10-2022

Strategies Ambulatory Practice Leaders Use In Optimizing Electronic Medical Record Systems

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STRATEGIES AMBULATORY PRACTICE LEADERS USE IN OPTIMIZING ELECTRONIC MEDICAL RECORD SYSTEMS

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A DISSERTATION

Presented to the Affiliated Faculty of
The College of Graduate and Professional Studies
at the University of New England

Submitted in Partial Fulfillment of Requirements
For the degree of Doctor of Education

It was presented on
09/25/2022
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Date: 26 SEPT 2022

ABSTRACT

Electronic medical record systems (EMRs) were quickly adopted by ambulatory care practices due to federal government programs encouraging their rapid adoption and implementation. The accelerated implementation and adoption of these digital care systems introduced new forms of administrative burdens that have become negatively associated with the practice of medicine. Research regarding the challenges related to implementing and adopting EMR systems has been abundant. However, there is little research on EMR optimization strategies within ambulatory practice settings. This qualitative phenomenological study explored the lived experiences of ambulatory practice leaders and the strategies they used to optimize EMR systems. The data collected for this study included individual semi-structured interviews with senior leaders throughout a multi-site ambulatory practice in the northeastern United States. Kotter's (1996) eight-step process for leading change served as the conceptual framework for this research study. The findings revealed several themes and subthemes associated with ambulatory practice leaders and their strategies to optimize EMR systems. This study supported various concepts in leading change that can potentially offer more effective strategies ambulatory practice leaders can use to optimize EMR systems.

Keywords: electronic medical records, optimization, Kotter's eight-step process for leading change, leadership, ambulatory practice

ACKNOWLEGMENTS

I would like to thank Dr. Ella Benson and Dr. Menchini for their support and dedication throughout this entire process and journey.

A special thank you to Dr. Dan Feinberg, who has made a notable impact on my life and career, along with many others who attended the Master of Informatics program he led.

Thank you to all the research participants who made this research possible.

Finally, to my family Julie, Conor, and Leah Joy, for giving me the space, time, and freedom to explore the joys of learning and embarking on another adventure in my continued attempts at self-improvement.

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CHAPTER 1: INTRODUCTION

A shocking report in 2000 broke the silence surrounding potential medical errors occurring throughout the healthcare community (Medicine & America, 2000). Experts estimated that throughout the United States, in any given year, as many as 98,000 people die from medical errors (Medicine & America, 2000). This was a startling statistic, and the disparity between the incidence of error and the public's perception was equally alarming (Medicine & America, 2000). Researchers found that it was not that healthcare providers were bad at their jobs; rather, their good work was compromised by bad systems, and these systems needed to become safer (Medicine & America, 2000). Consequently, a call to action improved the quality of care and patient safety initiatives. This resulted in the adoption and implementation of new electronic medical record (EMRs) systems and models of care, including what became known as the Triple Aim, launched in 2007 by the Institute for Healthcare Improvement (Merry et al., 2017).

The Triple Aim initiative was designed to improve a population's health and care experience while lowering overall costs (Merry et al., 2017). For healthcare organizations to implement and successfully achieve the principles of the Triple Aim, they needed to challenge many traditions and historically held belief systems. Healthcare organizations and physicians would have to shift from working autonomously in silos to involving patients, families, providers, and other community partners in redesigning where primary care sat in the larger healthcare structure and function (Porter & Lee, 2013). This care model created a new emphasis on placing the patient at the center of the primary care model and was associated with higher forms of digital advancements in the form of electronic medical record (EMR) systems.

The proclamation of the need to support and accelerate new care model redesign expectations throughout the United States created new federally qualified incentive funding

programs to support the rapid implementation and adoption of EMRs. Congress passed the Health Information Technology for Economic and Clinical Health (HITECH) Act of 2009 to promote the use of EMR systems to facilitate technological innovativeness and process improvements in the healthcare industry (McCarthy, 2010). Furthermore, in 2015, a law was passed which stipulated that healthcare organizations that failed to comply with the HITECH Act of 2009 to promote the use of EMRs would receive financial penalties in the form of reduced fees from the Centers for Medicare and Medicaid (Holtz & Krein, 2011).

The ability of new EMR systems to better patient care, promote safe practices, and enhance communication between patients and providers, minimizing the possibility of error, inspired optimism in many top healthcare organizations across the United States (Palabindala et al., 2016). Interestingly, after the rapid implementation of EMR systems, 82% of EMR users reported improved clinical decision making. Shortly after the initial implementation period of EMR systems across the United States, research identified that 92% reported improvements in communication with other providers and their patients, and 82% of users reported a reduction in medication errors (Palabindala et al., 2016). Physicians across the United States were becoming extremely optimistic that EMRs could help revolutionize healthcare by providing more efficient and integrated ways to practice medicine, improve their professional experience, and provide better patient communication and decision making (Evans, 2016).

However, simply implementing an EMR system did not automatically result in sustained improvements leading to a more satisfying experience for healthcare organizations and the provider community. Once an EMR system is implemented, physicians and leadership must actively investigate all the potential risks for medical error, identify system failures, and ensure ongoing optimization and process improvement efforts (Aguirre et al., 2019). Organizations

needed to ensure that the leadership recognized the importance of these ongoing efforts and empowered them with the proper training and skill sets to foster an environment and culture where ongoing EMR systems optimization efforts were embraced and supported.

After the first wave of widespread EMR systems adoption and implementations, research started to indicate that the combined burden of the new delivery expectations derived from the Triple Aim and the rush to implement new digital solutions in the form of EMRs ended up increasing workflow complexities across healthcare organizations that impacted the entire provider community (Linzer et al., 2013). The accelerated implementation of EMR systems led to burdensome EMR administrative tasks, less direct patient-physician interactions, and the physician community experienced a strong sense of de-professionalization, with some feeling burnout (Collier, 2017). Arguments supporting the potential link between EMR systems and decreased physician satisfaction levels began to gain traction during the early stages of rapid EMR implementations throughout the United States (Runge, 2018). Even implementing basic EMR systems meant converting small physician practices from paper to digital, and this began to present challenges for the entire healthcare community. Formal research studies quickly began to emerge indicating the direct frustration with EMR systems and their workflow impacts across the entire provider community (Roberts et al., 2014).

While healthcare leaders and the larger physician community had initially approved the rapid implementation of EMR systems, the impact of quick healthcare redesign efforts caused unanticipated changes in workflows, resulting in physicians feeling less personally and professionally satisfied (Yen et al., 2017). A theme emerged regarding the direct role EMR systems were playing in disrupting providers' delicate balance while maintaining a healthy personal and professional work-life (Yen et al., 2017). The American Medical Association

(AMA) found that over 70% of physicians described their EMR systems as challenging to manage. Furthermore, nearly 50% associated their EMR systems with severe professional and personal challenges (Tsai et al., 2020). Although EMR systems are not the sole factor contributing to decreased physician satisfaction levels, the provider community has reached a consensus that the negative aspects of EMR systems outweigh their positive attributes (Tsai et al., 2020).

In recent years, research has shown the correlation between EMR systems and increased stress levels across the entire provider community, regardless of specialty (Downing et al., 2019). Researchers also quantified the amount of time consumption these systems demanded of a provider's workday and the effects of this, noting that "[p]roviders who [had] enough time for EMR documentation were 2.81 times more likely to show symptoms of burnout than those who reported having sufficient time" (Gardner et al., 2018, p. 109). The impact of EMR systems was more severe than administrative burdens. As one research study indicated, "providers who spent moderately high, or excessive amounts of time, on their EMR documentation at home were 1.93 times more likely to show signs of burnout over those who spent minimal time on the EMR while at home" (Gardner et al., 2018, p. 109).

Physician satisfaction became an even more important topic of interest when the AMA began investigating the effects of working conditions on physicians' abilities to keep patients safe while also providing high-quality care by utilizing EMR systems (Snyder et al., 2011). Physician satisfaction research uncovered various factors that contributed to unfavorable working conditions, including increased time pressures, chaotic work environments, lower control over work pace, increased patient loads, and high administrative burdens caused by EMR systems (Patel et al., 2018). In totality, all of these factors amounted to physicians feeling

dissatisfied, stressed, and burned out, with many questioning their decision to enter the practice of medicine altogether (Friedberg et al., 2013).

An instrumental survey the RAND Corporation conducted in partnership with the American Medical Association on the association between EMR systems and overall decreasing provider satisfaction levels inspired a newfound level of seriousness regarding the correlation between EMR systems and physician satisfaction. In 2017, data gathered from over 300 physicians revealed that physicians' attitudes toward EMR systems were directly responsible for feelings associated with physician burnout (Tsiga et al., 2017). These feelings and attitudes included strong professional dissatisfaction, emotional fatigue, depersonalization, and even a loss of enthusiasm for practicing medicine (Tsiga et al., 2017).

The RAND Corporation study also revealed the importance healthcare leadership could play in contributing to the satisfaction levels of providers. Certain sets of leadership characteristics and qualities were reported as high, including shared and aligned values; a balanced approach to new practice-wide initiatives; supporting professional autonomy; and demonstrating facilitative leadership skills that make for a more collaborative and enjoyable workplace (Beresford, 2016). EMRs as technology has become a force of nature, impacting organizations, healthcare leaders, and the more prominent provider and healthcare community. One of the most significant challenges healthcare leaders face today is how to effectively lead EMR system optimization efforts to decrease the overall administrative burdens for providers and healthcare workers, all while seeking to combat decreasing levels of professional and personal satisfaction.

Definition of Key Terms

This study used several healthcare-specific industry terms to describe and explain the importance of ambulatory practice leaders' strategies in optimizing EMRs. The following terms below are defined to understand how they are utilized in the context of the study:

Ambulatory Practice. Ambulatory practice, or outpatient care, is medical care provided on an outpatient basis, including diagnosis, observation, and treatment, within the offices of physicians and healthcare professionals (Norbeck, 2018).

Burnout. Syndrome of emotional exhaustion, depersonalization, and a sense of low personal accomplishment that leads to decreased work effectiveness (Vasilios, 2012).

Change Management. A small-scale set of approaches seeking to change given aspects of an organization's structure while keeping the broader operating system intact (Kotter, 1996).

Electronic Medical Record Systems (EMRs). A longitudinal electronic record of patient health information that can be generated by one or more encounters in any care delivery setting (Silverman, 2013).

Kotter's Eight-Step Process for Leading Change. Kotter (1996) defined the eight steps of change transformation as creating a sense of urgency, building a guiding coalition, creating a vision, communicating a vision for buy-in, removing obstacles, creating short-term wins, maintained momentum, and incorporating change into the culture.

Leadership. Within an organizational paradigm, the term leadership broadly refers to an individual's capacity to successfully impact, lead, and influence others towards a defined organizational goal or objective (Figueroa et al., 2019).

Provider. A doctor of medicine or osteopathy, podiatrist, dentist, chiropractor, clinical psychologist, optometrist, nurse practitioner, nurse-midwife, or a clinical social worker who is

authorized to practice by the state and performs within the scope of their practice as defined by state law (Health Care Provider Definition, 2021)

Transformation. The process of making organizational changes to transform the organization's very nature (Kotter, 1996).

Statement of the Problem

Healthcare as an industry has rapidly adopted digital systems, creating challenges and opportunities in how ambulatory practices can more effectively optimize EMR systems. Healthcare leaders are also facing an ever-growing, compounding, and complex task of adapting to the rapid pace of change and unpredictability of our healthcare system (Figueroa et al., 2019). Gaining a deeper understanding of how ambulatory practice leaders can more effectively lead EMR system optimization strategies can help increase employee satisfaction levels and improve the experience of the EMR systems. This qualitative phenomenological study explored the lived experiences of ambulatory practice leaders and the strategies used to optimize EMR systems.

Statement of the Purpose of the Study

The purpose of this qualitative phenomenological study was to explore ambulatory practice leaders' lived experiences and the strategies they used to optimize EMR systems. The target population comprised ambulatory leaders who had implemented and optimized an EMR system across a multi-site ambulatory practice. This study may offer implications for a richer understanding of the various strategies ambulatory practices utilize in leading change to optimize EMRs. Improving EMR system performance through optimization efforts can directly impact provider, clinical, and administrative workforce satisfaction levels (Chang et al., 2012). Improving EMR optimization may even decrease physician burnout related to cumbersome EMR-related administrative workflows and tasks, which has become a broader healthcare

industry issue (Collier, 2017). This study may contribute to the body of knowledge fostering collaboration and best practices for ambulatory practice leaders to strategize to optimize EMR systems.

Research Question and Design

This study aimed to explore the strategies ambulatory practice leaders use in optimizing EMR systems. Gaining a better understanding of the various leadership strategies utilized, or experienced, can offer insights into the change processes in leading, creating, communicating, and even removing barriers to EMR optimization efforts. The researcher focused on the experiences of senior clinical and administrative leaders regarding the process of their EMR optimization efforts. This study's guiding research question was: How do ambulatory practice leaders describe their strategies for optimizing an EMR system?

I conducted a series of semi-structured interviews (Creswell, 2013) with ambulatory practice leaders to explore the various strategies they had experienced and utilized related to EMR system optimization strategies. The standard semi-structured interview questions were meant to ascertain different strategies, opportunities, and challenges encountered across the organization's multi-site ambulatory practice toward EMR system optimization. The research participant responses could offer insights into which optimization strategies worked best, along with challenges and opportunities encountered while attempting to optimize EMR systems.

Conceptual Framework

The conceptual framework for this research is Kotter's (1996) eight-stage process for leading change, an established and recognized model for leading organizational change. According to Kotter (1996), to create a successful implementation of change, the process entails eight phases, which include: (1) creating a sense of urgency, (2) building a guiding coalition, (3)

creating a vision, (4) communicating a vision for buy-in, (5) removing obstacles, (6) creating short-term wins, (7) maintaining momentum, and (8) incorporating change into the culture. Kotter's (1996) eight-step process for leading change provided a grounded conceptual framework to more deeply understand ambulatory practice leaders' strategies to optimize EMR systems across an organization.

Kotter's (1996) change process model helps understand potential barriers to instituting new programs and catalyzing buy-in from stakeholders. In essence, approaching change as a networked and interconnected process is the cornerstone of Kotter's (1996) conceptual model. It demands a complex set of leadership styles and approaches, along with the need to create a vision (Kotter, 2012). The stages are transparent and, under ideal circumstances, followed sequentially. Missing any step in the eight-step process can dramatically impact the success or failure of the change to be implemented. Kotter's (1996) eight-step process remains a positive influence in the more significant change management research community and offers a leadership model with a practical approach to change that all types of organizations and industries can adopt for successful change management initiatives.

One area that Kotter (1996) identified as crucial in the initial phases of change is the need to develop a sense of urgency and a culture of transformation. Most successful change initiatives come about when individuals identify deficiencies in processes that might require new ways of thinking to repair. Kotter (1996) argued that leaders often fail to understand how difficult it can be to move people out of their comfort zones by changing from the usual methods. Change initiatives require creating new systems, which necessitates strong leadership (Kotter, 1996). Communicating the urgency of change is the first step of the process. This level of

communication requires leaders who can motivate others to act by recognizing how performance will improve through the new system (Auguste, 2013).

Kotter's (1996) model also considers the increasing complexities of operational systems that exist across an organization. Depending on the organizational strategy, speed, and pace of change, along with the systems used to deploy the strategy, organizations vary in their abilities to make the change management process successful and sustainable. Kotter (1996) warned that, with increased operational complexities, organizations often counterbalance the complexities of decision making and the execution of operations by implementing increased hierarchical structures and processes. However, instituting increased organizational hierarchical leadership structures and functions can create a resistance to change, slow change, adaption cycles, and especially impact the complex changes required for technology systems (Kotter, 1996).

Kotter's (1996) eight-step change model offers a more flexible method to ensure that organizational changes can be adequately adopted and implemented. Unlike other change models, Kotter (1996) also addressed an often overlooked and underappreciated cultural propensity for organizations to systematically resist change. Kotter's (1996) model accounts for an organization's ability to diagnose, address, and overcome change resistance as part of the eight-step change process. Kotter (1996) identified four reasons for resisting change: (1) not wanting to lose something of value, (2) misunderstanding the implications of change, (3) holding to a notion that change is not suitable for the organization, and (4) a low level of acceptance of change. The complex and interwoven dynamics of these four areas of resistance are themes organizations need to address just as much as the positive aspects of change management, organizational structures, and functions, through their strategic deployment processes.

Kotter (1995) also recognized the implications of how transformational change efforts can fail or stall due to: (1) culture, (2) bureaucracy, (3) politics, (4) lack of trust, (5) lack of teamwork, (6) negative attitudes, (7) lack leadership, and (8) fear of the unknown. The present research study examined key themes and subthemes related to EMR optimization strategies. Utilizing Kotter's (1996) framework can aid healthcare leaders in better identifying the opportunities and challenges associated with more effectively initiating, designing, implementing, and sustaining EMR optimization strategies across their organizations.

Assumptions, Limitations, and Scope

Based on cited research and literature reviews, it was assumed that similar challenges regarding EMRs were generally consistent throughout the United States. These same assumptions can thus be represented within the organization's practice sites and in this research study. Another assumption was that each ambulatory practice site location had fully implemented its current EMR system, thereby allowing the focus of this study to be on the opportunities and challenges related to EMR optimization strategies. It was expected that all participants for this study would be available, and that their responses would be truthful to their perspectives. Further assumptions include that the data collection, analysis, and decoding quality would reveal principal themes and subthemes related to how ambulatory leaders have led EMR optimization strategies.

As with any study, there are limitations, and this study was limited in the total number of ambulatory practices and leaders from a specific healthcare organization throughout two states in the northeastern United States. This study was also limited in sample size by the total number of leaders participating. Another possible limitation of this study was that, at the time of this research, the researcher worked for the organization. The participants might have limited their

responses based on the researcher's position and current employment status. To minimize the potential for personal bias, all research interview protocols were followed closely to ensure that all of the participants understood the study's intent and the use of information collected and analyzed.

The scope of this research project was limited to an independently owned and operated non-profit multi-site ambulatory practice across two states of the northeastern United States. Participation in this study was limited to organizational leaders who had participated in and led EMR system optimization efforts. Careful screening and eligibility criteria aided in the process of identifying ambulatory and administrative leaders and exploring their personal and professional experiences in EMR optimization efforts at this organization, constituting a critical participation prerequisite.

Rationale and Significance

The implications of this study can have a profound impact on the growing dissatisfaction with EMR systems across the entire provider community throughout the United States. Despite the initial hypothesis that using EMRs would lead to more efficient, safer, and higher quality care, a growing consensus among the provider community has demonstrated the exact opposite (Freymann, 2013). EMRs have directly interfered with the patient-provider relationship, increased administrative burdens, and contributed to an increase in professional depersonalization, now considered a pivotal contributor to physician burnout (Vasilios, 2012). The promise of EMRs has not only been unfulfilled, but they also now represent one of the most significant barriers to professional and personal satisfaction among all physicians within the United States (Shanafelt et al., 2012).

The findings of this study can offer new perspectives to healthcare leaders and organizations on how to approach the challenges, barriers, and opportunities to conducting EMR optimization efforts more effectively. As of today, most healthcare organizations have moved far beyond the implementation and adoption phases of EMR systems and are now focused primarily on how to continuously improve and optimize them. The unmet early promises of EMRs in reducing administrative burdens, increasing productivity, providing more autonomy, and enhancing interactions between patients and providers have not been fulfilled (Beresniak et al., 2016). An overwhelming majority of providers cite health information technology, specifically EMRs, as one of the leading components and predictors of professional dissatisfaction due to the additional documentation and time required within EMRs, even when compared to old paper charts (Gardner et al., 2018).

This study can also address a more serious issue in our healthcare system and the entire provider community. Healthcare professionals are facing some of the greatest challenges in their careers in attempting to balance the demands of vast computer digitization and information overload while at the same time being pushed further away from the most rewarding aspects of their work, their patients (Beresford, 2016). The significance of identifying better ways for healthcare leaders to optimize EMR systems is critical, as evidence continues to grow regarding the contribution of EMRs in decreasing levels of satisfaction, increasing the risks of burnout, and serving as a significant barrier to the lack of joy in practicing medicine, regardless of the specialty of care (Sinsky et al., 2013).

Summary

Chapter 1 defined the research problem, the purpose of the study, the main research question, the conceptual framework, the assumptions and limitations, and the significance of the

study. Although many benefits emerged from the adoption and implementation of EMR systems, the unfulfilled promise and administrative burdens left behind are a challenge ambulatory practice healthcare leaders must find new and improved ways to overcome. Healthcare leaders and organizations must discover more progressive ways to lead EMR optimization strategies to overcome the complex challenges associated with EMR optimization efforts. Optimized EMR systems can empower healthcare providers to spend more time with patients and improve the quality of care and experience for patients (Arndt et al., 2017). Research is lagging in offering new perspectives and strategies for how healthcare leaders can optimize EMR systems successfully. The next chapter offers a more detailed review of literature on EMR systems benefits, incentivized adoption, challenges, the many complex factors influencing the perceptions of EMRs, and models of leadership in relationship to change management.

CHAPTER 2: LITERATURE REVIEW

The purpose of this qualitative phenomenological study was to explore the lived experiences of ambulatory practice leaders and the strategies they used to optimize electronic medical record (EMR) systems. The following literature review offers background information for the development of this study across five supporting sections: (1) the conceptual framework; (2) the review of EMRs, exploring the background of these systems, their benefits, and challenges; (3) an exploration of the factors influencing perceptions toward EMR systems; (4) understanding factors influencing healthcare practices; and (5) a review of different change methodologies and cycles. The conceptual framework emphasizes Kotter's (1996) eight-step change management model, which served as the reference point for analyzing the data gathered from interviews with key leaders on strategies for optimizing EMR systems. Lastly, the conclusion summarizes Chapter 2 and introduces the importance of the research design method used to complete this study.

Conceptual Framework

Kotter's (1996) first step involved creating a sense of urgency. Kotter (1996) noted that over half of organizations are not able to create enough urgency to prompt action. Urgency is crucial to gaining the necessary cooperation, yet, without the appropriate levels of motivation from people, all the efforts will go nowhere (Kotter, 1996). Kotter (1996) emphasized that as many as 75% of employees need to believe that considerable change is essential. Kotter's (1996) model also implies that new forms of leadership are necessary to ensure that people can begin to overcome any rigid resistance. Change is more likely to be successful when a dynamic leader can offer new insights and different motivation levels (Kotter, 1996). This change model can succeed

in bringing transformation throughout an organization when the change can be repeated, encouraged, and reinforced by the leadership.

Kotter's (1996) second step involved building a guiding coalition. This step requires an organization to assemble a specific group of leaders with enough power to influence change efforts while encouraging groups to work together as a team (Kotter, 1996). Regardless of the organization's size, the guiding coalition for change must have at least three to five influential people to lead the change effort (Kotter, 1996). However, a larger organization might require a coalition of many more leaders to generate urgency and to impact the border culture required for change (Kotter, 1996). A guiding coalition must also include members who are not a part of the senior management team and staff outside of the typical hierarchies of command (Kotter, 1996). Organizations that fail at the second stage have a history of isolating change efforts to only those at the very top level of the organization (Kotter, 1996). Frontline leadership involvement will increase the organization's chances of expanding the desire for change to occur (Kotter, 1996).

Kotter's (1996) third step involved creating a vision that encompasses the need for change and how the future will look. The guiding coalition behind the change needs to develop a relatively easy way to communicate, and it should also appeal to customers, stockholders, and employees (Kotter, 1996). The vision also serves other important purposes: first, by setting the stage in the general direction of the change; second, by properly motivating people to take appropriate action; and third, by coordinating the actions of specific individuals at specific points in time (Kotter, 1996). Vision is also contextual; it is defined and specific to an organization. Ensuring simplification in the vision is crucial, as Kotter (1996) warned that employees are less inspired by heavy details and clear marching orders.

Kotter's (1996) fourth step involved communicating a vision for buy-in. This step requires a delicate balance in the art and science of utilizing every messaging vehicle to comminate change across an organization (Kotter, 1996). Several key elements are required to effectively communicate the vision, including repetition, explanation, the use of multiple forums, and leading by example (Kotter, 1996). The guiding coalition needs to lead this effort by setting the right example, walking the walk, and talking the talk (Kotter, 1996). Kotter (1996) emphasized that communication involves deeds and words, and that role modeling is a form of communicating vision.

Kotter's (1996) fifth step involved removing obstacles by empowering others to act on the vision. The first action in this step requires eliminating any obstacles or barriers to the change. Removing barriers might involve changing organizational systems or structures (Kotter, 1996). It may also include allocating more money, time, or support to make the change effective (Kotter, 1996). Kotter (1996) emphasized avoiding confusion about the act of the change itself, as this can be a distraction to leaders and employees regarding the true purpose of the change. Furthermore, performance approval systems and compensation models need to align with the change, as they encourage the right behavior and incentive structures to support the desired change, and this is a reinforcement mechanism (Kotter, 1996).

Kotter's (1996) sixth step involved creating short-term wins. Complete transformation can take extensive time and effort, as can the removal of obstacles for change to occur (Kotter, 1996). Loss of momentum is a significant factor, as most employees will not continue the change effort if they continue to work hard and do not see evidence of success in their actions (Kotter, 1996). However, key stakeholders and employees can be encouraged in change by showing progress with incremental and measurable wins. It is essential to plan for visible improvements

and to recognize and reward those involved in the change effort (Kotter, 1996). Leaders must promote short-term gains to bolster motivation, gain confidence, and remove potential obstacles (Kotter, 1996).

Kotter's (1996) seventh step involved maintaining momentum, which can prorogate in employees feeling empowered to produce more change. It is essential to communicate even the most minor successes, while not declaring victory too soon (Kotter, 1996). For change to sink in profoundly amongst the change agents and into an organization's culture, it can take years. Successful efforts use a combination of credibility through short-term wins and ensuring more significant problems can be tackled simultaneously (Kotter, 1996). Furthermore, visualizing progress, eliminating unnecessary procedures, and creating forums to openly discuss where things are going well and where there are areas in need of improvement across the organization can help maintain the momentum of the change management efforts (Kotter, 1996).

Finally, Kotter's (1996) eighth step involved incorporating change into the culture. Leaders must ensure the new change is long-lasting and that all existing and new management buys into it. Change tends to stick when the majority believes, *this is simply the way we do things around here* (Kotter, 1996). Two crucial factors are essential in making changes part of the organizational culture. First, the people must demonstrate how the changes have helped improve organizational performance (Kotter, 1996). Second, it is critical to ensure that the next generation of organizational leaders and staff believe the new way embodies how they should work (Kotter, 1996).

Research has validated Kotter's (1996) eight-step model for leading change, with general agreement on the broad steps and the robust nature and contextual themes representing each step. Research is plentiful across healthcare and other industries on the eight steps and their

effectiveness in successful change management efforts. However, scholars have also debated the model and whether the eight steps of change need to occur in a continuous sequence for change efforts to be successful. Studies support that changes can occur at different points in time, in a nonsequential manner, and must be examined individually (Joseph Galli, 2018).

Kotter's (1996) model, however, does account for a broader lens than simply following each step sequentially. Although Kotter (1996) clarified that optimal results and success require all steps to occur in sequential order, thoroughly completing each step, no matter the order, can still result in transformational change at the leadership, staff, organizational, and cultural level. Kotter (1996) realized that successful transformational change occurs when the organization, leadership team, and staff come to believe that this is the way it has always been done.

The Study's Relation to the Conceptual Framework

Utilizing Kotter (1996), this study connected the conceptual framework of the eight-step model to the literature review, methodology, and results of the study. Kotter's (1996) eight steps were used as the framework and model to assist in interpreting the meaning of the data collected. Additionally, Kotter's (1996) theory was used to construct themes and subthemes to conceptualize the thoughts and ideas from ambulatory practice leaders to gain deeper insights into the strategies healthcare leaders use to optimize EMR systems. The interview data were associated with Kotter's (1996) eight-step theory to ignite the emergence of complex themes regarding EMR optimization generated from the semi-structured interview responses from each participant. Identifying emergent themes can help answer the overarching research question: How do ambulatory practice leaders describe their strategies for optimizing EMR systems?

Electronic Medical Record Systems (EMRs)

EMR systems are designed to replace traditional paper medical records and provide a legible, organized method of recording and retrieving patient information at its most basic level. As Ajami and BagheriTadi (2013) stated, "[a]n EMR is one or more computerized clinical information systems that collect, store, and display patient information" (p. 131). An EMR also allows efficient retrieval and access to patient data, including notes, laboratory results, and prescription records (Holtz & Krein, 2011). However, EMRs are more than just efficient electronic filing systems for patient records. They can include patient safety and provider support features, such as computerized clinical decision support (CDS), computerized provider order entries (CPOE), electronic medication administration records, electronic medication alerts, diagnosis codes, and billing capture (Horning, 2011). EMRs have become the centralized repository and electronic documentation records that nearly all providers throughout the United States utilize to capture all patient care visits and encounters.

The foundation for current EMRs is rooted in work from academic medical centers dating back to the 1960s seeking to develop simple applications that could house and manage patient information in a centralized and digital format. The federal government also developed applications, which led to the most extensive scalable EMR system ever deployed by the US Department of Veteran Affairs in the 1970s (Silverman, 2013). After two decades of EMR development efforts by private industry, academic medical centers, and the US Department of Veteran Affairs, the Institute of Medicine's analysis of paper to digital health records in 1991 began to formally advocate for the broad adoption of computer-based patient records (Havens & Boroughs, 2000). In 1999, the Institute of Medicine published its landmark study of medical errors: "To Err is Human: Building a Safer Health System." This report emphasized how health

information technology can help reduce medical errors by facilitating higher-quality records with the added benefit of transferring important patient information (Havens & Boroughs, 2000). The report's findings indicated that as many as 98,000 people died each year due to medical errors, with a central theme of inadequate systems leading to most errors, and not bad people. It became clear that these systematic medical errors related to a broad range of patient safety issues by implementing and adopting EMR systems throughout the United States (Havens & Boroughs, 2000).

Today, EMR systems have become the digital equivalent and standard of legal patient medical records. These systems have developed into various technologies and user experiences across hospitals and ambulatory practice of care environments. Several different EMR vendors offer computerized systems to cover both in-patient and out-patient services. EMRs are nearly universally used in healthcare systems and practices throughout the United States, having achieved an over 95% adoption rate among office-based physicians (Henry et al., 2016). It can take physicians up to six months to fully train and become genuinely proficient, as EMR systems can be challenging to learn (Porter & Lee, 2013). However, once a physician is fully trained, the system allows for a complete examination of the patient's clinical information in a relatively short time, as compared to paper records (Shanafelt et al., 2016).

Patients also have access to much of the information within these digital health records, which can help ensure adherence to various therapeutic programs and interventions. Complex medical terminology can sometimes confuse patients, and explanations may require additional physician time (Graham & Brookey, 2008).

EMRs also clearly list appointments and test requests, benefiting clinicians and patients (Graham & Brookey, 2008). All the EMR systems in the United States are highly sophisticated and will undoubtedly become even more so in the future.

EMR Benefits and Functions

The advantages that were always intended by the implementation of EMR systems, and that can be realized, including: (1) helping to reduce medical errors by utilizing computerized prescription entry; (2) predicting drug interactions and displaying warnings for healthcare providers; (3) assisting clinicians in reconciling patient medications; and, most importantly, (4) maintaining a longitudinal and legible medical record (Dexheimer et al., 2017). Theoretically, EMR systems are meant to streamline patient care visits to be shorter and better organized, allowing for increased patient face-time (Menachemi, 2012). Another advantage of EMRs is the ability for different providers within the same health system, or even between other facilities within the community, to see patient information sequentially (Fellner et al., 2012). Patients also perceive EMR systems as advantageous due to the ability to access their medical information quickly, from home, and to interact directly with their physician and clinical staff (Manca, 2015).

One of the more promising aspects of EMR systems is their ability to give healthcare providers instant access to other clinicians' evaluations and access to the most sophisticated diagnostic tests and images. From an academic perspective, EMRs have become an excellent source of extensive research data as they compile massive amounts of clinical information. Overall, the initial benefits of legible orders and the consolidation of vast quantities of transcribed materials have reduced living in a single digital source record (Pastorino et al., 2019). EMRs have reduced physician error and increased patient safety by eliminating errors, resulting in an improved quality of medical documentation backed by an automated alert system that

ensures proper dosage and drug utilization are administered to patients (Manca, 2015). Ultimately, medical documentation in EMR systems is clear and legible, reducing confusion for the entire clinical care team.

EMR systems thus have the potential to provide substantial benefits to physicians, clinic practices, and health care organizations. These systems can help facilitate and enhance workflows, improve the quality of patient care, and increase patient safety (Sutton et al., 2020). In 2003, the Institute of Medicine identified eight essential functions all these systems should contain to contribute to increased quality of care, safety, and efficiency (Horowitz et al., 2003). These primary functions included:

- physician access to patient information, including diagnoses, allergies, lab results, and medications.
- access to new and past test results among providers across multiple care settings.
- computerized provider order entry.
- computerized decision-support systems to prevent drug interactions and improve compliance with best practices.
- secure electronic communication among providers and patients.
- patient access to health records, disease management tools, and health information resources.
- computerized administration processes, including scheduling and billing systems; and
- standards-based electronic data storage and reporting for patient safety and disease surveillance efforts.

EMR Incentivized Adoption

The American Recovery and Reinvestment Act of 2009 was a U.S. stimulus package that allocated over 19 billion dollars to increase the adoption and usage of EMRs by physicians and hospitals under the Health Information Technology for Economic and Clinical Health Act, also known as the HITECH Act. In 2011, incentive payments were made to eligible professionals, hospitals, and critical access hospitals participating in Medicare and Medicaid programs that adopted and demonstrated a meaningful use of certified EMR technology (Roberts et al., 2014). The specific criteria needed to demonstrate meaningful use of EMR technology included: using technology to improve quality, safety, efficiency; reducing health disparities; engaging patients and families; and improving care coordination and population and public health, along with maintaining the privacy and security of patient health information (Silverman, 2013).

By 2015, more than 400,000 healthcare providers received payment for participating in the Medicare and Medicaid Electronic Health Records Meaningful Use Incentive Program (Tai-Seale et al., 2017). The Center for Medicare and Medicaid Services published a final rule specifying more phases of the program with increasingly stringent criteria for eligible medical professionals, hospitals, and critical access hospitals to participate in subsequent stages. A key aspect of these increased requirements was reporting clinical quality measures across various healthcare services to all eligible participants. The increase in clinical quality measures and reporting tied to the final stages of the Meaningful Use Incentive Program resulted in an even greater acceleration of EMR technology throughout the United States (Beresford, 2016).

The results of the U.S. Medicare and Medicaid Electronic Health Record Incentive Program created new challenges. Less than a decade prior, “nine out of ten doctors in the U.S. maintained their patients’ records by paper and stored them in color-coded files” (Runge, 2018,

p. 2). By the end of 2017, “approximately 90% of office-based and hospital physicians nationwide were utilizing electronic medical records” (Runge, 2018, p. 2). However, the motivation of providers and healthcare organizations to attain more than 30 billion dollars of incentive monies toward implementing, adopting, and using EMRs also created an enormous list of workflow requirements that made it increasingly challenging and less rewarding to care for patients (Babbott et al., 2014).

EMR Disruptions

Like all new technologies adopted rapidly, EMRs introduced severe disruptions to healthcare as an industry and to physicians as a workforce. Clinical and administrative end-users need to be trained on a continual basis to most effectively use EMRs, and this requires considerable time and changes in systems and in clinical and physician workflow practices (Chang et al., 2012). Furthermore, navigating and creating EMR-structured clinical notes require more time to document than handwritten notes from years past (Beresniak et al., 2016). In addition, the variability of different EMR systems has created system inter-operability issues and vast inabilities for EMR systems to effectively communicate, so information does not flow as easily from one practice to another (Malley, 2009). Communication between systems is an issue, and electronic messaging between physicians is also a significant drawback, resulting in a lack of face-to-face or phone-to-phone conversation with clinical peers (Malley, 2009). EMR systems have created a forum and communication interface with an inability to have a give-and-take conversation or question-and-answer scenario between physicians and care teams (Malley, 2009). Moreover, EMR systems have created a muted communication style among physicians who must trust that the structured information they are providing is what the other providers need and can hopefully be interpreted without confusion (Montague & Asan, 2014).

EMR Rapid Adoption Impacts

The rapid rate of EMR adoption started to negatively impact physicians, with many providers suffering from reduced efficiency, increased clerical burdens, and even experiencing an increased risk of professional burnout (Dechant, 2017). Early on, physicians reported spending approximately 33% of their work hours performing direct clinical work and 49% completing clerical tasks and interfacing with the EMR (Friedberg et al., 2013). Over time, increased reports of provider time consumed by EMR systems became part of normative work hours and expectations. Studies emerged and quantified that physicians spend about two hours of clerical work for every hour of clinical work on EMR-related tasks (Friedberg et al., 2013). Although physicians generally agreed that the broad-scale adoption of EMRs provided many benefits to their patients, including reduced medical errors and increased access to their entire medical records, many experienced the increasing administrative burdens generated by these same systems (Horowitz et al., 2003).

Factors Influencing Perceptions Toward EMRs

Some physicians willingly embraced EMRs, while most others were persuaded by government incentive programs intended to increase the uptake and adoption of EMR technologies. In both cases, the result was that EMRs created burdensome work, as reported by most physicians throughout the United States. In 2010, in the early stages of meaningful use, a survey of EMR physician use reported that 61% of physicians were satisfied or very satisfied with their EMRs, but in 2014, in the middle stages of meaningful use, this dropped to a 34% satisfaction level (Rao et al., 2011). Furthermore, 55% of the same physicians in 2014 reported that they found their EMR difficult or very difficult to use, and 72% found their EMR to increase their workload (Rao et al., 2011).

EMR Impacts to Practice Workflow

Research began to document physicians' changing perceptions of how medical practice was impacted by the implementation of EMRs. Physicians started reporting changes to workflow, as their once coveted exam rooms became an obstacle to providing the most effective and efficient patient care (Lin, 2012). Physicians began reporting spending less time with patients and more time facing a computer screen (Lin, 2012). Research studies confirmed these initial perceptions, finding that physicians within an ambulatory care setting spent an average of 3.1 hours on office visits and 3.2 hours within the EMR (Asan et al., 2014).

Physicians now split their time evenly between patients and EMRs, a change in practice that has not only perpetuated negative perceptions toward EMRs but potentially influenced physicians' overall personal and professional satisfaction levels. Interestingly, the link between these EMR clinical system design changes and professional satisfaction levels has "become normative across all physicians regardless of age, race, ethnicity, or gender" (Asan et al., 2014, p. 898).

In 2016, during the height of meaningful use incentive program adoption, a physician timed study within an ambulatory practice found that "physicians spent 27% of their total time on direct clinical face time with patients and 49% of their time on EMR related to desk work" (Sinsky et al., 2013, p. 274). While in the examination room with patients, physicians also reported spending "52% of their time on direct clinical face time and 37% on EMR and desk work" (Sinsky et al., 2013, p. 274). Lastly, according to this study, "21 of the 57 physicians reported one to two hours of after-hours work each night devoted mostly to EMR tasks" (Sinsky et al., 2013, p. 267). In totality, "every hour a physician provided direct clinical face time in

providing care for patients, nearly two additional hours were spent with the EMR doing desk work within the clinical workday" (Sinsky et al., 2013, p. 265).

EMR Administrative Burdens

Over the past decade, the healthcare industry has placed increased demands on physicians by setting expectations for more intense workdays, a more demanding pace, greater time pressures, and emotional intensity, which all place physicians in stressful environments. According to research referenced by the RAND Corporation, physicians found data entry within EMRs cumbersome and time-consuming, with many expressing extreme frustration and even hate toward their respective EMRs (Arndt et al., 2017). Other problems described by the research included information overload, non-intuitive user interfaces, issues with documentation due to template-based notes, and challenges with exchanging and sharing information between EMRs and the local community (Evans, 2016). Many physicians also reported that more facetime with EMR screens meant less connectedness with patients and fewer discussions with colleagues, resulting in a feeling of professional isolation (Montague & Asan, 2014).

Reports of physicians sitting side-by-side doing EMR data entry and interacting with machines as opposed to each other were often cited (Montague & Asan, 2014). A study in 2014 involving 370 primary care physicians and 92 clinic managers in New York City had similar insights (Robertson et al., 2017). Physicians who reported moderate use of EMRs were less satisfied with their jobs and had higher stress levels. Physicians who fell into the high-use EMR category reported more significant time pressures, which were also associated with "significant feelings of burnout and dissatisfaction accompanied with a strong intent to leave the practice of medicine altogether" (Robertson et al., 2017, p. 481).

Concerns also emerged regarding EMRs' ability to monitor physicians' work activities and audit the quality of care they were providing to their patients more closely. An EMR's ability to offer a more intimate lens into physician practice patterns and workflows inadvertently changed familiar and comfortable routines (Lin, 2012). Many physicians perceived EMRs as intrusive and considered this level of oversight to result in a loss of productivity. Increased levels of data entry to support the requirements of data collection, patient safety, and quality standards changed practice behavior and the way physicians interacted socially (Horowitz et al., 2003). Physicians were now required to undertake time-consuming typing, which required a higher cognitive load than handwriting (Horowitz et al., 2003). In aggregate, to meet the learning curve associated with EMR and changes in the administrative practice patterns of care providers, changes in attitude began to surface in the form of resentment and even resistance (Lin et al., 2011).

Negative perceptions and attitudes emerged between physicians and their respective EMR systems. The lines between new physician workflows and new practice expectations and their respective EMRs became blurred and complex. EMRs have created an increased need for administrative and clerical time and decreased patient-facing time, which has resulted in a perceived loss in how the art and science of medicine should be practiced. Research shows a strong correlation between EMRs and the decrease in medical staff satisfaction by turning physicians into data-entry clerks and increasing their after-hours clerical burdens (Asan et al., 2014). The downside of widespread EMR adoption has become a topic of interest for many physician organizations due to the linkage between EMR usage, decreased satisfaction levels, and overall concerns regarding professional and personal wellness. In a 2016 survey of over 6,000 physicians in the United States, the Mayo Clinic Proceedings found that "84% of

physicians who used an EMR reported feeling less satisfied with the amount of time they spent on EMR-related clerical tasks and were also at a higher risk of professional burnout" (Runge, 2018, p. 2).

EMR and Provider Burnout

Arguments supporting the potential association between EMRs and decreasing physician satisfaction levels began to gain advocacy during the early stages of progressive EMR implementations throughout the United States. Even basic EMR systems meant to convert physician office practices from paper to digital made many physicians and healthcare professionals uncomfortable, as studies began to indicate deep frustrations regarding EMR systems. The EMR system challenges related to physician perceptions, attitudes, and adoption included high financial costs, complex installation and technical support, a lack of overall technology competencies by physicians and staff, misaligned digital changes in clinical and administrative workflows, physicians' attitudes towards change, and physicians reporting spending more time per patient, and these surfaced for months or even years after implementing an EMR system (Horowitz et al., 2003).

As mounting research began to correlate EMR experiences to decreases in physician satisfaction levels, a newfound level of concern regarding this topic emerged. It became clear that physicians' perceptions and attitudes toward EMR systems were directly attributed to and responsible for decreasing physician satisfaction levels and were becoming a significant contributor to physician burnout. Physicians began citing EMRs as a leading contributor to decreased professional satisfaction levels and burnout (Dyrbye, 2016). According to a survey of more than 15,000 physicians in the United States, "approximately 42% of physicians reported feeling burned out" (Dyrbye, 2016, p. 841).

Physician burnout is defined as “a long-term stress reaction characterized by depersonalization, including cynical or negative attitudes toward patients, emotional exhaustion, a feeling of decreased personal achievement, and a lack of empathy for patients” (Dyrbye, 2016, p. 839). In partnership with researchers, physicians throughout the United States began to study the increasing numbers of clerical, administrative, and workflow changes embedded within EMRs by systematic clinical practice design changes. Consequently, EMR systems were associated with increased physician-reported stress levels, perpetuating professional burnout and, for some physicians, creating a desire to leave the practice of medicine altogether (Collier, 2017).

Combating Provider Burnout

Physician burnout has even caught the attention of the AMA. It has recommended system-based approaches to help reduce physician burnout and increase overall professional satisfaction levels (Linzer et al., 2015). These interventions include “implementing team-based approaches to care, enhancing communication between physicians and teams through structured huddle time, developing clinician float pools to cover life events, including scores for physician satisfaction and well-being in institutional success metrics, allowing more flexible work schedules, and creating a wellness committee and infrastructure” (Linzer et al., 2016, p. 1107).

Interestingly, of all the recommendations given by the AMA, organizations that committed to a team-based model of care to help reduce burnout have shown the greatest ability to “create time for physicians to think, be listened to, and increase relations amongst peers and colleagues” (Linzer et al., 2016, p. 1107). Scheduled huddles that can enhance communication between team members are also critical, as they can further improve relationships among team members (Linzer et al., 2016). Additionally, they provide an opportunity to anticipate the needs

of patients, to prepare for potential changes in staffing needs, and to anticipate any local administrative needs to make the day run more smoothly (Rosen et al., 2018). Finally, drawing more attention to the importance of physician satisfaction and well-being levels through programs and committee structures requires a commitment from senior organizational leadership.

Another strong recommendation by the AMA includes the healthcare leadership making the business case for physician satisfaction and well-being, improving workflow efficiency, establishing measurement systems to predict burnout, and reducing clerical burdens introduced by EMRs (Collier, 2017). Ultimately, what is not clear from the research and literature reviews is the potential of external variables beyond EMR administrative and functional design burdens that could be directly contributing to or even exacerbating decreasing physician satisfaction levels and burnout. One crucial variable is the direct impact specific physician leadership characteristics and behaviors can have on the perceptions and attitudes toward EMRs, along with the potential linkages between physician leadership, EMRs, and physician satisfaction levels leading to complete burnout.

Factors Influencing Healthcare Practices

Ambulatory practice and care are among the most important aspects of the larger healthcare industry throughout the United States. As a result of this increasing growth, ambulatory centers now make up 58% of recently constructed and planned projects nationwide (Kumar & Parthasarathy, 2020). Ambulatory care is an ever-evolving category of healthcare delivery and is defined as medical care provided on an outpatient basis. Ambulatory care encompasses diagnosis, observation, consultation, treatment, intervention, and rehabilitation services, with ambulatory patients typically seeing their primary care physician semi-regularly

for quick visits (Kumar & Parthasarathy, 2020). However, many factors include healthcare practices, including local healthcare leadership and the impact on provider satisfaction, evolving physician leadership roles, healthcare providers' level of autonomy, practice leadership, and culture. The following sections review the factors mentioned above and their important influences on today's healthcare providers and practices.

Provider Satisfaction and Leadership

Research suggests a strong link between provider satisfaction levels and the direct provider supervisors' leadership characteristics and behaviors (Shanafelt et al., 2021). The Mayo Clinic's interest in physician satisfaction and well-being prompted a study of nearly 3,000 physicians across three campuses in three different states. Physicians were asked to rate themselves on overall satisfaction and burnout levels, but the survey also reviewed the impact of leadership, including of physicians' immediate supervisors. Although the research indicated a solid link between well-being and how physicians rated their direct leaders, 40% of physician respondents reported at least one symptom of burnout (Patel et al., 2018). Physician satisfaction levels, even among those directly combating signs and symptoms of burnout, were directly associated with the physicians' direct leaders' leadership characteristics and behaviors (Montgomery, 2016). A heightened awareness of physician leadership can impact physician satisfaction levels, even combating burnout. Further evaluation of the possible links between physician leadership and its influence on perceptions and attitudes toward EMRs is needed.

Evolving Physician Leadership

Traditionally, physician leaders are selected based on experts in their respective fields of study, as opposed to whether they necessarily have the appropriate experience, training, and qualifications to be effective leaders (Shanafelt et al., 2015). The most effective leadership

characteristics and behaviors identified within the Mayo Clinic study centered on leaders being able to inform, engage, and empower the physicians they led (Shanafelt et al., 2015). Other characteristic indicators of leadership success within the study pointed to qualities of consensus building and being open to new ideas and opinions (Shanafelt et al., 2015). These leadership characteristics signaled a different and opposing perspective to that which healthcare administrators and physician leaders have traditionally upheld. In many healthcare organizations, "physicians are appointed to leadership roles based on the number of published research papers and even how cutting-edge their practices or procedures are perceived to be" (Rahman et al., 2011, p. 86). These qualities might make for great physician innovators but are not necessarily directly associated with excellent leadership skills and abilities (Rahman et al., 2011).

Another important consideration is the selection of a physician champion in leading initiatives or transformational changes. An effective physician champion can help develop and promote a clear vision of an improved future, enlist the support of the physicians and staff, drive the process change needs, and manage the cultural changes required (Clay-Williams et al., 2017). A physician leader also needs to act as a champion, and this requires a strong sense of political acumen with an ability to change communication styles based on the audience (Clay-Williams et al., 2017). Physician champions who end up leading complex and successful technology implementations have been shown to illustrate strong communication practices with an ability to understand their organization (Holtz & Krein, 2011). The role of physician leadership is evolving due to many long-held belief systems and standards. However, as both internal and external environmental factors change around the broader healthcare industry, the role and expectations of leaders are also changing.

Practice Autonomy

Physicians today have less autonomy than in years past due to the evolving expectations of their roles. This rapid change in practice structure and function has also brought about inherent changes and expectations for physicians as leaders. Physicians have historically been trained to be critical thinkers and problem-solvers. Good physician leaders can take these baseline skill sets and learn to engage physicians for input, even empowering others to develop their solutions (Shanafelt et al., 2012).

As healthcare organizations throughout the United States have consolidated due to increases in market competition, what started out as small changes have become seismic changes that have impacted the daily lives of the staff and the culture and practices of the workplaces in which they operate. Over the last decade, healthcare organizations have begun to consolidate their practices and to partner with larger local systems, and "75% of physicians are now employed by various larger healthcare organizations and systems" (Hardavella et al., 2017, p. 132). These changes in the healthcare landscape point to a profound change from the days when physicians ran small groups or were even able to operate independently within solo practices.

The larger healthcare ecosystem will continue to challenge the concept of practicing autonomously. These changes can have significant impacts on the daily routines of physicians and staff throughout any type of practice. As healthcare consolidation continues to proliferate throughout the United States, one of the common areas of immediate impact is when physicians and staff are required to update or change EMR systems. Changes to EMR systems, or even the adoption of a new system, are often perceived by physicians and staff as lacking input, loss of control, and further their sense of loss of autonomy (Patel et al., 2018).

Practice Leadership

Physicians now employed within more extensive practice settings have reported the importance of leadership in how it affects their level of professional satisfaction in two important ways. First, higher levels of physician satisfaction were reported when physicians' values were generally aligned with those of their leaders (Shanafelt et al., 2021). Positive values and attributes represented by physician leaders not only impacted approaches to clinical care but also enhanced physician satisfaction levels due to increased feelings of shared understanding, support, and alignment (Shanafelt et al., 2021). Second, physicians reported improved professional satisfaction when physician leaders embraced a balanced approach to practicing decision making, emphasizing physicians' ability to maintain a certain level of autonomy whenever possible (Shanafelt et al., 2021). Both alignment and participation in decision making are key ingredients for physicians and staff within a practice to feel engaged with emerging or new types of leaders overseeing ambulatory or other types of healthcare practices.

Practice Culture

The healthcare landscape has shifted significantly with an increase in mergers and acquisitions, causing many independent medical practice groups to become part of larger care systems. The importance of practice culture and having local leadership create a culture of collegiately, fairness, and respect is critical to overall physician satisfaction (Friedberg et al., 2013). Physicians reported that relationships with colleagues and providers outside the practice, relationships with patients, relationships with payors, and strong relationships with leadership are all components that impact their local practice culture (Friedberg et al., 2013). Physician and administrative leaders who modeled frequent meetings and huddles fostered greater collegiality and a stronger sense of trust (Norbeck, 2018). Furthermore, an emphasis on fairness and respect

for all relationships inside and outside the practice setting created higher physician satisfaction levels (Norbeck, 2018). Practice culture is essential in fostering an environment where successful change and transformation can occur. Different change management models and concepts are important to understand, especially considering both external and internal environmental factors of complex practice cultures.

Models of Change Management

Change management models are concepts, theories, and methodologies that provide an in-depth approach to organizational change. They aim to provide a guide to making changes, navigating the transformation process, and ensuring that changes are accepted and put into practice (Sartori et al., 2018). Whether those changes apply at a company-wide level, within specific departments, or anything in-between, change management frameworks, methodologies, and cycles are designed to make the changes easier to implement and to solidify the change as the new norm (Sartori et al., 2018). Although many leading change management frameworks exist, not all have encompassed the level of detail with diagnostic capabilities to understand which components of the change management cycle are proving adequate or insufficient. Furthermore, some change management methods are grounded more in the behavioral reactions to change at an individual level (Goodridge et al., 2015).

A variety of change models focus on anticipating resistance to change or the process of overcoming change decisions that some, or many, throughout the organization fundamentally disagree with. Although Kotter's (1996) change model is the foundational conceptual framework for this study, understanding other change models is important given the complexities of different healthcare organizations and cultural environments. The following section examines various change management models, including Kotter's (1996) change model, Lewin's (**add**

year) three-phase change model, the ADKAR change model, the Kübler-Ross change curve, the Satir change model, Maurer's three levels of resistance and change, and the Deming cycle of change, also known as, Plan-Do-Check-Act (PDCA) cycle.

Kotter's (1996) Eight-Step Change Model

Developed by Kotter (1996), the eight-step change model for change management is divided into eight phases, which include: (1) creating a sense of urgency, (2) building a guiding coalition, (3) creating a vision, (4) communicating a vision for buy-in, (5) removing obstacles, (6) creating short-term wins, (7) maintaining momentum, and (8) incorporating change into the culture. Kotter's (1996) eight-step change model allows for a deeper understanding and diagnosis of where change management processes occur successfully and where they can break down. The model also emphasizes the importance of leadership and critical leadership positions across the organization responsible for eliciting the needed change, creating the vision, building enthusiasm, and removing critical barriers, and it provides a checklist that serves as a concert guide to implementing change and tracking progress (Kotter, 1996). For these reasons, Kotter's (1996) change management process served as the conceptual framework to analyze ambulatory practice leaders' strategies to optimize EMR systems.

Lewin's (1951) Three-Phase Change Model

Lewin's (1951) model has three phases that break macro changes down into more manageable chunks; they are unfreeze, change, and refreeze. Lewin's (1951) model states that you must first unfreeze the current processes and analyze how improvements can be made for everyone affected to understand the need for change. Next, making a change requires employees to be guided through the transition. Still, the leadership details and capabilities outlined in this critical intermediary step lack specific detail in this model, making it difficult to understand and

diagnose the importance of this key step. Once the changes have been deployed and optimized according to employee feedback, the leaders must solidify or refreeze the new status quo. Lewin's (1951) model involves spreading the change phases over extended periods to help overcome resistance and to provide adequate training. This model is most effective when there is strong support from the senior leadership. During the stages of change, it is also important to diagnose where and when change management might have failed in a complete change implementation (Burns, 2004). The complexities in properly diagnosing where the change management might have failed, and the reasons behind the resistance to change by the masses, can be significant for future change management efforts (Lewin, 1951).

The ADKAR Change Model

The ADKAR model is an employee-based, bottom-up methodology for change created by Jeffrey Hiatt (2006). The focus of change is placed directly on the people behind the change at any level of the organization. Hiatt's (2006) ADKAR is an acronym representing different stages of change, including awareness (the need to change), desire (participation in support of change), knowledge (how to change), ability (implementation of required skills and behaviors), and reinforcement (sustaining the change). By focusing on the employees, the ADKAR model limits resistance and can aid organizations in speeding up the implementation of change and surrounding processes (Hiatt, 2006). Most importantly, the ADKAR model values employee input and support as opposed to mandating change from employees (Hiatt, 2006). This approach can yield and foster a desire for employees to participate in the change effort instead of being subjected to it (Hiatt, 2006). ADKAR is best suited for small, incremental changes so that daily routines are not significantly disrupted all at once. However, one of the dangers in any change management effort is a lack of leadership support, presence, and oversight that is not also leading

and driving the change (Hiatt, 2006). Employee change sustainability can fizzle, and, as new employees come and go, change management efforts are difficult to keep front-and-center without the longitudinal support of senior leadership (Hiatt, 2006).

The Kübler-Ross Change Curve

The Kübler-Ross (2014) change curve is based on the five stages of grief, as defined by psychiatrist Elisabeth Kübler-Ross. By acknowledging that change is often met with emotional reactions, as opposed to logic-based objections, people and even organizations are better prepared during each of the method's five stages: denial, anger, bargaining, depression, and acceptance (Kübler-Ross, 2014). Employees move through these stages randomly and can even repeat steps several times. It is essential for leaders to communicate and empathize with employees so that they believe their superiors acknowledge their emotions throughout their journey toward change management efforts (Kübler-Ross, 2014). Unfortunately, the unpredictability of emotions makes this change management framework ill-suited for large-scale changes and processes (Kübler-Ross, 2014). The Kübler-Ross change curve is ideal for smaller groups and organizations because it allows leaders to connect with employees individually (Kübler-Ross, 2014). Most research on medium- or larger-scale change management efforts is often associated with other change management frameworks that outline clear steps toward understanding and achieving desired results. However, given the nature of this research study, it is essential to recognize that change management efforts at the ambulatory practice level often take place within the context of smaller and more intimate groups, even though they might all be part of a more extensive system.

The Satir Change Model

The Satir (1983) change model monitors the emotional progression of employees by tracking their performance toward change through five stages: late status quo, resistance, chaos, integration, and new status quo. This model aims to avoid issues that arise when people get frustrated or give up on the latest change processes the organization is attempting to implement (Satir & Baldwin, 1983). The Satir (1983) change model focuses more on the preparation work required in anticipation of change and possible change management plans to help overcome resistance to change. This model does not help determine the initial need or programs for change but instead focuses on the ability of leaders and organizations to identify how to link performance-based metrics and outcomes to help their employees overcome the change curve. This approach acknowledges that many change efforts are abandoned due to resistance, confusion, and a lack of communication by leaders and organizations (Satir & Baldwin, 1983). Given the complexities of healthcare practices and the resistance to change relating to EMR optimization strategies, the Satir and Baldwin (1983) change model can be valuable in acknowledging the need to develop a change management roadmap.

Maurer's Three Levels of Change Resistance

The Maurer (1996) resistance to change model is unique in that it centers solely on what causes changes and the associated processes to fail. This model focuses on three critical levels of resistance: *I don't get it*, *I don't like it*, and *I don't like you*. Maurer's (1996) model accounts for up to two-thirds of significant changes that fail due to a lack of information, adverse emotional reactions to change, or a lack of trust and confidence in the person or people trying to implement the change. Individuals in the *I don't get it* phase are prone to rejecting what they do not understand (Maurer, 1996). When employees do not fully comprehend the need for the change,

or the change itself, they are already setting themselves up for failure. Employees must understand the information that will allow them to see the necessity for the change. In the *I don't like it* phase, emotional reactions can be a considerable barrier to implementing change (Maurer, 1996). Employees feel frustrated or even fearful of the change and are likely to dig their heels in and resist. In the last phase, *I don't like you*, individuals can falsely attribute the need for change and project those feelings onto their leaders or the organization at large (Maurer, 1996). Maurer's (1996) resistance levels to change are helpful for anticipating better how certain employees might react to change. Given the intimate nature of how healthcare is practiced within ambulatory settings, this model can be invaluable in preparing for complex change management efforts, including EMR optimization strategies.

The Deming Cycle of Change

The Deming cycle is also known as the Plan-Do-Check-Act (PDCA) cycle. This framework focuses on process improvement and is divided into four distinct phases: plan, do, check, and act (Barsalou, 2014). The four phases help staff and leaders identify the issues that need the most addressing throughout an organization and tackle those problems through change, keeping the pulse on the implemented changes to adjust actions to sustain the change (Barsalou, 2014). PDCA is called a cycle instead of a model because it is designed to work in a looping pattern, identifying issues and potential improvements during the planning stage, then implementing them on a small scale, within one team or a small department, and then checking and monitoring progress to see if this change could benefit from adjustments (Barsalou, 2014). The issue with this model arises in dealing with large and complex systematic changes, as the looping cycle makes it extremely difficult to understand and diagnose where the cycle is breaking down and how to correct it (Barsalou, 2014). The power to make small incremental

alterations can be critical for smaller teams and departments to make it through difficult changes. However, it might be crucial not to confuse the process of teams performing the Deming cycle by providing them with a complete understanding and diagnosis of where the leadership and change management processes are successful or require course correcting.

Summary

Chapter 2 has presented the literature review, with an emphasis on electronic medical records systems, factors influencing perceptions toward EMRs, factors influencing healthcare practices, models of change management, and the conceptual framework grounding the basis for this research study. In totality, the insights gathered from the literature review and Kotter's (1996) conceptual framework support the optimization of EMR systems as one of the challenging aspects of change management for leaders across healthcare as an industry. Change management is a well-developed and understood field of study, and significant evidence exists on successfully navigating change and the processes surrounding it. Kotter's (1996) eight-step change model offers a framework for how optimal change should occur. The future of healthcare will depend more on digitalization, with EMR systems being front and center. The future practice of medicine will require continued and sustainable EMR optimization efforts and increased learning of what strategies leaders utilize to make change more effective. Using Kotter's (1996) change model can potentially aid ambulatory practice leaders in designing, deploying, and sustaining change management strategies to institutionalize EMR change and optimize efforts, including EMR systems.

CHAPTER 3: METHODOLOGY

Chapter 3 outlines the study methodology, including the purpose of the study, research question and design, site information and population, instrumentation and data collection, data analysis, limitations of the research design, and ethical issues in the research study. The findings from this study can help healthcare leaders and their respective organizations better understand both the opportunities and challenges associated with electronic medical record (EMR) optimization strategies. The need for healthcare leaders to share their respective learnings and perspectives on EMR optimization strategies is essential, as an optimized EMR system can help improve the quality of care and satisfaction levels across the healthcare workforce.

Purpose of the Study

This qualitative phenomenological study explored the lived experiences of ambulatory practice leaders and the strategies they used to optimize EMR systems. The population for this study included ambulatory practice leaders involved with EMR optimization efforts across a multi-site ambulatory system with locations throughout the New England region. Gaining a deeper understanding of strategies ambulatory practice healthcare leaders use to optimize EMR systems can have broad-reaching implications across many different types of healthcare organizations. Leadership is a critical component to ensure the success of any EMR optimization strategic effort. EMR optimization strategies and their respective change leadership and management efforts can experience variations across different organizations. Organizational culture, values, expertise, leadership goals, and aspirations can impact an organization's perspectives and experiences in its approach to EMR optimization strategies. This research study was conducted through semi-structured interviews with a select group of senior healthcare leaders, using the framework of Kotter's (1996) eight-step process for leading change.

Research Question and Design

Given this research study's primary purpose and the aim to explore strategies leaders use to optimize EMR systems, a qualitative phenomenological design was the most appropriate method for this study. The guiding research question was: How do ambulatory practice leaders describe their strategies for optimizing EMR systems?

The research design is one of the most important considerations of any study, and this study was assessed and built based on best practices. Qualitative phenomenological study methods were selected for this study, as they provide the tools and analysis to investigate a contemporary phenomenon within a real-life context, especially when the consideration between the phenomenon and context is not always explicit (Moustakas, 1994). Another advantage of utilizing a qualitative phenomenological study is that it represents the objective study of a specific, unique, and bounded system, which can allow for more in-depth investigation of the shared experiences of people within a particular setting and similar situations (Moustakas, 1994).

Research Design

This research study and design centered on ambulatory practice leaders' strategies for optimizing EMR systems. There are three main research methods: qualitative, quantitative, and mixed method (Beins, 2017). Qualitative research explores real-world events and circumstances to gain a deeper understanding and meaning of lived experiences in shared social and cultural contexts (Denzin & Lincoln, 2017). Qualitative research also enables the researcher to embed themselves into the phenomena being studied to gain new perspectives and to better understand the main research questions and topic under investigation (Denzin & Lincoln, 2017). Qualitative research allows for the use, collection, and analysis of multiple data sources, facilitating an inductive approach to knowledge in the research of the phenomena of the participants and the

environment in which they live (Moser & Korstjens, 2017). In aggregate, qualitative research allows the researcher to link complex and diverse environments where difficulty exists in measuring information such as participants' experiences, especially within the cultural confines of the same organization (Moser & Korstjens, 2017). In exploring different research methodologies, qualitative research, and in particular the use of a qualitative phenomenological study, offered the necessary components to obtain in-depth data collection and analysis for the present research topic.

Quantitative research methods were considered during the examination of the most appropriate ways to support this research study. However, in quantitative research, the researcher uses a standardized approach and method of inquiry to examine a phenomenon with variables in a more controlled setting and environment (Scharrer & Ramasubramanian, 2021). Quantitative research has several limitations, including larger sample sizes, constrained research parameters that prohibit the researcher's ability to capture accurate information in normal environments, and an over-emphasis on numerical and statistical approaches to data analysis and interpretation (Scharrer & Ramasubramanian, 2021).

The reason for utilizing a qualitative phenomenological research study design was to explore the in-depth activities, processes, and experiences of research participants during a time of happening or through past reflections (Cardano, 2020). Qualitative methods can be more sensitive to contextual variables, with higher regard for the participants' relationship to variables that are often integrated into their overall perspectives and views (Creswell, 2013). Quantitative research methods have been a long-established approach to the study of leadership, particularly physician leadership (Clay-Williams et al., 2017). As pertains to this research topic, many researchers have used quantitative research methods to examine electronic medical records due

to these systems' rapid implementation and adoption rates (Weiskopf et al., 2017). A phenomenological study redesign for this study can help better understand how individuals perceive and understand the world in which they live without the researcher applying preconceived notions and potential biases (Creswell, 2013). Finally, the phenomenological research study design can allow the researcher to explore and facilitate research questions through various perspectives, revealing new insights into the investigated topic (Cardano, 2020).

Site Information and Demographics

This phenomenological research study was conducted at a non-profit organization and ambulatory practice operating in two states throughout the northeastern part of New England. In total, the entire ambulatory practice serves patients throughout both rural and urban communities. As a multi-site ambulatory practice healthcare organization, its primary focus was providing family medicine. It also offered other services, including internal medicine, pediatrics, ob-gyn, integrative medicine, osteopathic manipulation, travel medicine, cardiology, and laboratory services.

Each ambulatory practice was a stand-alone facility with practicing physicians, providers, and supporting clinical and administrative staff. All individual ambulatory practice facility sizes ranged from approximately 12,000 to 18,000 square feet. All clinical exam rooms were generally the same size, approximately 150–200 square feet. Each exam room, throughout all practice sites and locations, was equipped with similar in-room technologies consisting of a computer terminal and monitors, printers, and other computer peripherals, with access to a single system-wide electronic medical record system.

The focus of this study was on key senior leaders throughout the organization who had direct experience with the strategies for optimizing EMR systems. The participants were male

and female leaders with direct involvement, oversight, and experience in leading or participating in various EMR optimization strategies. Eligible participants needed to meet all of the inclusion criteria, including being ambulatory or administrative leaders with the title of Vice President or Chief. The exclusion criteria removed ambulatory practice and organizational leaders who had not been involved directly in EMR optimization efforts throughout the organization or who did not hold a senior leadership role.

Sampling Method

Ambulatory practice leaders were the select population for this study due to their direct experiences and knowledge regarding the complexities of EMR optimization strategies. The selection process was not random, as it included a sampling of the individuals who represented key leader-stakeholders across the organization who had been directly involved and who understood the complex perspectives, experiences, and processes related to EMR optimization strategies and efforts. The selected individuals also understood the opportunities and challenges associated with EMR optimization strategies across the organization. Eligible participants who meet all inclusion criteria are essential to stipulate the attributes and boundaries of the sample (Creswell, 2013). Therefore, the research study included six individual semi-structured interviews with senior leaders who held titles including Chief or Vice President and who represented clinical and administrative areas throughout the organization with direct involvement and experience with EMR optimization strategies.

Purposeful sampling, also known as judgmental, selective, or subjective sampling, was used as a form of non-probability sampling for this study (Creswell, 2013). Purposeful research sampling was a technique suitable to meet the objectives of this study, as it facilitates a focus on selecting participants with the best information about the specific problem or situation (Creswell,

2013). The limit of the sample size depends on the point of data saturation, which represents the point when no new data and themes emerge (Creswell, 2013). For this research study, six participants were identified for the purposeful sampling for this qualitative research study.

The choice regarding the type of institution was also critical for this research study. Conducting this research across different types of ambulatory practices could have been challenging for this study. The organization chosen was a multi-site ambulatory practice located in different states and had already implemented and fully adopted an EMR system. The organization had also been on the same EMR system for many years and had matured well beyond the early stages of the initial implementation and adoption phases. Lastly, this particular organization had participated in several iterations of EMR optimization strategic efforts, which could lend a deeper set of perspectives on both the successes and challenges of senior leaders and the strategies they utilized toward EMR optimization efforts.

Instrumentation and Data Collection

Approval to conduct this research was obtained from the University of New England Internal Review Board (IRB), including formal and signed permission from the organization to recruit potential leaders to participate in the study. No IRB oversight existed at the research site of the organization studied; therefore, permission to perform this study was only needed from the head of the organization's legal department. Signed and informed consent from the research participants was not required. An interview protocol and script were used to ensure consistency in the approach for all research participants (see Appendix A). Each interview lasted approximately 45 minutes and was conducted by the same interviewer. A semi-structured interview protocol set of questions was used (see Appendix A) and all participants were asked

the same set of questions. Follow-up questions varied based on the participants' responses, levels of interaction, and responses to prior questions.

All interviews were conducted over the videoconference platform Zoom due to the COVID-19 pandemic. In all cases, the participants chose the location of the recorded Zoom meetings, to ensure a comfortable setting. All potential candidates were recruited through an email invitation that included a brief explanation of the study, the purpose of the study, an explanation of what participation entailed, and the privacy and confidentiality rights of this study (see Appendix B). Participants received a copy of an information sheet with instructions to review the material and to ask any questions (see Appendix C).

Prior to each interview, verbal permission to conduct and record the interview was obtained. Interviews were conducted to the point of data saturation, which is when no new themes or subthemes emerge from the interview responses (Hennink et al., 2016). The interview and data collection approach allowed each participant to communicate their perspectives on their terms and to provide reliable, comparable qualitative data. The interview protocol design aimed to elicit answers focused on the research study under investigation (Butler et al., 2016).

The provisions for the participants' data confidentiality for this study were also outlined in detail and approved by the University of New England IRB. To protect their identities, all participants were assigned a pseudonym number (e.g., P1–P6) based on their names. Research participant roles and titles were kept blinded from the final study results. The master list containing the research participants' names and emails, linked to a pseudonym name, was kept as a separate file from the research study and saved and stored on a password-protected file on the researcher's personal computer. Only the researcher had access to this computer. All Zoom recordings and the master participant list were destroyed after all transcripts were verified for

accuracy, and only the researchers had access to all secure files. All Zoom interviews were saved and stored on a password-protected file on the researcher's personal computer. Paper files, such as handwritten notes or other paper materials, were kept in a secure and lockable cabinet to which only the researcher had access, and they will be deleted and destroyed within 5 years after the completion of the study.

Data Analysis

One of the most important roles of a researcher is to ask open-ended questions to explore the meaning of a phenomenon (Weller et al., 2018). As outlined in Appendix A, an interview protocol was used to ensure consistent and accurate data analysis by: (1) compiling the data, (2) disassembling data, (3) reassembling data, and (4) concluding the meaning of the data (Cardano, 2020). The sole researcher's goal was to ignite a conversation with the participants (Creswell, 2013). While an interview protocol guide was used, the expectation was that a conversational partnership would develop, making the participants feel comfortable sharing their journey without judgment and with respect.

The semi-structured interview questions guided the conversations and focused on capturing some of the main themes of the research. The research participants also offered new and novel insights into areas, which were analyzed more deeply during the transcription and coding process (DeJonckheere & Vaughn, 2019). The data collection process allowed participants the freedom to communicate their views on their terms to provide reliable and comparable qualitative data (Weller et al., 2018). Interviews were conducted to the point of data saturation and allowed ample time for follow-up questions to be answered by each research participant (Creswell, 2013). Confidentiality was ensured through the use of a numerical coding system, P1 to P6, to identify each participant. Data analysis and coding processes were

accomplished using the qualitative software MAXQDA program. Handwritten notes, which helped surface themes and corresponding pairs of subthemes, were then added. Each participant responded to the same set of interview questions as outlined in the interview protocol in Appendix A.

All six interviews were conducted over Zoom and the individual audio files were transcribed through a professional and secure transcription service, REV.com. Converted transcripts were then uploaded individually into Microsoft Word documents and into the digital software platform MAXQDA. The qualitative analytics software MAXQDA analyzed each transcribed interview and the subsequent data collected, which it organized and codified into emergent themes and subthemes. Handwritten notes and reflective journaling were used to better understand the semi-structured interview questions and the participants' answers.

Analytics software tools, such as MAXQDA, help to organize transcribed files, analyze the data, and codify the themes and subthemes, and they help quantify and visualize the total number of referenced codes across all interviews more clearly. The study's goal was to deeply analyze and explore the data derived from the transcribed interviews to gain insight into the main purpose and research question for this study. Three rounds of data analysis and coding were performed to ensure that consistent and reliable coding practices and processes were followed to identify all emergent themes and subthemes. Once the transcription process was completed, the different responses were compared, themes, subthemes, similarities, and differences were tracked, and the answers were grouped into categories using the MAXQDA analytics pro qualitative software program. The finalized themes and subthemes were then coded into the MAXQDA software program, where the visualization of strategies utilized by leaders to optimize EMR systems became clear.

Limitations of the Research Design

A limitation of this study was the small sample size in the number of participants. The data collected was from a homogeneous sample site of a single non-profit organization within the New England region of the United States. Additionally, the research participants in this study were limited to a sampling population of six key senior leaders across a single organization. Another limitation was the potential for researcher bias, wherein participant interviews can be used to confirm a preconceived notion about the study. The sole researcher conducting this study followed the interview protocol and questions to prevent any personal bias and to ensure that the main goal was to ignite conversation between the researcher and the participants (Creswell, 2013). It was important for the researcher to understand the study's broader context and to address its applicability to future research studies. Clear steps were taken to ensure that the findings were credible, the data presented was accurate, and to include data that might conflict with the perspectives of the studied topic.

Ethical Issues

Participation comfort and willingness to be involved in the study and to share personal and professional experiences and knowledge required the fair and respectful treatment of all participants (Sim & Waterfield, 2019). Ethical considerations when conducting a qualitative study include ensuring that the participants understand the informed consent, the safety of participation, anonymity, confidentially, and privacy (Sim & Waterfield, 2019). The researcher reviewed the participation information sheet as outlined in Appendix C. Following these guidelines and procedures for each participant ensured a consistent approach and ensured the ethical protection of each participant in the study.

Although any research study can pose a certain level of risk, there were minimal risks in participating in this study and only a small risk of a breach in confidentially. There were no overt anticipated risks or ethical concerns anticipated in conducting this study. However, it was critical to ensure that each participant clearly understood, and verbally confirmed, their understanding of the right to be recorded and of the information outlined in the participation information sheet (see Appendix C). The researcher took full responsibility for protecting the privacy, confidentially, and anonymity of each participant, especially while performing semi-structured interviews (Husband, 2020). For this study, senior leaders throughout the organization were interviewed and pseudonyms were used for each participant to help protect their confidentiality and anonymity. At the start of each interview, the researcher also emphasized that participation was not required and that they could choose not to answer every question. The researcher explained the data collection processes and reminded the participants that they were welcome to withdraw from the study at any point in time without any repercussions. The interview participants were not paid or incentivized to participate. Further, the researcher did not receive any funds to conduct this study.

Trustworthiness

Qualitative research is based on a set of perceptions and interpretations in the reality of how specific phenomena might have occurred in the real world (DeVault, 2012). The trustworthiness of a research study also relies on several critical components, including the study's credibility, transferability, dependability, and confirmability (DeVault, 2012). The following sections define each component and how this research study supported it.

Credibility

Credibility in conducting any research study is critical to ensuring that the actual perceptions of the study reflect the reality of interpretations (DeVault, 2012). The sole researcher took several steps to ensure that standard processes were followed to increase the credibility of this study. The same set of semi-structured interview questions were used for all of the research participants. Interviews were conducted using the same interview protocol script (Appendix B). Furthermore, the same transcription service and coding techniques were used for consistent data analysis and interpretation of the results. Member checking was used to ensure the validity of the data collection procedures. Member checking was performed through email invitations to the research participants to validate the data collection.

Transferability

Transferability in qualitative research is the degree to which the results of a research study can be applied or transferred to other studies or populations (Closa, 2021). This study was conducted in the northeastern region of the United States, and it represented a generalized ambulatory healthcare practice throughout the United States. This study's sampling method and selection process consisted of senior leaders within an ambulatory practice within a specific organization, and the transferability was limited to similar senior leaders within other ambulatory practices throughout the United States. However, the small participant pool consisted of both clinical and administrative senior leaders and did represent a diverse sample of skill sets found across ambulatory practice healthcare organizations.

Dependability

Dependability refers to the accuracy or precision of a measurement process or, in other words, the consistency of the testing procedure over several replications (Closa, 2021). An

interview protocol was used to ensure the consistency and dependability of the procedure and the reliability of the study, in order to help mitigate inconsistencies (see Appendix B). The same 10 semi-structured interview questions were asked, in the same order, of all six research participants. Utilizing the same questions in the same sequential order is not indicative of getting the same information from each participant but rather ensures a consistent exploration of the study's primary purpose and intent (Creswell, 2013). The consistency in the interview protocol approach also decreased the potential for adverse influence on the overall dependability of the interview data.

Confirmability

Confirmability is a measure by which qualitative researchers aim toward subjectivity and objectivity in the final results of a study (Creswell, 2013). The researcher must ensure that the study results are unbiased and include procedures for checking and rechecking the data and outcomes (Creswell, 2013). Furthermore, once they have compiled the results of a research study, the researcher should conduct a data audit that includes a reanalysis of the final data results and analysis to ensure that their judgments and interpretations are not biased or distorted (Closa, 2021). For this study, the results were confirmed through four rounds of coding of all the transcribed semi-structured interviews. Conducting multiple rounds of coding allowed the researcher to reflect on the coding, themes, and subthemes to prevent bias from entering into the data analysis and interpretation processes. In addition, reflective journaling facilitated deeper insight into the analysis of the study results, promoting independent and unbiased thoughts (DeVault, 2012). In total, these procedures and actions were taken to aid in data collection, validation, and interpretation of the final study results, reducing the probability of unintentional bias.

Summary

Chapter 3 presented the methodology of the study, including the purpose of the study, research question and design, site information and population, instrumentation and data collection, data analysis, limitations of the research design and ethical issues in the proposed research study. The research design was a qualitative phenomenological study to explore the strategies ambulatory practice leaders use to optimize EMR systems. The selection process was not random, as it included a sampling of the individuals who represented key leader-stakeholders across the organization who were directly involved in and who understand the complex perspectives and experiences related to EMR optimization strategies. Semi-structured interview questions were used to understand participants' lived experiences, strategies, and challenges in optimizing EMR systems. Three rounds of data analysis and coding were also performed to ensure consistent and reliable coding practices. The data analysis and interpretation from the interviews began to surface a set of themes and subthemes, which are presented in Chapter 4.

CHAPTER 4: RESULTS

This qualitative phenomenological study aimed to explore strategies ambulatory practice leaders use to optimize electronic medical record (EMR) systems. Utilizing a qualitative phenomenological research design for this study represented an opportunity to examine real-world events to gain a deeper meaning of the lived experiences in the context of shared social and cultural contexts (Van Manen, 2016). The qualitative phenomenological study design allowed the investigation of the lived experiences of healthcare leaders in optimizing EMR systems.

Analysis Method

This study used a qualitative phenomenological study method. It provided the tools and analysis to investigate a contemporary phenomenon and to more deeply understand what strategies ambulatory practice leaders used to optimize EMR systems. Semi-structured interviews with the participants helped answer the main research question: How do ambulatory practice leaders describe their strategies for optimizing EMR systems?

Semi-structured interview questions were used to understand the types of experiences, strategies, and challenges healthcare leaders had related to optimizing EMR systems. The 10 focused questions allowed for richer insights into the specific areas of EMR optimization strategies utilized by the selected administrative and clinical healthcare leaders. The study's goal was to deeply analyze and explore the data derived from the transcribed interviews to gain insights into the understanding of the main purpose and research question of this study.

Participants

The research participants consisted of ambulatory leaders throughout the same multi-site, non-profit organization with varying degrees of experience in leading and participating in

strategies to optimize EMR systems. The participants included male and female ambulatory clinical and administrative practice leaders with the titles of Vice President or Chief. Some research participants had also attained their medical degrees and had practiced medicine within the same organization or throughout their careers.

A total of six research participants received email invitations to participate in the study, and all six voluntarily decided to participate. Each research participant was presented with the same 10 semi-structured questions. The interview protocol (Appendix A) was used to promote consistency and reliability throughout the interview process. Data were collected using semi-structured interview questions and all interviews were recorded using the videoconferencing platform Zoom. The audio files were transcribed into Word documents using the transcription service Rev.com. Finally, the transcribed Word files were uploaded into the digital software tool MAXQDA analytics pro-22.1.0 that organized the data and identified codes and themes.

The sole researcher of this study spent considerable time recording, transcribing, coding, and analyzing the themes and subthemes. The researcher reflected on the pending analysis of the raw data after multiple reads of each transcript coded in vivo (Creswell, 2013). The results of this study were confirmed through four rounds of coding that included all of the transcribed semi-structured interviews. Conducting multiple rounds of coding allowed the researcher to reflect on the coding, themes, and subthemes to ensure that bias was not present in the data analysis and interpretation processes. In vivo coding was used to extract themes and subthemes by pulling verbatim repeated words and phrases from the semi-structured interview transcripts.

Presentation of Results and Findings

The purpose of this qualitative phenomenological study was to explore the lived experiences of ambulatory practice leaders and the strategies they used to optimize EMR

systems. The researcher's goal was to deeply analyze and explore the data derived from interviews to gain insights into the understanding of the primary purpose and research question of this study. The results and findings surfaced several emergent themes through the data analysis and coding processes. The interviews elicited the participants' current and past perspectives and experiences with EMR optimization strategies to answer this study's central research question and purpose. The coding and data analysis yielded several themes across all the research participants, including: (1) leadership, (2) change management, (3) communication, (4) governance, (5) training and support, (6) voice of the customer, (7) optimization, (8) standardization, (9) administrative burden, and (10) industry collaboration. Table 1 illustrates the most prevalent main themes in ascending rank order and the total codified amounts across all six research participants.

Table 1

Themes

Themes	Rank Order	Codified Totals, Participants P1–P6
Leadership	1	26
Change Management	2	23
Communication	3	21
Governance	4	17
Training and Support	5	16
Voice of the Customer	6	14
Optimization	7	13
Standardization	8	10
Administrative Burden	9	9
Industry Collaboration	10	6

Ten distinct themes and respective subthemes emerged after three rounds of data analysis and coding. The subthemes under each of the 10 main themes included: (1) vision and engagement (i.e., leadership), (2) resistance and volume (i.e., change management), (3)

channeling and messaging (i.e., communication), (4) prioritization and value proposition (i.e., governance), (5) skill sets and personalization (i.e., training and support), (6) experience and decision making (i.e., voice of the customer), (7) efficiency and productivity (optimization), (8) best practices and repeatability (i.e., standardization), (9) time and satisfaction (i.e., administrative burden), and (10) perspective and innovation (i.e., industry collaboration). Lastly, through the coding process, the total frequency of mention for each respective pair of subthemes was calculated across all six research participants, and this is represented in Table 2.

Table 2

Themes and Subthemes

Themes	Associated Subthemes	Subtheme Codified Amounts Participants P1–P6
1. Leadership	Vision & Engagement	100% (6/6) & 83% (5/6)
2. Change Management	Resistance & Volume	83% (5/6) & 66% (4/6)
3. Communication	Channeling & Messaging	66% (4/6) & 66% (4/6)
4. Governance	Prioritization & Value Proposition	83% (5/6) & 66% (4/6)
5. Training and Support	Skill Sets & Personalization	66% (4/6) & 33% (2/6)
6. Voice of the Customer	Experience & Decision Making	66% (4/6) & 50% (3/6)
7. Optimization	Efficiency & Productivity	83% (5/6) & 66% (4/6)
8. Standardization	Best Practices & Repeatability	50% (3/6) & 50% (3/6)
9. Administrative Burden	Time & Satisfaction	66% (4/6) & 66% (4/6)
10. Industry Collaboration	Perspective & Innovation	50% (3/6) & 33% (2/6)

The following section will provide a deeper examination of the 10 themes and associated pairs of subthemes. These more detailed perspectives are based on the research participant's semi-structured interviews. All themes and related subthemes emerged through the coding and analysis process supported by direct research participant quotes.

Theme 1: Leadership

Leadership was the top theme across all the research participant interviews, and all of the participants considered it the most foundational component of any EMR optimization strategy. Every research participant emphasized the importance of leadership as being both foundational and a required variable for an acceptable and sustainable EMR optimization strategy. P1 noted the need for leadership by stating:

> The success of any EMR optimization effort starts and ends with a leader, or a lead sponsor, with the desire to take on such a large effort and someone who can also empower other formal and informal leaders throughout the organization.

Several other research participants also emphasized the importance of leaders needing to lead and guide any type of EMR optimization strategy. P2 supported this concept by stating:

> I think leaders need to create a vision of how both clinical and operational leaders must engage in EMR optimization efforts. You need to understand that the EMR system is simply a tool that can advance patient care, and leaders must drive these systems' value proposition and link it to advancing patient care.

All six research participants used different phrases and keywords to emphasize the importance of leadership associated with EMR optimization strategies. However, each of their respective codified words and phrases was consistent in the message that leadership is a required prerequisite for successful optimization strategies. Through the data analysis and coding process, two pairs of subthemes also emerged that were associated with the larger theme of leadership in relation to EMR optimization strategies. These included the role of leadership in creating a vision, and engagement.

Subtheme 1: Vision

The associated subthemes related to leadership as a main theme included creating a vision and engaging staff across different levels of an organization toward EMR optimization strategies. Creating a vision is an imperative aspect of leading an EMR optimization strategy. P6 supported this concept by stating:

> Without a leader in place, someone appointed to lead the EMR efforts and willing to create a vision and strategy for what EMR optimization could and should be … without a leader in place, it will remain just that, an idea that will never become a reality.

The importance of a leader being able to advance an EMR optimization vision throughout multiple levels of the organization, including frontline staff, peers, and senior leaders, was a critical subtheme regarding EMR optimization efforts and strategies the research participants expressed. As P5 noted, "a leader's strategy needs to be creating a shared vision along with cultural alignment, and it needs to be part of your strategic and operational plans and focus." For several different research participants, a leader's ability to create a vision and communicate effectively across the organization was a critical variable in any successful EMR optimization strategy.

Subtheme 2: Engagement

The ability of a leader to engage was another subtheme under the more prominent central theme of leadership. Engagement, in this case, was not simply about the positive aspects of EMR optimization strategies being at the center of a conversation. A leader also needs to be prepared to engage in difficult conversations. P4 supported leadership engagement by emphasizing that "sometimes engagement can involve difficult conversations with providers and staff in explaining the importance of how EMR optimization efforts can help address and minimize

issues from a patient safety perspective." Although several research participants highlighted the importance of engagement by using different types of codified terms, P3 summarized the importance of engagement by stating:

> A leader's ability to engage staff, peers, and other formal and even informal leaders at all levels of an organization with an ability to also represent themselves as a leader who is willing to help explain the value EMR optimization efforts can bring to both the staff and the patients they see and treat on a daily basis.

Lastly, P3 also made it clear that the expectation of a leader's role regarding EMR optimization was to engage staff in difficult conversations. P3 stated "that sometimes they need to address the potential for both staff and leaders' resistance around these types of efforts." The importance of a leader needing to create a compelling vision and effectively propagate that message by engaging staff and other leaders through the practice emerged as a critical subtheme in support of the central theme of leadership.

Theme 2: Change Management

Change management emerged as the second most cited theme across all of the research participant interviews related to strategies used to optimize EMR systems. Todnem (2005) defined change management in the context of both organizations and leaders as "the process of continually renewing an organization's direction, structure, and capabilities to serve the ever-changing needs of external and internal customers" (p. 369). The participants expressed the need for change management through various codified terms and phrases, including employee resistance to change, disempowering management, governance structures, lack of engagement due to confusion or lack of clarity in the effort, and slowing down organizational progress due to fear of change. P4 expressed the complexity and change curve some organizations might need to

go through by stating that “organizations must go through a cultural cycle of creating a shared approach and understanding that provides the opportunity for EMR optimization efforts to be successful.”

The research participants also emphasized the time it can take to ensure that optimization efforts are successful. As P2 stated, “EMR optimization is a never-ending journey that can take years to get right.” Change management as a barrier to success can take time and require patience from both organizations and leaders. P2 emphasized this aspect of change management by stating:

> I think the biggest barrier to any EMR optimization is change management across the workforce. All optimization efforts within an electronic record system can be challenging, even annoying, and slow at times. And the change management around all of that is often a key barrier.

Change management emerged as a critical theme among many research participants. The participants emphasized an organization’s preparedness for change and the ability of leaders to put structures and functions in place to effectively execute the amount of change for EMR optimization strategies. Change management as a central theme also surfaced two important subthemes, associated with resistance, and the volume of change management strategies ambulatory practice leaders use to optimize EMR systems.

Subtheme 3: Resistance

Resistance to change relating to EMR optimization efforts was a subtheme pertaining to the more prominent central theme of change management. Resistance to change stems from complex reasons that leaders must learn to identify. P5 had direct experience with the change resistance of individuals and stated that “some individuals want to simply maintain the

comfortable pace and predictability of their busy and hectic daily schedules and rhythms." Several other research participants addressed EMR resistance to change management strategies and efforts. However, the importance of understanding the nuances behind resistance to EMR optimization and change management efforts can be nuanced. P4 identified the complexity and nuance in resisting change by stating that "trust and believing change is possible is a critical area of consideration in overcoming the changes required to advance EMR systems." Several research participants supported the concept of needing trusted leadership as a prerequisite to any successful EMR optimization strategy. As P4 stated, "it's one thing to trust change. It's another thing to believe in the change being presented by a leader is possible."

Interestingly, even when leaders and organizations get to the healthy place where EMR optimization strategic changes are trusted and believed in, resistance to change can still be part of a more profound cultural barrier to change. Furthermore, some leaders within an organization can have a healthy resistance toward change efforts while other change-resistant individuals can intentionally propagate change-resistant actions. P4 addressed change-resistant individuals based on current and past EMR optimization experiences by stating that "individuals who were very opposed to these types of change efforts can be very outspoken, and they have a potential to kindle resistance more broadly."

Subtheme 4: Change Volume

The coding process identified change volume as a change management subtheme associated with EMR optimization strategies. P5 shared their concern with the issues related to change management volume by stating that "it can be really hard to get at the fear of potential harm to patients if the number of system changes feels overwhelming." P2 also expressed

concern with the concept of volume of changes related to EMR optimization strategies by stating:

> Providers have a hard enough time keeping up with their current daily tasks and acquired habits within an EMR. Adding too much change at one time can lead to confusion and mistakes. I often use the expression, "moving slow to move fast is a strategy unto itself."

Change volume was an important subtheme linked to the primary change management theme throughout the data analysis and coding process. The research participants expressed both variables as areas of caution and concern that leaders often overlooked or did not consider strongly enough when analyzing strategies to optimize EMR systems. Resistance to change has several underlying organizational cultural complexities. Individuals or entire departments across an organization can resist change by demonstrating an unwillingness to adapt to new circumstances or ways of performing work. Many factors can fuel resistance to change, including fear and a lack of trust in leadership. Ambulatory practice leaders must learn to anticipate and create strategies related to resistance when optimizing EMRs.

Theme 3: Communication

Communication emerged as the third most cited theme across all of the research participant interviews related to the importance of EMR optimization strategies. Communication as being essential to EMR optimization centered on the importance of clearly propagating the right message at the right time and place. P6 expressed the importance of communication related to EMR optimization by stating:

> The importance of communication is critical. I mean, we can talk about technology. We can talk about resources. I think communication at all levels, peer to peer, at an executive

level, all the way down to [the] staff and the provider level, is likely to be one of the most key indicators of success when communicating EMR optimization efforts.

Communication surfaced as one of the leading main themes that many of the research participants emphasized. P1 stated "if you can't effectively communicate the goals of an optimization strategy and how the outcomes will improve the daily work, the effort will most likely lose momentum over time and fail." Two other subthemes also emerged under the central communication theme, including channeling and messaging related to EMR optimization strategies. Channeling and messaging subthemes surfaced the importance of the type of communication and the ways messages relating to EMR optimization strategies are transmitted.

Subtheme 5: Channeling

The participants emphasized channeling as a subtheme in the effectiveness of the type of communication used to disseminate EMR optimization strategies. Communication channels refer to the mediums through which effective communication can be used to send a message to the intended audience (Bruton et al., 2019). As P3 stated concerning the effective communication of EMR optimization strategies, "it can be electronic, via newsletters and posters, face to face or even [through] daily huddles and meetings." Several research participants made the importance of needing an effective communication channel strategy as part of any EMR optimization effort clear. P3 also shared the importance of communication channels and how they can depend on the right place and forum for the communication. P3 stated that "one thing I have found to be important was picking the right places where the communication takes place, where what is said can be heard and get people's undivided attention." Research participants expressed the importance of using various communication channels within the larger backdrop of a busy practice setting. Leaders and organizations must develop intentional communication channels to

find the right place and time to ensure that people understand the importance of EMR optimization strategies.

Subtheme 6: Messaging

Messaging was another important subtheme codified under the central theme of communication about EMR optimization. Messaging represents information conveyed in speech, writing, and other verbal and nonverbal forms, or even through signs and symbols (Hargie, 2021). Many research participants expressed the need for leaders to ensure the right level of communication and meaning related to EMR optimization strategies. P5 stated that "effective communication and messaging comes with intent and purpose, and it just might be the best indicator of success to anything related to EMR system optimization efforts." To further support the importance of messaging, P4 stated "effective messaging to staff and providers must be translatable and meaningful enough to engage others to proliferate messages that represent both the biggest opportunities and challenges." How messages are delivered and how leaders ensure that the meaning behind EMR optimization strategies is understood surfaced as critical subthemes in the interviews with the research participants. The subthemes of channeling and messaging of communication were highly associated and ended up equally codified as subthemes regarding strategies ambulatory practice leaders can use when optimizing EMR systems.

Theme 4: Governance

Governance emerged as the fourth most cited primary theme across all of the research participant interviews related to strategies used to optimize EMR systems. The research participants expressed the need to establish a governing structure and function to help establish an overall direction, ensure timely decision-making, and help assess and manage risk. P3 expressed the importance of governance by stating "I think what has proven most effective is to

have a good governance structure around EMR optimization efforts." P1 also expressed the importance of establishing an EMR governance structure by noting "what I have seen work most effectively is first putting in place a governance model with key stakeholders and technical expertise." What the research participants made clear is the importance of formalizing and establishing an EMR optimization governing body to define the goals more effectively and to set the priorities for EMR optimization strategies. Two other essential subthemes emerged during the semi-structured interviews relating to the importance of governing with direct oversight of EMR optimization strategies. Prioritization and value proposition were subthemes the research participants emphasized as critical competencies required by governing bodies to help with EMR optimization efforts.

Subtheme 7: Prioritization

The prioritization of EMR strategies emerged as a critical subtheme. Research participants emphasized the importance of leaders correctly allocating organizational resources toward the most impactful needs to help improve the experience and usability of EMR systems. P6 emphasized the importance of governing bodies and their respective roles in establishing clear priorities by stating that:

> Ensuring the priorities of ongoing optimization efforts through an established governing body is a great way to align people across the organization and keep everyone focused on the right objectives instead of trying to boil the ocean. Governing bodies, led by the right leaders, can make everyone feel a sense of accomplishment, even on the little wins.

P3 similarly expressed the importance of appropriate EMR optimization governance by stating that "credibility can be lost through fits and starts and can make or break the confidence of all those impacted and working on EMR optimization efforts." The notion of formal

governance structures and functions responsible for prioritizing EMR optimization strategies and efforts was a crucial subtheme in the larger context of establishing a governing body to lead EMR optimization strategies.

Subtheme 8: Value Proposition

Creating a value proposition was another subtheme that emerged from the research participant interviews regarding ambulatory practice leaders and their EMR optimization strategies. Building a solid value proposition that focuses on the right set of issues and opportunities was an explicit requirement in effectively leading a governance body with oversight of EMR optimization strategies. P1 expressed the importance of the role of EMR governance and leadership by stating that "governing bodies need to assess the optimization efforts to score them, which will have the most significant impact on patients, providers, staff, and the business." Value proposition is another critical subtheme for leaders and governing bodies to proactively manage to ensure the highest value areas of EMR optimization strategies can yield the most meaningful results.

Theme 5: Training and Support

Training and support emerged as the fifth most cited theme across all of the research participant interviews related to EMR optimization strategies. The importance of training includes ongoing EMR refresher courses that keep staff current on the latest feature and functions of their respective EMR systems. P4 emphasized the importance of training for providers by stating that "at a minimum, providers need competency testing and skill set training in the EMR. I believe it is necessary and should be considered a core caregiver skill."

Another critical aspect of training and support is the recognition that, in the initial phases of EMR implementation, training is an essential part of the criteria for success. As EMR systems

enter the optimization phases, training tends to become less important to many healthcare organizations. However, P3 also emphasized the importance of ongoing EMR training by stating:

> Some providers and staff will naturally learn and get better at working within the electronic medical record system. Some will be terrible at it and continue to struggle, but most live where they ended up out of [that] training in the early or support period.

The importance of support for EMR optimization was another critical aspect of the primary theme. Support includes the need for hands-on support within the clinical practice setting and embracing the need to hire new roles to help advance workflow and optimization efforts. P3 focused on both the need for support and for new roles to advance EMR optimization strategies by stating:

> The need for real-time frontline practice support requires an investment and commitment from organizations to create new clinical and business analyst and medical leadership roles dedicated to advancing EMR optimization plans. These new roles need to work hand and glove with IT specialists and leadership to help bring these complex systems to the next level.

Ongoing training and support are paramount for EMR optimization strategies within an ambulatory practice. Based on the data analysis and coding derived from the semi-structured interviews, leadership needs to recognize the potential gaps and develop continuous and more progressive education and support models specific to the needs of providers and staff. Two important subthemes also emerged in association with the primary themes for training and support, and these included skill sets and personalization.

Subtheme 9: Skill Sets

Skill sets was an important subtheme that emerged under the primary theme of training and support. P4 conceptualized the importance of skill sets as an essential aspect of an effective EMR optimization strategy by stating:

> Training for EMRs is right up there with core skills of using a stethoscope and taking blood pressure. I've seen organizations go back and require competency testing for providers in several areas of EMR skills. It's a fundamental skill, but most organizations don't test the core competency of electronic medical record systems.

The commitment to specific skill set training and the potential of ongoing EMR certification classes requires leadership and organizational commitment. As P5 stated:

> Ensuring providers and clinical staff have time each month for ongoing electric [*sic*] medical record training allows them to understand any ongoing system changes and updates they need to understand. Stepping off the production line of caregiving and recognizing the EMR system is now an integral part of the practice of medicine and needs to be maintained like other skill sets.

The importance of ongoing skill set training for all clinical and administrative staff was a clear area of importance raised by several research participants. Allowing sufficient time away from clinical and administrative duties to improve EMR skill sets is critical to ongoing learning within complex systems. Ensuring organizational leadership understands the importance of ongoing skill set maintenance should be embedded into an effective EMR optimization strategy.

Subtheme 10: Personalization

Beyond ensuring that provider and staff EMR skill sets are maintained or even certified, the personalization of individual training and support for EMR systems are essential for EMR

optimization success. Understanding the preferences for ongoing EMR training and support and knowing what methods will work for everyone, according to P6, "is as basic as understanding what teaching and forms of support will work best for that individual as everyone learns and retains information in different ways."

Personalization emerged in various codified key terms and phrases, including individual training, individualized support, dedicated superusers embedded within the practice, and integrated clinical training resources. P6 emphasized the importance of personalized forms of EMR training and support by stating:

> One of our biggest opportunities is having a dedicated person, even superusers, [who] can provide real-time at-the-elbow support who are in the practice sites daily. Their sole responsibility is training, ongoing support, and education for all the providers and staff.

The importance of education and support was a clear primary theme that emerged as enabling a more effective EMR optimization strategy. The significance of the subthemes of EMR skill sets and personalization emphasized a more robust commitment from healthcare organizations, leaders, and even the staff utilizing the EMR system daily. This cohort of research participants observed and experienced a willingness for increased EMR skill set requirement training and certification along with personalized training and support models to ensure that the workforce could succeed in using these complex systems.

Theme 6: The Voice of the Customer

The voice of the customer emerged as the sixth most cited emergent theme across all of the research participant interviews related to EMR optimization strategies. Research participants expressed the need for leadership to listen to the frontline staff regarding EMR system challenges and opportunities. P1 supported this idea by stating that "leadership's ability to listen to staff

about the realities of EMR system challenges is where gaining a real perspective begins." The degree to which leaders engage and are in touch with these complex systems' specific challenges and opportunities was clearly an important theme from the data analysis gathered from the semi-structured interviews. P1 also emphasized the importance of leadership having a complete picture of the staff and their respective voices across the entire workforce in association with the complexities of EMR systems across the ambulatory practice by stating:

> We also need to consider how the provider and operating models continue evolving within [these] EMR systems and how everyone is working. Ambulatory care practices throughout the United States have varied EMR products and services that increasingly support more integrated models of care that include nurse practitioners, physician assistants, pharmacists, and other clinical staff helping to provide patient care.

Being in touch with the entire clinical care model and how EMR systems can potentially impact the workflow of both the providers and care teams was a central theme in support of the leadership understanding the voice of the customer. P4 expressed this sentiment by stating that "leaders must not optimize the EMR in a vacuum." P4 also expressed the importance of being in touch with internal customer needs and concerns by noting that:

> Understanding exactly where [the] electronic records pain points are and figuring out the areas of opportunities to optimize a system with the voice of the customer being in place before any EMR optimization strategy is required for this type of work.

A continued effort to capture the voice of the customer in an organization is critical to understanding the context of specific challenges and opportunities related to effective EMR optimization strategies. This is a key element in leadership's ability to truly understand the realities of the complexities facing both clinical and administrative staff. Further data and coding

analysis derived from the primary theme of the voice of the customer also yielded two important subthemes: experience and decision making.

Subtheme 11: Experience

The end-users experience within an EMR system was a critical subtheme that emerged in support of the voice of the customer as a primary theme. This sentiment went beyond the traditional mechanisms of simply gathering end-user input through periodic formal and informal conversations using data capture mechanisms such as periodic online or written surveys. Research participants expressed the importance of leadership genuinely capturing staff experiences regarding their interactions with their EMR system. P1 supported the notion of having clarity regarding an organization's end-users' experiences by stating:

> Understanding how providers [and] staff truly feel about their electronic medical record system must go beyond complaints and [a] wish list of ideas but having a dedicated superuser group focused on where individual experiences can be improved throughout the system. Without knowing how the experience of the frontline staff and their pain points, it can be hard to know what success looks and feels like.

Subtheme 12: Decision Making

Decision making was another critical subtheme underpinning the primary theme of the voice of the customer. Gathering customer input regarding their daily experiences is crucial, but it is equally important to allow staff and providers to be part of decision-making processes. P2 identified the importance of EMR optimization decision making by stating:

> Listening to staff, providers, and peers can help everyone understand where improvement opportunities exist in making better decisions. Ensuring staff are engaged and involved in

> the decisions of where EMR optimization efforts will be focused on [and] aligned can create a positive feedback loop in knowing they are being listened to and heard.

EMR optimization efforts can be aided by the leadership understanding employee experiences more thoroughly and including them in decision making. This approach can help serve a dual purpose of engagement and empowerment. The research participants made it clear that harnessing the voice of the customers and including them in decision-making processes can aid in EMR optimization strategies and efforts.

Theme 7: Optimization

Optimization emerged as the seventh most cited theme across the research participant interviews related to EMR optimization strategies. Optimization emerged as a codified term signaling an area of leadership and a commitment to not only optimize EMR systems but also to help overcome any inherent design and functionality limitations. EMR optimization is defined as refining or enhancing EMR software to better serve a practice's needs, thereby offering improved administrative and clinical productivity and efficiency (Chang et al., 2012). The research participants expressed the importance of organizations and leadership needing ongoing programmatic commitments toward EMR optimization efforts.

Without EMR optimization funding to support such initiatives, organizations struggle to harness the best capabilities from their respective EMR systems. P1 emphasized the importance of organizations and leaders understanding the realities of the inherent limitation in functionality and design by stating "EMR systems are simply not configured to run optimally out of the box, [and] optimization takes a strong multi-year organizational and leadership commitment." Beyond the more primary theme of optimization, the research participants expressed two important subthemes associated with EMR optimization: efficiency and productivity.

Subtheme 13: Efficiency and Productivity

Efficiency and productivity emerged as essential components of EMR optimization strategies. P1 emphasized the impact efficiency gains can have on the provider and staff community within an ambulatory practice by stating that "if taken seriously, optimization efforts can reduce the amount of time staff clicks with [an] EMR system which improves information availability in a timelier manner, making the workday more productive for staff and providers."

The participants considered both the efficiency and productivity subthemes related to EMR system optimization efforts with an industry lens toward the inherent limitations in the design and functionality of all EMR systems. P1 supported this notion by stating:

> EMR systems have built-in limitations that prevent them from being customized and purpose-built to meet the organization's workflow and care needs. A healthy level of comprising [in] how much efficiency you can extract is part of the art [and] science in optimizing these systems.

However, recognizing certain limitations within an EMR system that might exist and that prohibit its optimal efficiency and productivity signals the importance of having plans and structures to support continual EMR process improvement efforts. As P5 stated, "organizations investing in process improvement can find time savings through workflow and system improvements, [and] this creates a cycle and belief system of looking for improvement opportunities where many people believe there are none left to be had." Both efficiency and productivity were essential subthemes that emerged under the central theme of optimization during the interview and coding process associated with the critical strategies leadership teams and organizations need to consider when optimizing EMR systems.

Theme 8: Standardization

Standardization emerged as the eighth most cited theme across all of the research participant interviews related to strategies used to optimize EMR systems. Standardization in healthcare has proven to reduce errors and variations in practice and to advance patient care using evidence-based best practices (Ozeran & Schreiber, 2021). Standard clinical care practices and processes were converted from paper into EMR systems as they became the digital care record systems throughout the United States (Gettinger & Mason, 2020). Standardization in clinical practice is essential to helping providers reduce the risk of adverse events and improve the quality of patient care (Claire Simon et al., 2018). When providers and staff have inconsistent care practice standards, this can make it challenging to work predictably and collaboratively, compromising the continuum and experience of care for patients. P4 emphasized the importance of standardized processes being appropriately translated into new EMR digital standards:

> Clinical and business owners need to understand what processes and standards of care practice they are trying to implement [into] the record system. Without agreed-upon standards, implementing changes in [an] EMR might not yield the best possible outcome for the system or the providers across the organization. I have seen first-hand how a new standard of practice was implemented, [which] caused more harm and confusion.

Coordinated digital EMR standardization workflows and processes are critical for healthcare organizations and leaders to focus on for successful EMR optimization strategies. Without a collaborative and intentional standardization organizational effort, as P5 stated, this "can create wide variations in the practice of care across the sites which can decrease the quality and increase harm across the patient population." The importance of patient safety also emerged.

P4 stated that “reducing the number of complex variables within the EMR system allows providers to make better decisions.”

The essential theme of standardization also supports the concept that by reducing the number of variables attached to a patient record and using evidence-based practices to make decisions healthcare providers can make smarter decisions for their patients (Fowler et al., 2014). The importance of standardization was a clear primary theme supporting EMR optimization strategies. Two other subthemes emerged under standardization, including best practices and repeatability.

Subtheme 14: Best Practices and Repeatability

Best practices and repeatability emerged as essential subthemes in the data and coding analysis that were associated with the guiding theme of standardization. Best practices and repeatability emerged from the interview responses and, in the context of this research study, represent a combination of consistent and reliable clinical care practices and workflows that can enhance patient safety in EMR systems (Gans et al., 2015). P4 emphasized this perspective by stating that “standardizing EMR systems around repeatable workflows and established clinical care best practices [can] reduce drift and variations among providers and sites.”

An essential aspect of ensuring best practice and repeatable workflow designs to help advance EMR optimization strategies is creating the time and space for frontline staff and providers to implement such standards. P6 emphasized this concept by stating that “leadership needs to give people enough time, which means taking time away from patient care duties, to allow staff and providers the time to implement EMR reliable and repeatable standards.” According to this study’s sample of research participants, best practices and repeatability are essential for implementing an effective EMR optimization strategy. The association between

clinical care best practices being repeatable is a subtheme related to the primary theme of standardization as an important aspect of leadership to aid in successful EMR optimization strategies.

Theme 9: Administrative Burdens

Administrative burdens emerged as the ninth most cited theme across the research participant interviews related to EMR optimization strategies. Research continues to show a strong association between EMRs and decreased provider satisfaction levels (Asan et al., 2014). Primary care physicians spend more than half of their workdays interacting with EMR systems during and after clinical hours (Arndt et al., 2017). Although clinical burnout has a variety of root causes, the burdensome documentation required within EMR systems by providers is associated with feelings of powerlessness and a decreased sense of personal accomplishment (Robertson et al., 2017). P5 stated that "the burdens of EMR systems on providers is an industry problem."

Interestingly, the research participants recognized that EMR systems have become embedded in and are critically important to the practice of medicine. P4 emphasized this point by stating:

> I realize the burdens EMRs have placed on providers and the practice, but there is no going back. Before digital health records, we lived in a world of disorganized paper records, which created a much bigger administration hassle for providers and the medical community.

The role of the EMR system and administrative burdens developed as a theme in this research study. P2 addressed the importance of increased EMR administrative burden by stating that "provider burnout is real because increased EMR administrative burdens cause less

satisfaction at work, even at home." Several research participants emphasized the importance of increased administrative burdens due to the complexities and time commitment required by EMR systems. The association between the amount of time a provider spends in an EMR system and the satisfaction levels of a proper work-life balance is a concern that needs to be addressed by any effective EMR optimization strategy. Data analysis and coding from the semi-structured interviews also revealed two other important subthemes associated with the primary theme of administrative burden: time and satisfaction.

Subtheme 15: Time and Satisfaction

Time and satisfaction emerged as two subthemes in the research participant responses related to the more prominent theme of administrative burdens on EMR systems and optimization. The amount of time providers spend in EMR systems and the association with professional satisfaction was a concern the research participants raised. P2 emphasized this concern by stating that "reducing the amount of time and clicks a provider has to perform daily in an EMR can be a major source of pain and discomfort."

P4 also addressed the need to take provider satisfaction seriously in association with EMRs by stating that "we need to take provider satisfaction seriously and find ways to improve the EMR system. Finding ways to reduce the time in the EMR will help improve provider satisfaction in more ways than we realize." Several research participants touched on the association between increased time in the EMR with a decreased level of provider satisfaction. P4 emphasized the importance of this as a significant contributing factor to provider burnout by noting that "provider burnout is an industry issue, and although many factors contribute to this issue, the EMR is a major contributor and accelerates the problem of provider burnout across the community." From the perspective of this research study and sample population, the total time

providers and staff spend daily within an EMR system is strongly associated with a sense and feeling of personal and professional satisfaction.

Theme 10: Industry Collaboration

Industry collaboration emerged as the tenth and last codified theme across the individual research participant interviews related to EMR optimization strategies. The comments regarding industry collaboration centered on the need to look outward, whereas healthcare organizations have historically been inward-focused. P5 emphasized the need for increased collaboration regarding EMR and system optimization strategies, stating:

> I don't think that we're necessarily harvesting what has already been done in the world, and we need to bring that knowledge into organizations to take advantage of them. Organizations do not need to create everything new when people have already discovered, managed, and executed better EMR and practices.

P2 also emphasized the importance of looking to other industries for collaboration by stating:

> What I have seen less of [is] an industry view around optimization efforts, looking outward toward other organizations and industries to access the opportunities that might help us lessen the burdens of using our EMR system and offer new ways to innovate in thinking about optimization efforts.

The importance of healthcare organizations and leaders expanding their industry view by engaging in collaboration among industry peers and other industries was an important theme captured by this research study. Underneath the primary theme of industry collaboration two other vital subthemes emerged. Perspective and innovation were other essential factors associated with optimizing EMR strategies within ambulatory practices.

Subtheme 16: Perspective

Gaining an outside perspective of what other organizations and leaders have accomplished through their respective EMR optimization strategies can also be used to help find innovative solutions. P5 stated that "it is common for organizations and leaders to create a culture of insular views and perspectives of EMR optimization efforts." If healthcare organizations only have an inside perspective, this can prohibit their idea and solution generation related to EMR optimization strategies.

Subtheme 17: Innovation

Innovation was another subtheme the research participants emphasized in relation to the primary theme of industry collaboration. P3 stated:

> I have seen less of an industry view around EMR optimization efforts. Other organizations and industries might offer opportunities to help us consider differences in how to unburden the use of EMR systems and offer new and innovative ways to think about optimization efforts.

The need to gain outside perspectives and look to other industries for innovative ways to optimize EMR systems was important to the research participants. Gaining insights from industry peers can aid in advancing EMR optimization strategies by garnering the lessons learned from other healthcare organizations and leaders. Looking to other industries and sectors for how they have optimized complex systems can offer new and innovative perspectives. Healthcare organizations and leaders must consider looking outward as part of their overall strategy to optimize EMR systems.

Summary

This qualitative phenomenological study explored the strategies ambulatory practice leaders use to optimize EMR systems. This study's population included administrative and clinical ambulatory practice leaders directly involved with EMR optimization efforts within their current and past organizations. This study was conducted within a multi-site ambulatory care system within the New England region. The semi-structured interviews and data collected from the analysis and coding process were associated with reflections and insights from the literature review. The data showed that the research participants agreed on several themes and associated subthemes regarding strategies to optimize EMR systems. The research participants had a clear understanding of the opportunities and challenges related to the complexities of the optimization of EMR systems.

CHAPTER 5: CONCLUSION

The purpose of this qualitative phenomenological study was to explore ambulatory practice leaders' lived experiences and the strategies they used to optimize electronic medical record (EMR) systems. The study used 10 semi-structured interview questions to guide the conversations and to aid in capturing data to reveal the themes and subthemes of the research findings. The population for this study included six ambulatory practice leaders involved in EMR optimization efforts across a multi-site ambulatory system with locations throughout the New England region. The selection process for research participants was not random, as it included a sampling method of the individuals who represented senior leaders who had been directly involved with and who led various aspects of EMR optimization strategies. The data collection and analysis from the semi-structured interviews were consistent with the findings of other studies and supported the literature review. The research participants surfaced several themes and subthemes associated with the concepts of the conceptual framework guiding this research study, Kotter's (1996) eight-step change management model. This chapter provides an interpretation of the research findings and answers the main research question: How do ambulatory practice leaders describe their strategies for optimizing EMR systems?

Interpretation and Importance of Findings

This section discusses the interpretation and importance of the findings from this research study. The data analysis surfaced a set of primary themes and associated pairs of subthemes. The conceptual framework for this study was based on Kotter's (1996) eight-step process for leading change. Kotter's (1996) eight steps of change included: (1) creating a sense of urgency, (2) building a guiding coalition, (3) creating a vision, (4) communicating a vision for buy-in, (5) removing obstacles, (6) creating short-term wins, (7) maintaining momentum, and (8)

incorporating change into the culture. Interestingly, Kotter's (1996) eight-step process for leading change can be summarized under three broader phases of change management: creating a climate of change, engaging and enabling the organization, and implementing and sustaining change. The following section offers an interpretation of this research study's primary themes, corresponding subthemes, and how they are associated with Kotter's (1996) broader three phases of change management. Table 3 represents Kotter's (1996) three phases and how the specific eight stages of change management are incorporated into the broader change management framework.

Table 3

Kotter's (1996) Three Phases of Change

Phase 1: Creating a Climate of Change	1. Creating a sense of urgency 2. Building a guiding coalition 3. Creating a vision
Phase 2: Engaging and Enabling the Organization	4. Communicating a vision for buy-in 5. Removing obstacles 6. Creating short-term wins
Phase 3: Implementing and Sustaining Change	7. Maintaining momentum 8. Incorporating change into the culture

Interpretation 1: Creating a Climate of Change

Phase one of Kotter's (1996) change model, creating a climate of change, identified that leadership must break free from existing cultural norms to make way for new forms of organizational change. Supporting phase one of creating a climate of change is a set of change management principles that includes creating a sense of urgency, building a guiding coalition, and creating a vision (Kotter, 1996). Kotter's (1996) phase one change management framework is associated with several themes and subthemes from this study, including leadership, industry collaboration, customer voice, perspective, innovation, and vision.

Kotter (1996) emphasized that leaders must create a sense of urgency by focusing the organization's energies on addressing the most pressing challenges or solving the most significant opportunities related to a change initiative or specific strategy. This study's results support Kotter's (1996) principle by identifying the voice of the customer as another primary theme. The voice of the customer theme was associated with the importance of creating a sense of urgency as leadership needs to ensure they are listening to what matters most and addressing the most urgent needs of issues or opportunities that need to be solved. Enabling the leadership to capture the voice of the customer by getting direct input from both leaders and employees to address which EMR optimization strategies are most critical can help create and drive a sense of urgency.

Second, Kotter's (1996) change management principle of building a guiding coalition emerged from this study's results under the industry collaboration themes. Leadership must harvest the input and collaboration of internal and external resources. Kotter (1996) emphasized that building a guiding coalition starts with the leadership encouraging groups of people to work toward a common, shared goal. Building a guiding coalition through industry collaboration can be a powerful way to foster new perspectives and innovative ideas to encourage alignment toward creating a climate of change throughout an organization. The results of this study support Kotter's (1996) principle of building a guiding coalition through the emergence of the two subthemes of perspective and innovation and how they can aid leaders in successful EMR optimization strategies.

Lastly, the study results emphasized Kotter's (1996) principle of leadership needing to create a compelling vision in order to effectively create a climate of change. Vison was a prominent subtheme that surfaced from the results of this study in support of the associated

primary theme of leadership. The study found that leadership's most critical and foundational element is creating a compelling vision for change across the organization. If a leader can create a compelling vision, this can influence other leaders and individuals throughout the organization to support and sustain even the most complex change management strategies and efforts. In combination, the themes of leadership and industry collaboration along with the subthemes of the voice of the customer, perspective, innovation, and vision are associated with the findings from this study and support phase one of Kotter's (1996) model on creating a climate of change.

Interpretation 2: Engaging and Enabling the Organization

Phase two of Kotter's (1996) change model, engaging and enabling the organization, was supported by three principles: communicating a vision for buy-in, removing obstacles, and creating short-term wins. Engaging and enabling an organization toward a change management strategy requires leadership to create a compelling vision for change, to establish a culture of trust by removing obstacles, and to ensure quick change initiative wins that have the power to propagate momentum for the entire staff supporting the effort (Kotter, 1996). The change management principles in phase two are supported by the results of this study with the associated primary themes of leadership and governance along with the subthemes of resistance and prioritization.

First, Kotter's (1996) principle of communicating a vision for buy-in was foundational for phase two of the change model of engaging and enabling the organization. Several elements are required to effectively communicate the vision for buy-in, as it needs to be repeated and explained across multiple forums (Kotter, 1996). Leaders must also lead by example, walking the walk and talking the talk (Kotter, 1996). Communication was a primary theme derived from the results of this study, with the associated subthemes of channeling and messaging. Leaders must

find the right channels to communicate across the organization through various tools, including electronic means, in person, or through daily huddles. While messaging a vision for buy-in, the leadership must ensure that the purpose and intent of the message resonates with key stakeholders throughout the organization. Combined, the subthemes of channeling and messaging, in association to the larger theme of communication, support the principle of communicating a vision for buy-in based on the results of this study.

Second, Kotter's (1996) principle of removing obstacles was a critical aspect of phase two of the change model of engaging and enabling the organization. Change management was a primary theme from the results of this study, along with an associated subtheme of resistance to change. Resistance to change management results from the leadership not removing obstacles that can create frustration in the form of loss of confidence, trust, and broader forms of cultural resistance (Kotter, 1996). Research participants identified that removing potential barriers to change resistance by healthcare leaders, staff, teams, or even entire departments was critical in developing strategies to overcome resistance to EMR optimization strategic efforts.

Lastly, Kotter's (1996) principle of creating short-term wins was the final variable in phase two of the change model of engaging and enabling the organization. The findings from this study revealed a primary theme of governance and an associated subtheme of prioritization to ensure that leaders focus their EMR optimization strategies on the right set of challenges and opportunities. An EMR optimization governance structure can help guide staff and the organization toward creating short-term wins that yield meaningful improvements, increasing the credibility and confidence in EMR optimization strategies and efforts across the organization.

Interpretation 3: Implementing and Sustaining Change

Kotter's (1996) third and final phase of the change management process was implementing and sustaining change. The supporting principles under this final phase included maintaining momentum and incorporating change into the culture. Implementing and sustaining a change management strategy is effective when people throughout the organization believe the new way of doing things is simply the way they have always been done (Kotter, 1996). The change management principles of maintaining momentum and incorporating change into the culture emerged from this study's results with the primary theme of standardization and its associated subthemes of decision making and repeatability.

Kotter's (1996) first principle in the third phase of implementing and sustaining change was maintaining momentum. The primary theme of standardization supports the principle of maintaining momentum and the subtheme of repeatability based on the results of this study. Standardization in healthcare has proven to reduce errors and variations in practicing medicine (Ozeran & Schreiber, 2021). When clinical and administrative staff can rely on standardized and repeatable workflows and tasks, this can make their daily work less challenging, creating more time for increased collaboration and leading to a better workplace experience.

Proliferating change throughout the broader organizational culture is critical for the leadership to implement and sustain change management strategies (Kotter, 1996). Kotter (1996) emphasized that one of the most important roles of leadership is to ensure that change strategies can be long-lasting and sustainable. When employees are part of the decision-making process of the change management effort it is more likely to succeed (Kotter, 1996). The results from this study support the principle of implementing and sustaining change with the identified subtheme of decision making. Empowering leaders and staff to be part of decision-making processes can

solidify the EMR optimization strategy by engraining it into the organization's cultural expectations. Kotter (1996) emphasized that change tends to stick when most people believe that the organization has always done things this way and have forgotten the old way of operating. Integrating new change management belief systems can be reinforced by allowing organizational staff to be part of decision-making processes by empowering them to contribute directly to the strategy (Kotter, 1996). Allowing employees to be part of the decisions that will activate and deploy an EMR optimization strategy can aid leaders in incorporating change into the fabric of the workplace culture.

Implications

This research study revealed themes and subthemes derived from the semi-structured interviews that can potentially aid ambulatory practice leaders toward more effective ways to optimize EMR systems. However, the study's results surfaced several implications that remain a challenge when developing, deploying, and sustaining EMR optimization strategies. First, the findings indicated that the research participants recognized the importance of developing and deploying proactive change management plans. Second, they identified that understanding that resistance to change will occur and learning to diagnose the potential resistors are both critical to creating an EMR optimization strategy. Lastly, communicating a clear vision across the organization with an ability for messaging to reach different levels of the organization can help ambulatory practice leaders deploy, execute, and sustain more effective EMR optimization strategies. These implications are aligned and relate to the larger body of literature. The following section explores these implications in more detail and how they relate to the existing literature.

Implication 1: Creating a Change Management Plan

The study revealed important implications in understanding the concepts and tactics behind effective change management plans pertaining to the complexities of EMR optimization strategies. Change management is a term used to define a basic set of tools, structures, and functions for leaders to better control change management efforts (Kotter, 1996). The results of this study support the concept of change management by surfacing the primary themes of change management, governance, and training and support. The results of this study identified change management as a primary theme and underscored the need for leadership to prepare the organization for change and for leaders to put structures and functions in place to effectively achieve the amount of change required for an effective EMR optimization strategy. Governance is required to ensure that leaders develop criteria for success and prioritize urgent needs to protect EMR optimization resources from distractions. Organizations must also provide training and support for leaders and staff to gain the necessary skills to learn and sustain a change effort or strategy. The results of this study emphasized the implications of ambulatory practice leaders needing to create change management plans as part of their EMR optimization strategy.

The literature review section of this study emphasized an important area that aligned with the implications of creating a change management plan. As referenced in the literature, addressing evolving physician leadership and practice culture must be included as part of the steps in developing a change management place for an effective EMR optimization strategy. First, evolving physician leadership is an area of consideration for ambulatory practice leaders preparing and deploying an effective EMR optimization change management plan. The choice of a physician or other clinical champions can have many implications. Physician champions and leaders are a critical success factor for successful technology implementation and optimization

efforts, especially with an EMR system (Clay-Williams et al., 2017). Second, recognizing the importance of practice culture and understanding enables the local leadership to create a culture of collegiately, fairness, and respect, which is critical to overall physician satisfaction (Linzer et al., 2013). Practice culture is essential to create an environment where successful change and transformation can occur. The implication of creating change management that includes evolving physician leadership and practice culture are two key aspects ambulatory practice leaders need to consider for an effective EMR optimization strategy.

Implication 2: Diagnosing Resistance to Change

The study found change management as an important primary theme to be supported by the associated subtheme of resistance to change. The study results determined that resistance to EMR optimization strategies can emerge from employees due to a fear of change, a lack of trust in leadership, and an unwillingness of staff to accept and adopt change. Kotter's (1996) process for leading change accounted for resistance to change by people throughout organizations and recognized that employees can be outright combative toward change management efforts. The results of this study supported that leading an effective EMR optimization strategy must entail the ability to appropriately diagnose the type of resistance to change and to create a change management plan with effective and intentional countermeasures. Ambulatory practice leaders must be proactive in assessing and diagnosing potential types of resistance to EMR optimization strategies and change efforts and in developing interventions to help combat resistance.

The literature review section of this study emphasized another important area that aligned with the implications of diagnosing resistance to change. Leaders' ability to progressively diagnose resistance to change can help with two crucial aspects of organizational resistance: practice autonomy and EMR disruption. These can yield significant changes to EMR systems,

increasing administrative burdens. First, EMR optimization strategies can cause rapid and profound changes perceived as a lack of input and a loss of control and autonomy by providers and staff (Patel et al., 2018). Changes that impact workflows or information technology systems that do not involve local input from providers and clinical staff can encounter a high degree of resistance (Robertson et al., 2017). Second, EMR administrative burdens are cumbersome and time-consuming, and healthcare providers and staff have expressed extreme frustration and hatred toward their respective EMRs (Arndt et al., 2017). EMR optimization strategies must account for the implications of leaders being able to diagnose change resistance by addressing both practice autonomy and EMR administrative burdens.

Implication 3: Communicating a Clear Vision

Communication was an important theme that emerged from the results of this research study. The study supported the importance of a leader's ability to create and communicate a vision for a successful EMR optimization strategy. Kotter (1996) emphasized effective communication throughout the organization by ensuring that the vision of the change management strategy is communicated in a way that is simple, jargon-free, uses metaphors and analogies, paints a vivid picture of the change, and is communicated through as many avenues as possible. The implications of leadership effectively communicating the vision for an EMR optimization strategy were supported within this research study by the primary theme of communication and the associated subthemes of channeling and messaging. Leadership must utilize various communication channels, including in-person forums, electronic means, and newsletters. Leaders must also ensure that they are messaging and conveying information about EMR optimization strategies in ways that are clear to everyone. Developing clear and easy understanding with intention and purpose-built messaging that is translatable to all employees

throughout the organization can increase the likelihood of success for EMR optimization strategies.

The literature review for this study emphasized several important areas that aligned with the implications of communicating a clear vision. The importance of leaders communicating a vision for EMR optimization strategies can help advance the potential benefits and functions of the EMR system and, in turn, can directly aid in combating provider burnout. First, identifying how EMR benefits and functions can be optimized advances a message that the EMR system can reduce medical errors, predict drug interactions to aid healthcare providers and staff, and streamline patient care visits to increase patient-facing time (Menachemi, 2012). Second, when leaders make the business case for the investment and support for EMR optimization efforts, this sends a clear message of wanting to improve workflow efficiency and reduce the clerical burdens associated with EMR systems (Collier, 2017). As the literature review revealed, a clear vision addressing the critical areas of EMR benefits and functions and combating provider burnout is a key aspect ambulatory practice leaders need to consider for an effective EMR optimization strategy.

Recommendations for Action

The research findings identified several themes and subthemes regarding strategies ambulatory practice leaders can use to optimize EMR systems. In this section, five recommendations based on the findings and results of this research study are presented. The following recommendations can aid ambulatory practice leaders in creating, deploying, and maintaining more effective EMR optimization strategies.

Recommendation for Action 1: Optimization Requires Accountable Leadership

Leadership is the most cited primary theme for this research study, along with the associated pair of subthemes of vision and engagement. According to Kotter (1996), leadership is the most critical component of any large and complex organizational change management effort. Kotter's (1996) process for leading change emphasizes the importance of specific leadership skills to successfully lead change, including creating a vision and engaging other leaders and staff across the organization. Based on the results from this study, leadership is a foundational element required to establish and sustain an EMR optimization strategy. Leaders need to create a compelling vision with the ability to reach multiple levels throughout an organization. Vison leads to engagement, which can ignite other leaders and staff to want to be part of the strategic efforts. Based on the findings from this study, the most critical recommendation is to select an accountable leader to successfully create the vision and engage other leaders and staff throughout the organization to gain buy-in and support for the EMR optimization strategy.

Recommendation for Action 2: Optimization Requires a Governing Body

Establishing a governing body was another highly cited primary theme, along with the associated pair of subthemes, prioritization and value proposition. Kotter (1996) also emphasized the importance of leading change by establishing a governing body to help organizations empower leaders, align around agreed-upon goals, and establish a support structure that can help sustain complex change management strategies. Established governance structures and functions are also critical to help align the measures of success with a specific set of prioritized EMR optimization strategies that yield a high-value proposition across the entire organization. Governing EMR optimization strategies toward the highest priorities that offer high-value

propositions enables leaders to build credibility and confidence across the organization. Establishing an EMR optimization governing body comprised of the right leaders is another recommendation based on the results derived from this study which could help ambulatory practice leaders and organizations develop and deploy an EMR optimization strategy.

Recommendation for Action 3: Optimize and Standardize Toward Integration

EMR optimization and standardization were two primary themes that emerged, along with their respective and associated pairs of subthemes, including efficiency, productivity, best practices, and repeatability. EMR optimization and standardization efforts can occur in silos, which can compromise the opportunity to provide reliable, repeatable, and high-quality standards of care and best practices across the enterprise. The localization of decision making can be a cultural challenge, as individual sites and practices create standards without the full context and without an awareness of the downstream impacts across the entire system. The concept of EMR harnessing optimization and standardization opportunities toward an integrated system of care has the potential to streamline efficiencies and ensure repeatable and predictable best practices of care to increase productive workflows. EMR optimization strategies that ensure optimization and standardization efforts that account for larger integrated care practices and models are therefore a recommendation to help ambulatory practice leaders develop and deploy successful EMR optimization strategies.

Recommendation for Action 4: Resistance to Change Requires a Plan

Change management emerged as the second most cited primary theme from this research study and was directly associated with the paired subthemes of resistance and volume of change. Organizations must expect and anticipate resistance to change related to EMR optimization strategies. As Kotter (1996) emphasized, the speed and pace of change can significantly impact

an organization's ability to be successful in change management efforts. The complex and interwoven dynamics of resistance require a leader to effectively diagnose change resistance based on an organization's culture, leadership teams, departments, and employees. Leaders must proactively anticipate change resistance toward EMR optimization strategies and manage them with strong consideration of volume of change an organization can effectively consume. Leaders must prepare for resistance and develop proactive change management plans as part of an overall EMR optimization strategic roadmap. Finally, as part of the larger EMR optimization planning, leaders must also be conscientious of the right pace to ensure a higher chance of success for an EMR optimization strategy.

Recommendation for Action 5: Insular Thinking Hampers Optimization Strategies

Organizations are often hesitant to consider an external point of view when considering EMR optimization strategies (Evans, 2016). Leaders need to take proactive steps in working with other organizations, utilizing outside consulting firms, and finding ways to strengthen the current EMR vendor relationship to gain a deeper understanding into how their respective EMR optimization strategies are working. Kotter's (1996) process for leading change also emphasized the importance of gaining an external perspective as a key consideration in developing and anticipating change management efforts across an organization. Kotter (1996) emphasized that leaders should strive to have complete information regarding their internal flaws and weaknesses when embarking on change management plans and strategies. Gaining an outside industry perspective and collaborating with the EMR vendor and other organizations regarding EMR optimization strategic plans can be an essential step toward a more effective EMR optimization strategy. The final recommendation from the findings of this research study is not to let insular

thinking hamper optimization strategies, as gaining an outside perspective may be valuable for a successful EMR optimization strategy.

Recommendations for Future Study

Additional studies on the strategies ambulatory practice leaders use to optimize EMR systems are needed to provide different perspectives and to gain a deeper understanding of this complex subject matter. The present research study is transferable, such that other researchers can use it to gain insights into various aspects of the complex problem of EMR optimization while also uncovering issues that still need to be understood more deeply. Based on the findings from this qualitative research study on the strategies ambulatory practice leaders use to optimize EMRs, the following changes are recommended in future studies to address present limitations:

- This study could have been strengthened by including more than one healthcare organization within the same geographic region or in other regions of the United States.
- This study was conducted with a small sample size of research participants and the selection criteria included being a senior leader throughout the same organization. Increasing the sample size of research participants and incorporating other leaders throughout an organization can offer different insights and perspectives.
- The present research study was conducted utilizing 10 semi-structured interview questions, but including additional questions in future studies could offer deeper insights and identify any gaps in the data collection and analysis.
- Conducting quantitative research studies examining EMR optimization strategies that have already been fully implemented and associating specific interventions with EMR optimization strategic outcomes could provide more quantifiable insights.

- Researching this topic using a mixed-methods research design has the potential to identify differences or similarities between healthcare and other industries related to electronic system optimization strategies and the importance of leadership.
- International qualitative research studies that explore EMR optimization strategies within ambulatory practices and compare the differences or similarities across the United States.

Conclusion

The purpose of this qualitative phenomenological study was to explore ambulatory practice leaders' lived experiences and the strategies they used to optimize EMR systems. This study's main research question was: How do ambulatory practice leaders describe their strategies for optimizing an EMR system? This study also supported the association of themes and subthemes with Kotter's (1996) eight steps for leading change, the conceptual framework underpinning this research study. The themes and subthemes from this research study identified that healthcare leaders recognized both the complexities and value EMR system optimization strategies can bring to an organization. As a result of the study findings, the research provided several recommendations for ambulatory practice leaders to aid in EMR optimization strategies.

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Appendix A: Interview Protocol and Questions

Date of Interview:

Interviewee Code:

Start Time:

End Time:

Interview Protocol

Researcher – What will you do	Researcher – What will you say, script
Introduce yourself as the researcher and your role as the sole researcher for this study.	**OPENING STATEMENT:** Thank you for taking time out of your busy schedule to allow me to interview you. My name is Jeff Brown, and I am pursuing a doctorate at the University of New England.
Ensure the participate is comfortable and understands the context of the research being conducted and how the next 45 minutes will be spent.	I am researching strategies ambulatory practice leaders use to optimize EMR systems. My intention with this interview is to gain insights, knowledge, and learning from your experience as a leader in EMR optimization efforts within your current organization. I also want to take a moment to ensure I review with you the contents of the Participation Information Sheet, answer any questions, or concerns you might have. If you need time to review, please take a moment now to refresh your memory. **INCLUSION CRITERIA:** You have been identified as a key senior leader within the organization who has direct involvement in the strategies used to optimize EMR system efforts throughout the organization. Your identity will not be disclosed, and I will remove any identifiable information. You are not obligated to answer any questions that you do not wish to answer. The total interview should take no more than 45 minutes, and I would like to record our session to ensure accuracy. Do you have any questions? If the explanation meets your approval and comfort level, I will please ask for your verbal approval to proceed, and I would like to begin recording.
Research Questions • Watch for non-verbal queues • Paraphrase and repeat back for clarity in understanding where needed • Ask follow-up questions for further investigation or	**Semi-structured Interview Questions** 1. Please explain your role and in what capacity have you participated in EMR system optimization efforts? 2. What strategies worked best to optimize the EMR system? 3. What communication strategies were used to help with EMR optimization efforts?

probing to get more in-depth information • Inquire to the point of data saturation of the question is accomplished	4. What strategies do you use to design and implement any of the EMR optimization changes in workflow and process redesign? 5. What notable improvements were made throughout the organization due to EMR optimization efforts? 6. Were any challenges encountered in trying to deploy or implement EMR optimization efforts, and if so, how do you overcome them? 7. What strategies were used to address employee concerns regarding EMR optimization efforts? 8. Can you identify any areas for EMR optimization which still need to be addressed across the organization? 9. If areas still exist to address EMR optimization, what strategies do you believe will work best to help improve these specific areas? 10. Do you have any other comments regarding strategies leaders should consider when optimizing an EMR system?
Conclude interview and ensure to thank the research participant	Thank you for participating in this research study, your contributions are greatly appreciated. Ask if I as the researcher missed anything or if there were anything they would like to add? Remind the participant of the identity disclosure along with removal of any identifiable information.
If required, inquire about scheduling a follow-up check interview	I will contact you within the next 1-3 weeks to schedule a follow-up interview and/or meeting for further inquiry of some of the questions.

Follow-up Interview (only if required)

Remind the research participant of the purpose of the study and which specific questions were asked before along with the remaining questions to be asked	Proceed in asking any remaining questions and/or any follow-up or clarifying points to any outstanding questions.

Appendix B: Recruitment Email

Dear: Potential Research Participant

I am writing to let you know about an opportunity to participate in a voluntary research study about Strategies Ambulatory Practice Leaders use in Optimizing Electric Medical Record Systems.

This study is being conducted by Jeffrey Brown, as I am pursuing a Doctorate in Education from the University of New England.

Participation includes a 45-minute recorded Zoom session where I will ask you a series of semi-structured questions to gain a deeper understanding of the various strategies used in optimizing electronic medical record systems within your current organization.

- The implications of this study are to gain a deeper understanding of the various strategies ambulatory practices and their leaders utilize in optimizing electronic medical record systems.
- Every precaution will be taken to secure your personal information to ensure confidentiality.
- Participation in this study is voluntary.
- You do not have to take part. If you decide not to take part, or if you change your mind later, there will be no penalties for nonparticipation.
- If you decide to participate, you will not be required to answer all the questions and can stop at any time.

The inclusion criteria for participants for this research study include a small and selective population of senior leaders who have been directly involved with EMR optimize strategy efforts within the current organization.

Please reference the Participation Information Sheet attached to this email for more detailed information regarding the purpose of this study, why you are being asked to participate, information regarding the privacy and confidentially of this study, along with your rights as a research participant.

If you would like additional information about this study, please contact Jeffrey Brown at 857-544-0926 or email me at jbrown56@une.edu or my You can also contact the program supervisor, Dr. Ella Benson at 757-450-3628 or via email at ebenson2@une.edu

Thank you for your consideration, and once again, please do not hesitate to me if you are interested in learning more about this research study.

Jeffrey Brown
Principle Investigator

Appendix C: Participation Informational Sheet

Title of Project: Strategies Ambulatory Practice Leaders use in Optimizing Electric Medical Record Systems

Principal Investigator(s): Jeffrey L. Brown, University of New England

INTRODUCTION

- This is a project being conducted for research purposes.
- The intent of the Participant Information Sheet is to provide you with pertinent details about this research project.
- You are encouraged to ask any questions about this research project, now, during or after the project is complete.
- Your participation is completely voluntary.
- The use of the word 'we' in the Information Sheet refers to the Principal Investigator and/or other research staff.
- If you decide to participate, you have the right to withdraw from this research project at any time without penalty.
    - If you decide to withdrawal from this study all information gather from interviews and notes will be destroyed and no information gather will be referenced, in anyway, as part of this research study.

WHAT IS THE PURPOSE OF THIS PROJECT?

The purpose of this qualitative phenomenological study is to explore strategies ambulatory practice leaders use to optimize electronic medical record systems.

The implications of this study are to gain a deeper understanding of the various strategies ambulatory practices utilize in leading change to optimize electronic medical record systems. Improving EMR system performance through optimization efforts can directly impact provider and workforce satisfaction levels, even decrease the amount of physician burnout related to cumbersome EMR-related administrative workflows and tasks.

WHY AM I BEING ASKED TO PARTICIPATE IN THIS PROJECT?

You have been identified as a key senior leader within the organization who has direct involvement in the strategies used to optimize EMR system efforts throughout the organization.

WHAT IS INVOLVED IN THIS PROJECT?

If you agree to take part in this study, we will ask you to answer a few questions about general strategies related to optimizing electronic medical records.

If you agree, the interview will take about 45 minutes and will be conducted over a recorded video conference using Zoom. The recorded zoom sessions will be transcribed and as a research participant of this study you will be given an opportunity to review the interview for accuracy.

WHAT ARE THE POSSIBLE RISKS OR DISCOMFORTS INVOLVED FROM BEING IN THIS PROJECT?

As with any study involving the collection of data, there is the possibility your confidential information will be shared with others. Every precaution will be taken to secure your personal information to ensure confidentiality.

In agreeing to take part in this study, as a research participant, I will be asking you to a series of open-ended questions and you have the right to skip or not answer any of the questions, for any reasons without question or recourse.

WHAT ARE THE POSSIBLE BENEFITS FROM BEING IN THIS PROJECT?

There are no likely benefits to you by being in this research project; however, the information we collect may help us understand how to help other healthcare leaders and organization optimize electronic medical records systems and the change management processes associated in making change more effective.

WILL YOU BE COMPENSATED FOR BEING IN THIS PROJECT?

You will not be compensated for being in this research project.

WHAT ABOUT PRIVACY AND CONFIDENTIALITY?

We will do our best to keep your personal information private and confidential. However, we cannot guarantee absolute confidentiality. Your personal information may be disclosed if required by law. Additionally, your information in this research project could be reviewed by representatives of the University such as the Office of Research Integrity and/or the Institutional Review Board.

The results of this research project may be shown at meetings or published in journals to inform other professionals. If any papers or talks are given about this research, your name will not be used. We may use data from this research project that has been permanently stripped of personal identifiers in future research without obtaining your consent.

The following additional measures will be taken to protect your privacy and confidentiality:

- I will be conducting the interview in a private setting, over Zoom video conferencing platform, to ensure others cannot hear your conversation.
- For interviews conducted online using the Zoom video conferencing platform, as a participant, you have the option to not turn on your camera if you choose.
- Private data will not be collected without your knowledge and consent.

- Storage of paper records, in this case handwritten notes, will be kept in a locked file cabinet in a locked office accessible only by the PI.
- Safeguarding data through use of on a password protect file on my personal computer of which I am the only who has access to the computer and the therefore the password protect files pertaining to all information related to this study and all associated materials.
- I will be stripping interviews of all personally identifiable information during the transcription process. Use of a pseudonym instead of the participants' name will be utilized for this research study.
- For all interviews, destroying the audio/video recording at the earliest opportunity during the project (after all transcripts have been verified for accuracy) will be practiced.
- Destroying participant personally identifiable information (name and e-mail) obtained for recruitment purposes at the earliest opportunity during the project (after all transcripts have been verified for accuracy) will be practiced.
- All participants will be given a pseudonym (e.g., P1-P6) based on the participants' name and their email will also be kept blinded from the final study results. The master list will be kept as a separate password-protected file from all other research information and study data and stored on my personal password-protected computer of which I am the only one who has access to the computer. The master list will also be destroyed after all transcripts have been verified for accuracy.

WHAT IF YOU HAVE QUESTIONS ABOUT THIS PROJECT?

You have the right to ask, and have answered, any questions you may have about this research project. If you have questions about this project, complaints, or concerns, you should contact the Principal Investigator listed on the first page of this document.

WHAT IF YOU HAVE QUESTIONS ABOUT YOUR RIGHTS AS A RESEARCH PARTICIPANT?

If you have questions or concerns about your rights as a research participant, or if you would like to obtain information or offer input, you may contact the Office of Research Integrity at (207) 602-2244 or via e-mail at irb@une.edu.