecker, Longenecker, & Gering, 2014). The transformational leader can identify skilled teams who can act for the common good, provide a structure through frequent communication, and respect the expertise of their peers (O'Keefe, 2017). Team members can provide the organization with a stable foundation to move in a unified direction for the change (O'Keefe, 2017). The trust

between the leader and the team creates a culture of positive emotional outcomes (Jordan et al., 2015).

During the time of change, employees' trust in the leader is essential to the successful implementation of the EMR systems. Employees will trust their leaders who are actively involved in the organizational change (Sharif & Scandura, 2014). The transformation leader utilizes emotions of trust and influence to subordinates to comply with the goals and vision of the organization (O'Keefe, 2017). Trust is the fundamental element of effective leadership as trust associated with job satisfaction, organizational commitment and citizenship behavior, job performance, or the intention to quit (Agote, Aramburu & Lines, 2016). The transformational leadership style coordinates with Kotter's (1996) eight-stage change model as the trust, influence, and motivation factors allow the employees to buy into the vision set forth by the leader. The employees' trust in their leader motivates the employees to adapt to the change (Sharif & Scandura, 2014).

Implementing and Evaluating EMR Transformation

The U.S. federal government in 2009 passed the Health Information Technology for Economic and Clinical Health (HITECH) Act to encourage adoption of healthcare information technology (Adler-Milstein, Everson, & Lee, 2014). HITECH is established as a program to create financial incentives for doctors to implement the EMR systems that could improve patients' health, safety, and efficiency of care (Adler-Milstein et al., 2014). According to Hasanain, Vallmuur, and Clark (2014), EMR improves hospital efficiency, enable the documentation of patient information and provide quality patient care. Researchers use the terms electronic health records (EHR), and electronic medical

records (EMR) interchangeably to describe the centralized systems for managing and storing patient data (Ajami & Bagheri-Tadi, 2013; Ben-Zion et al., 2014). In this study, I will only use the term EMR to describe electronic records.

The EMR systems are the electronic record of patients' health information that automates the clinician's workflow and is used by healthcare professionals to improve the quality of patients' care and physicians' productivity (Ben-Zion et al., 2014). Another definition from The National Alliance for Healthcare Information Technology (NAHIT) describes EMR as an electronic health information on a patient, generated, managed, and consulted by authorized health care personnel (Hasanain et al., 2014). A holistic EMR system integrates building blocks such as business process improvement (BPI), health record management, collaboration and innovation, and user governance and participation (Meidani, Sadoughi, Maleki, Tofighi, & Marani, 2012). Moreover, Meidani et al. (2012) explained that the EMR building blocks enhance the benefits of the EMR quality.

The benefits of EMR systems stirred the interest of all stakeholders such as healthcare providers, government, research institutions, and health insurance providers (Top et al., 2015). EMR benefits include efficient healthcare processes, effective management and communication, improved clinical operations and research data, increased adherence to guidelines and governance, and decreased medication errors (Ben-Zion et al., 2014). Other potential benefits include improved patient safety and satisfaction, organizational efficiency, information security, and reduced cost (Top et al., 2015).

The EMR systems facilitate the quality of patient care and safety with the potential to reduce inefficiencies within the healthcare industry (Kruse, Mileski, Alaytsev, Carol, & Williams, 2015). The adoption of the electronic medical records can lead to decreased medication errors, effective management and communication, improved research data and clinical operations, and efficient healthcare processes (Ben-Zion et al., 2014; Kokkonen et al., 2013). The use of the EMR systems can improve the quality of healthcare by minimizing cost and treatment time, reducing medical errors, improving workflow, and reducing the need for file space, supplies, and employees (Biruk et al., 2014).

Researchers have suggested that statewide adoption of the EMR in the United States could produce savings in the estimated range of $142 to $371 billion over 15 years (Ben-Zion et al., 2014). Despite the lucrative financial predictions, research has shown that between 50 to 80 percent of EMR adoption projects fail in the healthcare sector (Cuccienello, Lapsey, Nasi, & Pagliari, 2015). Researchers identified major barriers to EMR adoption as organizational, change management, time, financial, psychological, legal, social, and technical (Goldstein et al., 2014). The innovation regarding the EMR systems requires a high degree of change in the organization both during and after adoption (Cuccienello et al., 2015).

Despite the high expectation rate and benefits of the EMR systems, the overall adoption rates of the system have been low (Biruk et al., 2014). Some reasons for the lag to adopt EMR systems expressed by researchers as user resistance, implementation costs, system cost/benefit asymmetry, the lack of standard protocols for data exchange, and

concerns regarding security breaches and patient privacy (Heart et al., 2017). The architecture facilitating the EMR functions include clinical patient data repository with real-time transaction processing database, medical vocabulary, workflow manager automation supporting process, and decision support analytical tools system (Ben-Zion et al., 2014). Adopting the EMR system involves delivery, design, and the use of software system in the organization (Meidani et al., 2012).

Healthcare innovations introduce new concepts, service, idea, process, treatment, education, outreach, prevention, product to improve diagnosis, and active research (Ben-Zion et al., 2014). One of the problems regarding EMR adoption is the process of implementing inter-related functions working together to create one functional system (Adler-Milstein et al., 2014). Other barriers to implementation include the reluctance of clinicians to accept the new system, potential disruptions and changes to the workflow, and reduced productivity (Biruk et al., 2014). Also, low adoption of the EMR systems could result from high implementation cost, breaches in security and patient privacy, lack of standard protocols for data exchange, and system usability (Ben-Zion et al., 2014; Kokkonen et al., 2013).

Hospital readiness to implement the EMR systems is essential to the successful change transition. Government regulations or financial incentives are drivers that initiate the healthcare industry to implement the EMR systems (Boonstra, Versluis, & Vos, 2014). Another set of drivers for EMR successful implementation includes the organizational structure and support for change, the functionality of the system, and the availability of the infrastructure (Fritz, Tilahun, & Dugas, 2015). The lack of trained and

ethical issues regarding safety and security expressed as low implementation factors (Fritz et al., 2015).

Boonstra et al. (2014) described the complexity of implementing the hospital-wide EMR system as human skills, culture, organizational structure, technical infrastructure, financial resources, and coordination. IT affects the interaction of technology within five elements: the company strategy, business processes, the external environment, structure and culture, and system features and infrastructure (Ben-Zion et al., 2014). Both the external and internal factors are affected during the change process (Hashim, 2013).

The change implementation process is different between the hospital industry and other industries. According to Boonstra et al. (2014), the difference between hospital industry and other industries involves the hospital industry possessing multiple objectives, such as patient care and physicians and nurses' education. Other differences include the hospital industry having complicated and varied structures, processes, and workforce with medical professionals possessing expertise, autonomy, and power (Boonstra et al., 2014). The differences between industries contribute to the challenges for leaders to successfully implement EMR systems in the hospitals (Safdari, Ghazisaeidi, & Jebraeily, 2015; Weeger & Gewald, 2015).

The support of information systems (IS) leaders and innovation of EMR systems could catalyze the change management and transformation process (Mellott, Thatcher, & Roberts, 2013). According to Cuccienello et al. (2015), the type of innovation needed to implement EMR systems in the hospitals should incorporate a high level of

organizational change during and after the adoption. Kotter's (1996) eight-stage change model effectively incorporates the different processes needed for a successful change implementation.

Successful EMR implementation requires an understanding of the human and organizational processes from both service planners and managers (Kruse et al., 2015). The EMR installation influences the individual behavior at the human level and the organizational work practices at the organization level (Cuccienello et al., 2015). Understanding the human factor of change for EMR implementation is significant to the change process, as well as understanding the technological capabilities (Boonstra et al., 2014; Safdari et al., 2015). To successfully implement the EMR systems into the healthcare organization, leaders should exhibit both technical and organizational skills (Cuccienello et al., 2015).

Implementing the new change process within the organization requires strong leadership who can deal with dominant physicians and are willing to use the system (Ajami & Bagheri-Tadi, 2013; Boonstra et al., 2014). The physician's support of the EMR system is essential to the other front-line users such as nurses and administrators (Ajami & Bagheri-Tadi, 2013). The human emotion during EMR implementation exhibit anxiety and uncertainty, which could lead to an adverse impact on quality and work processes (Boonstra et al., 2014). Moreover, the initial introduction of the EMR system often slows providers' productivity, increase workloads, and system induced errors (Park, Chen, & Rudkin, 2015). Increased failure of EMR installation in the United States is due to planning problems, training issues, and installation difficulties (Lesk, 2013).

The execution of the implementation plan is essential when adopting an EMR system (Kruse et al., 2015). Before the implementation process, leaders should generate a strategic plan that accounts for cost, governance, regulatory requirements of both internal and external environment, and facility needs (Kruse et al., 2015). The design of the EMR systems manages both the distribution and processing of information for patient care, including demographics, patient care records and billing details (Cuccienello et al., 2015). Key factors focus on constructing and reconstructing technologies to make the EMR systems work (Cuccienello et al., 2015). Essential to the successful implementation of the EMR systems is the creation of an implementation plan (Kruse et al., 2015).

Implementing Strategies for EMR Changes

Goldstein et al. (2014) explained that EMR initiatives should involve a corporate strategy with the organization adopting the EMR implementation strategy. The EMR adoption readiness of the company will determine the success of the implementation (Ben-Zion et al., 2014). The healthcare value chain includes many stakeholders such as physicians, nurses, patients and families, board members and leaders, insurance companies, and referring physicians (Stelson et al., 2017). EMR system could hurt profitability because the portable record may make it easy for patients to switch to providers, the implementation of the system could be disruptive, and a reduction in duplicate laboratory testing is reducing revenue (Ben-Zion et al., 2014). The executive management engagement provides visible support, leadership, accountability, and

commitment to the organization transition through the EMR transformation (Safdari et al., 2015).

Successful EMR implementation affects the business core and requires substantial changes in business processes (Ben-Zion et al., 2014). The healthcare industry is highly institutionalized and diverse with both administrative and clinical structure (Safdari et al., 2015). Powerful actors such as the physicians combined with the unpredictability and complexity of healthcare work require careful management of change (Rizer et al., 2015). Critical success factors (CFS) for EMR change requires a culture of continuous improvement, innovation, and exploration with communication involving both positive and negative impact of EMR implementation (Ben-Zion et al., 2014).

The type of enterprise application strategy the healthcare administrator chooses, determine the success of the EMR systems implementation (Trudel et al., 2017). Because of the different forms of the EMR systems, its use can be facilitated by individual, regional, or nationwide organizations (Safdari et al., 2015). The healthcare units utilizing EMRs include hospitals, general practitioner surgeries, pharmacies, and other healthcare providers (Ben-Zion et al., 2014). The correlation of the type of enterprise application strategy and the administrator's choice of EMR system could determine the successful implementation of the system (Fareed, Ozcan, & Desharo, 2012).

According to Fareed et al. (2012), enterprise application strategy represents the cooperation and coordinating of the IT designs when working throughout the organization. Leaders choosing the right enterprise application strategy is essential to the success of the EMR system by providing efficient and quality healthcare services within

the organization (Rizer et al., 2015). The accessibility of information, speed, and quality of decision-making processes could be increased because of the administrator's selection of the best enterprise application strategy for the EMR system (Fareed et al., 2012).

Implementing the appropriate EMR system for the organization requires the collaboration with the right vendor. Firms usually increase effectiveness when competition drove the quality care and differentiated care delivery methods (Ford, Huerta, Menachemi, Thompson, & Yu, 2013). According to Ford et al., technology change (TC) and EMR implementation within the healthcare settings represent both innovation and organizational changes. Successful EMR adopters usually select the vendor strategy with the current operational strategy and decision-making structures (Ford et al., 2013).

Healthcare organizations often use three primary types of vendor enterprise resource planning (Fareed et al., 2012). The three different enterprise application choices for hospital administrators when acquiring EMR systems include single vendor (SV), best of suite (BOS), and best of breed (BOB) (Fareed et al., 2012). Viewed as a continuum, SV provides the most integrated system solution, while BOB at the far end provides hospitals with the optimal differentiated systems for specific functions such as nursing, surgery, and finance (Fareed et al., 2012). BOS in the middle provides a mixture of both SV and BOB (Ford et al., 2013). Typically, hospitals usually choose the BOB or SV strategies (Ford et al., 2013).

The options for leaders to choose the best vendor enterprise resource strategies for the hospital is challenging to the decision-makers (Fareed et al., 2012). The SV strategy

design to be used in multiple locations and integrate administrative and clinical application data (Ford et al., 2013). The SV approach complements the enterprise resource planning (ERP) software strategy with three main activities (a) update electronic data processing, (b) track key ratios, and (c) provide top management with decision support system that allows data mining for strategic choices (Ford et al., 2013).

Researchers explained that the system requires extensive redesign to coordinate with the organizational processes (Fareed et al., 2012). Hardware redesign is challenging in healthcare as most processes had manual configurations and linked to user's needs (Ford et al., 2013). The process of redesign can be costly, making the SV design unfavorable for hospital leaders (Ford et al., 2013).

Another strategic design is the BOB (Fareed et al., 2012). Hospital leaders avoiding the massive reengineering process of the SV vendor strategies usually invest in the BOB or BOS strategies for EMR implementation (Ford et al., 2013). The BOB strategy integrate parts of the software from multiple vendors and custom component from within the hospital (Fareed et al., 2012). Because of the customization process, the BOB require specialized staff with a range of skill sets to integrate and manage multiple applications (Fareed et al., 2012). The hospital administrators might choose the BOS strategy because of the financial government compliance that poses a risk when using the BOB vendor strategy (Ford et al., 2013). The BOB strategy would also require additional resources for many administrative and clinical applications (Ford et al., 2013).

The BOS is considered the hybrid strategy of the vendor systems (Fareed et al., 2012). The BOS strategy integrates other applications such as the administrative

applications, information systems, and computer systems used by front-line employees (Ford et al., 2013). One primary reason hospitals transition from paper forms to electronic forms is the transfer of billing and operational quality controls (Safdari et al., 2015). Consequently, the EMR system has become an integral part of the organization (Safdari et al., 2015).

When choosing the correct EMR enterprise application strategy for the hospital, the administrator faces the challenge of balancing the combination of differentiation and information system (WAS) function needed for the hospital (Fareed et al., 2012). The hospital administrator's choice should optimize resources while choosing the best system that meets their needs (Ford et al., 2013). The employees' behaviors especially physicians within the organization could influence the administrator's selection to the EMR system (Fareed et al., 2012).

Another challenge could result from the hospital administrator provider choice of the EMR system for their company (Koppel & Lehmann, 2015). Administrators' negotiating for the best EMR strategic system could influence external vendors with competing interests and objectives (Fareed et al., 2012). Also, hospital administrators are known to shift from one vendor to another because of an emerging monoculture (Koppel & Lehmann, 2015). For example, as of 2013, the vendor Epic captured more than 50% of the United States new large hospitals EMR contracts (Koppel & Lehmann, 2015).

The need for hospital administrators to coordinate and standardize the EMR system during negotiation correlates with the hospital performance during implementation (Fareed et al., 2012). Healthcare deliveries could improve significantly

with the integration and standardization of hospitals (Ford et al., 2013). Managers consider performance and efficiency when identifying the best enterprise application strategy for EMR systems (Fareed et al., 2012).

When selecting a system for the EMR vendor, management should evaluate the IT capabilities, the infrastructure within the organization, and the organizational requirements (Ghazisaeidi et al., 2014). The BOS strategy is considered the hybrid of the SV and BOB strategies that combine the best features of the SV and BOB approach (Fareed et al., 2012). Compared to the BOB strategy, the BOS strategy can lower cost as the BOB strategy primarily focus on specific functions such as nursing, surgery, and finance (Ford et al., 2013). When optimizing hospital efficiency, the use of the hybrid BOS strategy combined with BOB for specific areas presents the ideal approach (Fore et al., 2013).

Leadership of EMR and Patient Trust

Disregarding the best EMR strategies for optimizing organizational change, without the patients' trust in the system, management functions become ineffective and futile (Alshameri et al., 2014). Expanding the use of EMR to include patients' interactions during the clinical encounter as patients become familiar with the technology is important to gain patients' trust (Yang & Kim, 2013). According to Qiao et al. (2015), understanding and incorporating the patients' perspectives of EMR systems could accelerate the adoption of the health information technology design. Because the patients' perspective is a part of the decision-making process, the patients' negative attitude toward EMR could contribute to a rejection of the EMR use in clinical practice

by their healthcare providers (Qiao et al., 2015). The patients' outlook regarding the EMR process could contribute to the healthcare providers acceptance or rejection of the system (Qiao et al., 2015).

The EMR system used to improve the patient-doctor relationship (Alshameri et al., 2014). Patients can securely access their EMR information with technology-based tools that support the EMR system (Yang & Kim, 2013). Some doctors have used EMR to enhance the interactions between patient and doctor by allowing patients' participation during the clinical encounter (Shachak, Reis, & Pearce, 2013). Health care-focused social network allows increased patient engagement where patients can ask questions about their care and get answers from their physicians (Yang & Kim, 2013).

McGinn et al. (2013) reported 30% of all medical care in the United States as unnecessary. Both healthcare stakeholders and policymakers agree that health information technology has the potential to reduce the overtreatment of patients (McGinn et al., 2013). As doctors incorporate the patients' perspectives in the decision-making of the patient care, the outcome could increase patients' trust in the EMR system and quality care (van der Vaart et al., 2014).

The adopting the patients' perspective of the EMR technology could also accelerate the adoption of the systems in hospitals (Qiao et al., 2015). Patients could use the EMR to retrieve, share, and manage their healthcare information and enhance the quality of care and reduce cost (Koulayev & Simeonova, 2015). The patients' trust or distrust in the EMR system depends on the patient's interpersonal relationship with the doctor as this relationship could affect the patient's observance to the medical advice,

care behavior, and health status (Qiao et al., 2015). The patient trust in technology represents the optimistic belief that the technology cannot fail (Koulayev & Simeonova, 2015).

The link between patient trust and technology is three-fold. According to Qiao et al., patient trust in health technology includes a positive perception of their health care provider, the use of technology in providing care, and the characteristics of the EMR technology. From a National trends study, researchers reported that more than 87% U.S. adults trust the use of EMR in their primary care (Qiao et al., 2015). Also, 60% of the patients surveyed responded that they would consent to the electronic exchange of their health information treatment (Qiao et al., 2015). Increased patients' trust of the EMR system depends upon the competent use of the technology by the physician (Koulayev & Simeonova, 2015).

Mastering the use of the EMR system requires training of healthcare professionals, physicians, leadership, and management (Shachak et al., 2013). Doctors should be familiar with skills such as computer navigation and typing, information management, documentation practices, and patient encounters (Shachak et al., 2013). Healthcare leaders should also educate patients on the safety and security of the EMR systems as this builds patient trust (Qiao et al., 2015). The patients' understanding and perception of safety and security of the systems will also encourage patients to trust the EMR (Qiao et al., 2015).

Leaders implementing the EMR system strategy are instrumental during the change process. Qiao et al. (2015) explained that during the exchange information

between systems, leaders should develop standardized policies and effective strategies to ensure the security of patients' information. The volume of healthcare data transferred requires increased security protocols and standardization processes (Qiao et al., 2015). New guidelines regarding adolescents require providers to take extra precautions to protect the confidential information of the young adults (Nielsen, 2015). Ensuring the security and confidentiality of patients' information remain one of the highest challenges for healthcare providers utilizing the EMR system (Nielsen, 2015).

The trust established in the EMR system ensures that healthcare leaders, stakeholders, and vendors work together toward a successful implementation process of the system (Yang & Kim, 2013). EMR system implementation should involve the reconfiguration of technologies, design for new artifacts, and modified work policies and regulations to manage the quality of clinicians' performances (Park et al., 2015). Successful implementation of the EMR system requires planning and efficient leadership where adaptation of the system needs both individual and organizational efforts (Park et al., 2015).

Kotter (2007) identified change management and visionary leadership as facilitators to stakeholders' and employees' trust in the EMR process. According to Kotter (1996), the model of implementing a successful EMR system requires leadership built on trust and effective decision-making. Other criteria for success include an enterprise application strategy that has the potential to improve patient care and safety while revolutionizing healthcare with innovative processes for advancement in the industry (Kotter, 2007).

Regulatory compliance and data security are at risk for the implementation of the EMR systems (Getz, 2015). IT professionals are given the responsibility to provide processes, protocol, standard, and governing tools to maintain a legal and secure environment for data and records (Robichau, 2014). One main system issue includes the lack of standardization data for true patient data integration (Yang & Kim, 2013). The standardization of patient data offset with the innovations in EMR technology can enhance patient care (Yang & Kim, 2013).

The security of patient's data is a high priority in the healthcare industry. Enhancing the security of patients' data and records requires that the right employees are assigned to the correct task and given the right tools (Robichau, 2014). The key to successful implementation requires organizational leadership and effective communications (Rizer et al., 2015). Implementing processes and systems with ongoing maintenance and policy updates will ensure the long-term success of the EMR system (Robichau, 2014).

Transition

The goal of this study was to explore successful strategies health care leaders use to implement EMR systems. Section 1 described the procedures involved in applying the EMR systems and the role of the leader during the change process. Kotter's (1996) model for change provides the rationale for the conceptual framework for the study. Kotter's model explains the strategies needed for successful change. Section 1 also identified the organizational change process when implementing the EMR system and the employees' resistance associated with the modification. In Section 2, I addressed the

research process, which includes the role of the researcher, characterization of the participants, and the collection of data. Section 3 included the presentation and analysis of the findings, implications for social change, recommendations for action, additional future research, and the conclusion.

Section 2: The Project

Section 2 includes the following topics such as (a) purpose statements, (b) role of the researcher, (c) participants, and (d) research method and design. Other topics in Section 2 are population and sampling, ethical research, data collection instruments and technique, data organization techniques, data analysis, and reliability and validity. The purpose of Section 2 was to explain the process taken to collect and analyze the data for the study.

Purpose Statement

The purpose of this qualitative multiple case study was to explore strategies hospital leaders use to successfully implement EMR systems. The target population consists of hospital leaders and healthcare professionals from two hospitals who have successfully implemented EMR systems. The implication for positive social change includes the opportunity to (a) provide awareness to the advantages of EMR systems, (b) increase communication between patients and healthcare providers, and (c) increase safety and security of patients' information. Also, a hospital using EMR systems could reduce healthcare cost while providing improved health care to patients (Apfeld et al., 2013).

Role of the Researcher

I am the researcher of this qualitative multiple case study and my role was to collect the data from the participants, interpret and analyze the data, and present the findings. Enhancing credibility and accuracy was essential for the results of the study. I used member checking validation where the participants' answers were paraphrased in

my own words and then sent back to the participants to check for data accuracy (Birt, Scott, Cavers, Campbell, & Walter, 2016). According to Fusch and Ness (2015), the data collection instrument can present biases, ideologies, and values from their background. As the data collection instrument, I reduced biases by documenting and interpreting only the information given by the participants. I also mitigated biases by having no prior relationship with the participants. To further reduce bias, I used the data source and the type of method to reinforce the validity of the case evaluation. I achieved data saturation when no new information received from the participants during the interview (Trana, Porcherb, Falissarde, & Ravaud, 2016; Yin, 2013).

To protect the confidentiality of the participants' shared information was essential to the ethical integrity of the research (Wolf et al., 2015). According to Yin (2014), knowing how to conduct research ethically is essential to avoid biases. During the interview and data collection process, I utilized basic ethical principles such as respect of persons, beneficence, and justice according to the guidelines of the Belmont Report protocol (Office for Human Research Protection, 2016). Utilizing an interview protocol with procedures and rules was essential to the credibility and ethics of the case study as both the researcher and participants were aware of the line of inquiry and the purpose of the study (Yin, 2014).

Participants

Participants are required to have real-world experiences in the subject phenomenon of the qualitative study (Yin, 2014). I interviewed hospital leaders and healthcare professionals from two hospitals who were instrumental in the decision-

making process at the hospitals with self-generated interview questions. I interviewed healthcare leaders such as the chief medical information officer, director of information technology, director of organizational performance, and lead clinical information system director. The interviews of each participant conducted in a private room to protect the interviewee's identity or via telephone.

To define the sample universal and establish boundaries, a set of inclusion or exclusion criteria was specified for the study (Robinson, 2014). The participants I interviewed have the following requirements (a) hospital leaders who are instrumental in the successful implementation of the EMR systems, (b) used the system within their workflow processes for at least four months after the transition, and (c) work for the organization for at least one year. Also, I ensured that the participants were willing to do a telephone or face-to-face interview for approximately 40 minutes. Participants excluded from the interview were hospital leaders with no involvement in the implementation of the EMR system and have never used the system. Only active participants with decision-making abilities and hands-on experience with implementing and using the EMR system participated in the interview.

I developed a business relationship with the participants by calling to explain the objectives of the research. I developed the participants' trust by building rapport and communicate the confidentiality of the interview. I email an invitation to participants to volunteer to participate in the study. Participants required to sign the consent form showing support and voluntarily participate in the study.

Research Method and Design

Research Method

The three primary research methods are qualitative, quantitative, and mixed method with the mixed method presenting stages of both quantitative and qualitative paradigms mixed within the study (Turner, Kane, & Jackson, 2015). Researchers use the qualitative method to understand the *why* behind the phenomenon (Jervis & Drake, 2014). The qualitative researcher uses open-ended questions to explore new ideas and understand the attitudes and experiences of patients, healthcare workers, and the community (Jervis & Drake, 2014; McCusker & Gunaydin, 2015). According to Jervis and Drake, qualitative data collected from nonquantifiable sources, and investigators observe behaviors and record through notes without relying on instrumental measurements. The qualitative method was appropriate for this research because I will attempt to answer the *what*, *how*, and *why* questions of the phenomena.

Quantitative researchers answer the how many or how much questions by using numbers as data for analysis and statistical procedure to analyze the data (McCusker & Gunaydin, 2015; Jervis & Drake, 2014). According to Jervis and Drake (2014), the quantitative researcher tests a hypothesis and relies on instrumental measurements to analyze numerical data. Since I am not testing a hypothesis nor analyzing statistical data, the quantitative method is not relevant for my study.

The mixed method is a combination of the quantitative and qualitative approaches (Peterson et al., 2013). According to McCusker and Gunaydin (2015), the advantages of using the mixed method includes the qualitative data with an in-depth analysis of the

survey while the quantitative data test statistical analysis and detailed assessment of responses. The mixed method is not appropriate for my research as I am only exploring the experiences of the processes and phenomena of the stakeholders involved in the successful implementation of EMR systems in hospitals. I will not be analyzing numeric data nor testing hypothesis. The qualitative method will be used to identify the participants' experience and strategies incorporated to implement the EMR systems successfully in hospitals.

Research Design

For this study, I considered five qualitative designs to address the business problem. The five possible qualitative designs include narrative research, phenomenological, grounded theory, ethnography, and case study (Yin, 2014). Researchers describe the narrative design as participants explaining their life's experiences through storytelling (Haydon & Riet, 2014). Because I will not explore the stories of the life experiences of my participants, the narrative design is not appropriate for my study. With the phenomenological design, the researcher examines the lived experiences of the individual regarding a phenomenon (Wilson, 2015). Since I am not examining the individual's lived experiences of a phenomenon, the phenomenological design is not appropriate.

In the grounded theory, the researcher identifies concepts and build a theory from the qualitative data (Foley & Timonen, 2015). According to the authors, researchers using the grounded theory design are usually concerned with the psycho-social processes of behavior. The grounded theory is not relevant to my study because I am not

developing a theory to explain my research phenomenon. Ethnographic researchers study the culture of an organization or group of individuals (Nelund, 2013). I do not intend to explore the culture of my participants; therefore, the ethnography design is not appropriate for my research. The focus of my research was to learn what successful strategies hospital leaders use when implementing EMR systems. The case study design is appropriate for this study as it supports the objectives of the study. In the case study design, the researcher explores the real-world situations of an event, series of events, specific activity, or problem by using a single case or multiple cases (Turner & Danks, 2014). According to Yin (2014), the researcher using a case study design investigates the phenomenon within a real-world context. Using multiple cases will allow me to explore strategies from participants in real-world situations regarding EMR systems implementation.

Population and Sampling

The population of the study was hospital leaders with experience and successful strategies and implementation of EMR systems. The sampling of participants was not random but consist of actual leaders at the hospitals who are instrumental in the EMR implementation. Obtaining an understanding of the views and experience of the users could bring insight to the processes and strategies needed to successfully implement EMR systems. A purposive sampling strategy with inclusive criteria represent the eligible participants of the sample (Robinson, 2014). Robinson explained that researchers using the purposive strategy assume that some individuals have significant perspective on the phenomenon and should be interviewed. The plan for the study was to

interview chief operating officers, directors of operations, director of information technology, clinical information system director, and other lead hospital personnel involved in the decision-making and implementation of the EMR systems.

The use of purposeful sampling technique was appropriate for this study as the method facilitate the objective of the research where individuals in the sample universe make up the final sample (Robinson, 2014). According to Robinson, the actual purposeful sample size was determined by data saturation. Data saturation occurs when data was replicated or redundant and when the collection process offers no new data (Dworkin, 2012; Marshall, Cardon, Poddar, & Fontenot, 2013). I interviewed five or more hospital leaders depending on data saturation from two hospitals. According to Dworkin (2012), the participants' range required for data saturation in a qualitative study is between 5 to 50.

I conducted face-to-face or telephone interviews whichever was most convenient for the participants. I also conducted face-to-face interviews at a location agreed upon by the participants while telephone interviews conducted over a secured line. Inclusive participants identified for the study were required to sign a consent form to participate in the interview. Data will be stored securely for 5 years on a recording instrument and filed in a safe place at the researcher's discretion. I obtained letter of cooperation approval from both hospital institutions and consent forms signed before the data collection process.

Ethical Research

The institutional review board (IRB) governs the oversite of ethical research (Nichols, 2016). According to Nichols, the IRB, governed by Federal regulations exist to protect the welfare and safety of human subjects in research. Walden University research complies with the IRB's ethical standards and the United States Federal regulations. Walden University requires researchers to obtain IRB approval before the collection of any data for research including pilot data. Walden University researchers must comply with all policies and procedures related to ethical standards in research. Without IRB approval students' work will not be credited.

I complied with every ethical standard, federal regulations, policies and procedure regarding human subjects for this study. Additional compliance included concerns relating to the right to privacy, participants confidentiality, informed consent, the right for participants to withdraw, protection from harm, transparency, and honesty with participants. According to Dekas and McCune (2015), embracing transparency and data privacy will establish trust and more engaging participants. Walden's IRB approved the collecting data for this study, and the final doctoral manuscript included Walden IRB approval number.

Yin (2014) explained the importance of communicating the consent process to participants before the interview. Appendix A includes a copy of the informed consent form for participants. The informed consent form contains information regarding the purpose and nature of the study, risks, and benefits to individuals participating in the study, privacy and limits to confidentiality, statement of consent, interview questions, and

contact information and questions to the researcher. The consent form also has information regarding the process of audio and recorded interview. I had consent forms available for participants to sign before the interview process. An introductory letter regarding the purpose, objective, goals, and background of the study was available to interviewees, and an example is in Appendix B. Before the commencement of the interview, I first obtained permission from the two hospitals to do the research. A letter of cooperation was sent to the hospitals, and an example is in Appendix C.

According to Wolf et al. (2015), the researcher should be aware of the rights and confidentiality of the participants at all times. I followed the protocol of the *Belmont Report* where participants can decline or withdraw from participating in the interview before or anytime during and after the interview process without penalty (Zucker, 2013). According to Zucker, the information within the *Belmont Report* focuses on the boundaries between practice and research, ethical principles, and the application of ethical principles.

I protected the participants' and institutions' identity by using codes instead of the actual names. For example, instead of the participant's name, I used *Participant 1* and *Institution A* for the institution's name. The names of institutions and participants will not be identifiable. Participants received a summary of the findings from the study. I protected the rights of individuals by storing recorded data in a safe place for 5-years. The participants received no monetary incentives to participate in the study, and the researcher has no conflict of interest. I showed no bias to the interviewing subjects or the topic by using a protocol script during the interview process.

Data Collection Instruments

Rowley (2012) found that semistructured interviews include different forms and varieties of questions to accommodate the interviewee. Anyan (2013) further explained that the semistructured interview method enables respondents and the researcher to communicate freely regarding the topic of interest in the study. According to Rowley (2012), during the semistructured interviews, the researcher can ask two or more sub-questions prompted from the primary question to ensure the interviewee explores the question sufficiently. Rubin and Rubin (2012) emphasized the semistructured process as an excellent way to interview participants while focusing on the details of the research question. I used the semistructured interview process to record data and explore strategies that hospital leaders use to implement EMR systems.

The data collection process requires precise note taking, storage, the organization of data, and storage. Other methods include coding and sort information such as interviewee's name, institution name, job title, and years of experience with implementing EMR systems. I recorded the interview on a secure database and write pertinent information using a pen and notepad to document highlights from the interview. The data was stored securely for 5-years for additional analysis if needed and to protect the interviewee's identity.

I was the primary data collection instrument in this study. In qualitative research, the researcher hears, sees, and interprets the data and therefore is considered the primary data collection instrument (Marshall & Rossman, 2016). The interview protocol serves as the secondary instrument for the study. Interview protocol was the script used during

the interview session as a guide for the interview process. An example of the script is in Appendix D.

During the interview, participants can provide an in-depth description of the list of strategies the institution uses to implement EMR systems (Rubin & Rubin, 2012). Open-ended questions encourage interviewed subjects to elaborate, give an opinion, and explain their experiences of the topic (Rowley, 2012). I used open-ended questions to interview the participants. In addition to open-ended questions interview, I also used other sources such as documented successful strategies EMR hospital leaders filed in the form of company documents. I wrote the documented EMR strategies in summary form on a notepad. Transcript review and member checking used to ensure validity and reliability of data (Yin, 2014). Participants provided with a summarized copy of the interview responses and records for verification of accurate recording and interpretation of data.

Data Collection Technique

Before collecting data, I secured approval from Walden University IRB. An approved letter of cooperation was obtained from the hospitals. I received the participants' emails from family members and friends who work at the hospitals. I used email to recruit participants, and the participants signed an attached consent form. I collected the consent forms from participants and use a protocol script as a guide for the interview. An example of the consent form is in Appendix A, and the protocol script is in Appendix C. Face-to-face interview of participants were conducted in a private room of the participant's choice to ensure confidentiality and privacy. Participants have rights,

and I enforced these rights by restating the rights to the participants before the commencement of each interview.

Anyan (2013) explained that the qualitative research interview method provides a more comprehensive understanding of the data with more information about the interviewee and interviewer. According to Anyan, the interview method of data collection allows individuals to think, talk about their needs, experience, understandings, and expectation. I collected, recorded, and transcribed data from interviewed participants. The interview was conducted with participants to the point of data saturation where no new theme from interview responses emerges (Marshall et al., 2013). Hospital implementation plans and procedure data also augment the interview data to enrich the research. I gave the participants a copy of the summarized interview data and company documents for member checking. According to Birt et al. (2016), member checking occurs when participants validate the credibility of the results.

Data Organization Technique

I organized both transcribed interview and raw data typed notes in a folder on Microsoft Word document. The electronic files are encrypted and stored for 5-years on a laptop using a password to protect the confidentiality of the participants. I saved the hard copy files in a folder and lock in a secured location. Jacob and Furgerson (2012) explained that the interviewer should keep files in folders and locked away in a safe place.

I used the NVivo software to organize, analyze, and find insights with the open-ended interview. According to Edwards-Jones (2014), using the NVivo software will

assist with importing, sorting, and coding data. I coded recorded interview and company documented data and present participants a summary copy of the transcript for member checking for credibility and accuracy. After 5-years, I will shred paper notes and destroy electronic files.

Data Analysis

The analysis of the open-ended interview questions and archived documents were analyzed using codes and themes to establish triangulation. The data analysis phase included the compiling phase, disassembling, reassembling, and the interpretation stage (Yin, 2014). According to Yin, during the analytic strategy stage, the researcher should search for patterns, concepts, or insights that might bring light to the research questions. Coding of archival documents and interview was essential to the development of themes. Jochen and Grit (2013) explained coding as the indexing of raw data which can be single words, phrases, numbers, or mnemonics. Codes represents text segments retrieval and group according to themes from the data contents (Jochen & Grit, 2013). I transcribed the recorded data and then code both archived documents and transcribed data into a segment of text to identify thematic aspects of the data.

Triangulation is essential to the validity of the study (Joslin, & Müller, 2016). I used methodological within-method triangulation approach to examine documented archived data and transcribed text from the interview (Joslin & Muller, 2016). Analyzed data was determined by using theme or similarities from the interviewed data through coding. I used NVivo software to sort, organize, and analyze imported responses from the transcribed interview. I also used NVivo software to group similar responses so I

could identify any pattern or similarities. The structured plan strategic approach was used to compile and organize the data, disassemble the data by dividing the text into different headings and fragments and reassembling the data by grouping into sequences. I used an open-coding system to analyze and interpret the data. I validated the data by using member checking.

Reliability and Validity

Multiple data collection sources create a more accurate case study (Houghton, Casey, Shaw, & Murphy, 2013). The validity of a case study refers to the integrity of the report, while reliability defines the consistency within the analysis of the procedure (Noble & Smith, 2015). The researcher's subjectivity can cloud the interpretation of the data in qualitative research; the researcher must pay attention to the reliability and validity of the study (Cypress, 2017). Cypress further explained that the rigor of qualitative research refers to the concept of validity and reliability.

Reliability

Noble and Smith (2015) described reliability as consistency with the deployment of analytical procedures. Cypress (2017) further explained that reliability based on consistency is visible during research practices, analysis, and conclusions. I mitigated the potential for inaccuracy by using interview protocol and member matching. I asked each participant the same interview questions using the same order and method. To establish consistency and enhance the reliability and dependability of the interview data. Member checking gave the researcher the opportunity to detect any personal bias by soliciting the participants' feedback regarding the interpretation of data (Kornbluh, 2015). In addition

to using the interview protocol for consistency, I used member checking to gather additional details, enhance accuracy, and address any gaps or confusion in the interpretation of the data (Kornbluh, 2015).

Validity

Cypress (2017) explained validity as the trustworthiness of the research. Other authors such as Noble and Smith (2015) referred to validity as the integrity of the application methods and how the findings accurately reflect the data. According to Cypress, the qualitative researcher should consider the credibility, transferability, confirmability, and dependability of the data. Validity relates to the trustworthiness and rigor of the research findings (Anney, 2014). Assessing trustworthiness during qualitative research presents truth to the results of the study (Elo et al., 2014). I used triangulation and member checking to address the dependability, validity, and credibility of the research.

Triangulation occurs when the researcher uses more than one data sources to assure the credibility of data while decreasing biases and increasing validity and strength of the research (Joslin & Müller, 2016). With data triangulation, the researcher's different methods and perspectives produce more comprehensive findings (Noble & Smith, 2015). The strategy of methodological within-method triangulation uses more than one data collection procedure from the same design (Joslin & Muller, 2016). To ensure credibility, I used data triangulation by interviewing hospital leaders involved in the successful implementation of the EMR systems from two different hospitals located in the Metropolitan Detroit area.

Transferability. Houghton et al. (2013) explained transferability as the possibility of findings transferring to another similar situation or context with the same meaning from the completed study. I enhanced transferability by providing a rich description of the data through detailed and accurate recording, collection, and analysis of all data pertinent to the study.

Confirmability. According to El Hussein, Jakubec, and Osuji (2015), confirmability refers to the systematic record keeping of all decisions from the research findings such as sampling, sources of data, analytical procedures, and their implementations. The confirmability of the study established through an audit trail by maintaining a reflexive journal of the research process (Anney, 2014). During the research process, I met confirmability by maintaining a reflexive journal where notes are pertaining about the study documented on a daily basis. The audit trail was in the form of interview documentation and the step-by-step account of the process.

Data saturation. Marshall et al. (2013) explained data saturation as the point where no new theme emerges from the participants. Other authors such as El Hussein et al. (2015) and Walker (2012), defined data saturation as the redundancy of data. I achieved data saturation when no new theme emerges from interviewed participants.

Transition and Summary

The purpose of this qualitative multiple case study was to explore strategies hospital leaders use to implement EMR systems successfully. In Section 1, I defined the problem and purpose statement of the study. Also, I explained the nature of the study, conceptual framework, the research questions, and the literature review in Section 1.

Section 2 included topics such as the role of the research, participants, the research method and design, ethical research, data collection instrument, technique, organization, and analysis, and the reliability and validity. In section 3, I addressed (a) the findings, (b) implications for social change, (c) recommendations for action and further research, and (d) reflections and conclusion.

Section 3: Application to Professional Practice and Implications for Change

Introduction

The purpose of this qualitative multiple case study was to explore strategies hospital leaders use to implement EMR systems successfully. I conducted five semistructured interviews with five healthcare facility leaders who had more than one-year experience with implementing the EMR systems. I collected data using transcribed participants interviews, observation of participants, and company PowerPoint documents with data collection protocol approved by Walden University IRB (approval number 12-05-17-0639947).

The interviews were audio-recorded, transcribed, coded, and themed. I used Microsoft Excel software to establish themes from the transcribed interview. Three primary themes emerged for the analysis (a) strategies hospital leaders use to implement the EMR system, (b) strategies hospital leaders use to achieve quality and best practice, and (c) strategies hospital leaders use to manage change and resistance to change.

Sub-themes emerged from the primary themes. The first theme strategies and decisions hospital leaders use to implement the EMR system sub-theme included (a) IT/technology, (b) training, (c) test/testing, and (d) committees (see table 1). Sub-themes for strategies hospital leaders use to achieve quality and best practice include (a) policies and standardization and (b) matrix/matrices and survey (see table 2). The third set of sub-themes for strategies hospital leaders use to manage change, and resistance to change include (a) communicate/communication, (b) stakeholders, and (c) leadership (see table 3).

Presentation of the Findings

The overarching research question was: What strategies do hospital leaders use to implement EMR systems successfully? Participants in the study explained from their experience the strategies they used to successfully implement the EMR systems. The participants were from the leadership of two major hospitals. The study's findings are significant to hospital leaders who are implementing the EMR systems in the organization.

I used Microsoft Excel to code, identify themes, and analyze the transcribed interviews. The hospitals and participants are coded as follows: hospital 1 (H1) represented by participant 1 (P1), hospital 2 (H2) represented by participants 2, 3, 4, and 5 (P2, P3, P4, and P5). I interviewed five participants using semistructured interviews consisting of 11 questions to collect data from each participant. The average interview time was approximately 30 minutes. During the interview, P1 presented me with a PowerPoint document for additional information. Data saturation began after the third interview and continued to the fifth interview where no new information emerged, and there was no need for any more interviews. Upon completion of the interviews, I transcribed the recordings and emailed the transcripts for review and feedback. Participants' reviewed and gave feedback on the transcript to ensure that the interview transcribed correctly and free from errors (Houghton et al., 2013).

From the coding, three primary themes established with identified sub-themes. Tables 1- 3 highlights data of the sub-themes that correlate with the three primary themes and the frequency used by participant's responses. The primary themes are (1) strategies

hospital leaders use to implement the EMR system, (2) strategies hospital leaders use to achieve quality and best practice, and (3) strategies hospital leaders use to manage change and resistance to change.

Table 1

Strategies hospital leaders use to implement the EMR system

Sub-themes	Word Count	Percentage
IT/technology	28	27
Training	32	31
Testing/test	20	19
Committee	23	22

Table 2

Strategies hospital leaders use to achieve quality and best practice

Sub-themes	Word Count	Percentage
Policies and standardization	18	36
Matrix/matrices and survey	32	64

Table 3

Strategies hospital leaders use to manage change and resistance to change

Sub-themes	Word Count	Percentage
Communicate/communication	29	48
Leadership	18	30
Stakeholders	13	22

Primary Theme 1: Strategies Hospital Leaders Use

Sub-themes support the primary theme established from the transcribed interview. The sub-themes that support primary theme 1 are IT/technology, training, testing/test, and committee. Table 1 shows the analysis of the relationship between the primary theme and sub-themes.

IT/technology. The IT department was pivotal to the successful implementation of the EMR systems. Twenty-seven percent of the leaders stated they consulted with IT regarding the decision of the implementation of the EMR systems. Partnering with the IT department was essential to the built of the system and therefore must communicate with every department and understand the functions of the organization. Participants 1, 2, 3, and 4 all explained the need to work closely with IT department for a successful build and testing of the EMR systems.

According to Participant 1, the healthcare leadership needs to know the scope of the IT department such as what things they can do and cannot do or what things are difficult and challenging for the IT department. In return, the IT department needs to understand how the healthcare leaders and doctors do things and their needs. Participant 4 explained that IT should not dictate practices but used as a tool and a support set. All participants emphasized that for a successful implementation process the IT department should play an essential role in every area of the implementation process such as collaboration, design, build, testing, training, and maintenance.

Training. All participants used training as one of the strategies for the implementation of the EMR systems. Training was mentioned as a continuous process

before, during, and after the implementation of the EMR system. The participants explained that training done correctly could cause less stress during the implementation process. P1 emphasized that the implementation process was continuous and therefore training was also a continuous process. All Participants explained that training was done using superusers or program champions who would transfer the information to managers and other end-users. The five Participants described champions as leaders or peers who communicates with the employees or peers.

When describing the training process, Participant 1 explained the trainers as superuser or champions of the EMR system. Participant 1 expressed that champions expressed the vision in their own words and then articulated the vision to their group or unit. Superusers are selected clinical staff who were trained to become trainers. Monthly newsletters and weekly two-minutes videos were sent out for staff training.

According to Participant 1, superusers must attend classes and webinars and take the information back to the managers and staff. Superusers were engaged in 120, 90, 60, 30 days, and 2 weeks pre-go-live meetings where business unit leaders reported the percentage of training each employee completed. Members of the system became "expert" superusers to provide further support. The hospital staff was committed to provide 50 staff to train early, who then participated in the hospital go live. The individuals later translate the lessons to workflow changes to the staff.

P2 mentioned that after every training the staff completed evaluation for assessment. P2 explained that the organization identified champions who after training, reports to the employees. P3 reported that the organization used superusers who were

trained to report to staff. Employees from the P3 organization given access to a fake online site that mimics the real-world environment to use as practice for better understanding. YouTube videos were the most frequent form of training medium used at the P4 organization, while P5 utilized an ongoing process for training.

Test/testing. Another strategy used by all participants was testing. The word testing used 19% of the time. All participants explained that testing was done at different stages of the implementation process to determine the success of the IT build and the adoption of the system. P3 explained testing done with end-users while the leaders focus on the adoption of the system. P1 expressed that the organization utilized a third-party consultant company to make periodic adjustments assessments.

The leaders in the organizations also used key performance indicators to test the progress of the system for changes in the quality matrix. P2 revealed that the staff completed survey and evaluation after every training, while P3 explained testing of both staff and system done on a frequent basis. P4 reported that testing was also done by the superusers who decided whether to integrate the change or not to integrate the change. The EMR system embedded in the workflow and then linked to evidence.

Committee. The five participants explained that committees established as one of the strategies to the successful implementation of the EMR systems. Table 1 shows that the word committee was used 22% of the time in the interviews. Committees were created with different individuals within the organization and used to drive the decision-making process. P1 mentioned committees such as steering committee, metrics committee, physician advisory committee, and advisory committee. The steering

committee included the Chief Operating Officer (COO) and the system president, Chief Medical Officer (CMO), Chief Financial Officer (CFO), and the Chief Nursing Officer (CNO). P4 explained the different committees as specialty committee, nurse practice committee, physician committee, and advisory group specialty. According to the participants, the various committee helps with the decision-making and the mapping of the progress of the implementation.

Primary Theme 2: Strategies Hospital Leaders Use to Achieve Quality and Best Practice

Participants explained that hospital leaders implement the EMR systems to improve patient quality of care based on best practice in the industry. The sub-themes established to form the primary theme 2 include (a) policies and standardization and (b) matrix/matrices and survey (see table 2).

Policies and standardization. The words policies and standardization were used 36% by the participants. P1 explained that to implement standardization throughout the hospital, the leaders developed over 800 policies. P1 revealed that H1 created one point of data gathering with multiple points of data sharing to establish a standardized and efficient work process within the organization. System standardization was also designed to enhance work process efficiency. P1 explained system standardization as system pharmacy and therapeutic (P & T), system health information management (HIM), system revenue cycle, and system multidisciplinary clinical governance council.

P2 mentioned decision support and alerts, to enhance best practice measures and standardization. P3 revealed automatic alert systems to check quality control, while P4

expressed that alert systems used as a safety net. All participants mentioned that standardized formulas and policies were written to create a seamless care experience of the integration of the EMR systems.

Matrix/matrices and survey. P1 expressed that matrices were used to improve population health including vaccination and quality matrix. One of the primary strategies used to enhance the quality of patient care was to develop the different matrix that maps the various process flow of the change curve and interventions. The words matrix and survey used 64% by the interviewed participants. P4 expressed that scorecards and matrices used to measure patient outcome and the results revealed a significant decrease in post-surgical rates, pro-septic rates, and medication errors. The adoption matrix target first set at 80% and then increased to 95%. All participants reported that matrices were required to measure the adoption of different processes and functions.

Kotter and Schlesinger (2008) stated that leaders should establish an open channel for employees to give feedback with continued dialog. All participants explained the evaluation process as an essential component to the understanding of the success of the implementation program. P2 and P4 described the use of the survey to evaluate staff after every training process to gain insight of the staff's understanding of the materials and provides feedback to the leaders. P2 also expressed that matrices were used to measure before and after processes and whether to adopt the adoption process. According to all participants, leaders use surveys as a strategy to obtain insight and feedback from staff and end-users and to encourage continued dialog.

Primary Theme 3: Strategies Hospital Leaders Use to Manage Change and Resistance to Change

Employees resist change because of sociological, economic, psychological, and rational reasons (Akan et al., 2016). Other resistance to change includes lack of awareness, fear of job loss, fear of the unknown and comfort with the status quo, organizational history and culture, and opposition to new technologies, requirements, and processes (Basu, 2015). Moving people out of their comfort zone when initiating change is difficult (Kotter, 2007). Resistance to change is inevitable and can be seen at the organizational, institutional, and employees level (Nilsen et al., 2016).

All participants expressed the use of employees' accountability by leadership when implementing change. P3 revealed that employees being able to see the "*why*" for the change enhanced acceptance to the change process. All participants suggested that establishing guidance and excellent communication during the change process will help to eliminate employees' resistance to change and encourage their acceptance of the new changes.

Communicate/communications. The words communicate, and communication used 48% by the participants. All participants stressed the importance of creating a vision of the future and communicating the vision during the process of the EMR implementation as essential to the success of the systems integration in the organization. Kotter (1996) stated that leaders should communicate the vision using clear and uncomplicated languages and images.

P1 PowerPoint document showed ownership strategy change as the development and execution of the change management, strategic selection of project team members, and stakeholder involvement. Included in the change strategy were governance planning, validation sessions, learning maps, wellness initiatives, and physician engagement. Longenecker and Longenecker (2014) revealed that most change initiatives in healthcare fail because of poorly planned implementation and an aggressive timeframe. P1 expressed that the organization stayed on the budget because of planned timelines and excellent communication.

P1 identified the change components embedded within the transformation process as leadership alignment, stakeholder engagement, culture, communications, and training. P1 explained that H1 used a motivational speaker and consultant to define the "*why*" and give a sense of destination and vision of the future to build the individual emotional connection and shared vision commitment. P1 expressed the importance of transparency in communication as a medium to overcome challenges regarding the change process.

P3, P4, and P5 emphasized the importance of communicating how the change will improve the work processes and patients' outcome will help to ease the acceptance of the change transition. P1 and P4 clarified the importance of transparency in communication as critical to the trust factor and acceptance from the staff. P1 referred to transparency in communication and enabling decision-makers as essential strategies to overcome resistance to change in the implementation of the EMR systems. All participants stressed the importance of communication utilizing different mediums such as face-to-face, newsletters, reports, videos, road shows, and learning map exercises.

Leadership. All participants concluded that the support and alignment of leadership are essential to the success of the implementation of the EMR systems. The word leadership used 30% of the time during the interview. P1 expressed that leadership provides support and enhance acceptance.

Within the H1 organization, a Board created with a charter including principles such as having a seamless care experience with one chart for each patient, quality based on best practice and evidence-based management, and standardization throughout the organization based on policies and formulas. According to P1, the leadership role is seen throughout the entire implementation process, before, during, and after. Key leaders represented large constituents such as the physician, nurse, and revenue. The leadership role being most dominant during training, decision-making, and communication.

P2 expressed the essential strategies for implementation success as the ability of leadership to hold employees accountable and be able to communicate the change and employees' expectations. P4 reported that having a member of leadership as an executive sponsor for the project will enable staff to see that leadership supports the project and encourage acceptance of change. The leadership will help to move the project forward.

Stakeholders. The word stakeholders used 22% by participants. The PowerPoint document received from P1 showed stakeholder engagement and involvement in the implementation process as an essential strategy in the change process. P1 expressed that leadership must first be able to identify sponsors and understand the various stakeholder groups, their location, and the common characteristics. P1 further stated that communicating to the stakeholders, responding to input from stakeholders, and

empowering stakeholder groups to own the business and service delivery processes would significantly enhance the EMR integration process. P1 explained that understanding each stakeholder group readiness for change could help to create the buy-in for change.

P3 mentioned getting the stakeholders to the table during the decision-making process, while P4 talked about involving the stakeholders during the implementation process as effective strategies for the implementation process. P4 suggested the strategy to identify the key stakeholders who will help to formulate the scope of the project as essential to the EMR integration. All participants suggested the incorporation of the stakeholders' engagement as a strategy for successful integration of the EMR systems implementation process.

Applications to Professional Practice

The main objective of this study was to determine successful strategies that hospital leaders use to implement the EMR system. The findings identified strategies of current leaders' perception concerning the professional practice of business. This study's findings may contribute to business practices by improving the quality of patient care, reduced implementation cost, and subsequent organizational operation cost. By evaluating the successful strategies to implement the EMR systems, hospital leaders can use these strategies as a template or framework to implement other technological systems within the hospital.

The change process was critical to the success of the EMR system implementation. Understanding the human factor of change for EMR implementation, as

well as the technological capabilities was significant to the change process (Boonstra et al., 2014; Safdari et al., 2015). Kotter emphasized the need for strong leadership to effect change (Pollack & Pollack, 2015). The strategies identified from the findings can be used by hospital leaders to evaluate the quality of patients' care and satisfaction.

The findings also identified training and evaluation as an effective strategy for successful EMR implementation. Hospital leaders can use this strategy to set-up different types of training methods and processes for continuous training and evaluation of staff. Successful leadership must be able to influence and engage strong leadership teams and to secure the support from physicians and the full range of staff members (Zook, 2014). Creating effective evaluation and employee feedback will foster successful implementation especially during complex change (Hibbert, 2013).

Implications for Social Change

The results of this study can influence social change by improving the quality of healthcare and patient care. The implementation of the EMR system will allow hospital leaders to improve accuracy, timeliness of results (through faster access to information), and efficiency of diagnosis and treatment. Hospital leaders have the potential to reduce organizational operation cost through improved work processes. Standardizing processes and the elimination of duplicate reports and procedures can reduce the cost of patient care. The implementation of the EMR systems can impact the community through quality health and patient care that results in a healthier lifestyle of patients.

Recommendations for Action

To implement the EMR systems, healthcare leaders need to identify successful strategies. Hospital leaders should mitigate cost, establish key performance indicators to evaluate the effectiveness of the systems, and obtain feedback from end-users to determine a successful implementation process. Based on the results of the study, I recommend the following actions:

(1) Create strategies that other healthcare leaders can use when implementing the EMR systems.

(2) Develop training courses to help healthcare leaders create a climate for change and strategies to manage change during the implementation of the EMR systems.

(3) Develop leadership training classes to help hospital leaders improve the decision-making and communication process when implementing the EMR systems.

(4) Help healthcare leaders to identify, assess, evaluate, and deploy the best strategies for EMR implementation.

I will disseminate the results of the study by distributing literature, utilizing conferences, and training to hospital leaders. Hospital leaders can use the strategies as a guide to successfully implement the EMR systems and any other technological systems in the organization.

Recommendations for Further Research

The advancement in technology has changed how hospital leaders operate in the healthcare industry. To be successful, healthcare professionals must work together to keep up with the progress of technology, maintain quality, control cost, and establish the best business practice. I suggest that continued studies regarding successful strategies used to implement EMR systems made available to other healthcare providers.

One of the limitations of this multi-case study was that the information regarding EMR implementation strategies should not be generalized and transferred to represent other hospitals strategic EMR implementation experiences. I propose that other healthcare organizations that have implemented the EMR systems in different geographic locations make available training, best business practices, and successful strategies for other healthcare facilities.

Reflections

I chose the DBA doctoral process because of its rigor and the short time in which I could complete the program. There were many times when I was frustrated, but I was determined to finish what I have started. I have no experience in the healthcare industry, however; I have many family members in nursing, and I could see the dynamic changes because of technology in the industry. I heard of the EMR systems and wanted to know more about this technology and process.

Not knowing the EMR systems made me open to learning without biases. I, therefore, followed the interview protocol and did member checking to maintain the trustworthiness of the data (Yin, 2014). The findings revealed that the information in the

literature review corresponded with the participants. I was able to get a comprehensive understanding of the EMR implementation process, the challenges, and the extensive and complex work of integrating the system in the hospital. The results emphasized the importance of vision, communication, and effective leadership. I am motivated to explore other areas such as training in the implementation of the EMR systems.

Conclusion

The findings from this multi-case study confirm Kotter's 1996 conceptual framework for hospital leaders to use the eight steps when implementing change (Kotter, 1996). From the research, the results revealed that at least four steps are essential for successful implementation (1) creating a vision, (2) communicating the vision, (3) establishing strong leadership, and (4) consolidating gains. Utilizing the successful strategies hospital leaders use to implement the EMR systems could produce quality patient care through efficiencies in hospital operations and reduced organizational operation cost. The exploration of the successful strategies hospital leaders uses to implement the EMR systems can encourage other hospital leaders to implement the EMR systems and achieve a positive outcome.

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