REVITALIZING HEALTH INFORMATION SYSTEMS

by

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Abstract

The evolution of medicinal practices has partnered with the dynamic nature of technology to produce health information systems (HIS). This type of equipment allows medical facilities to exchange data and offers patients the autonomy to monitor and control their health data. While this connotation seems revolutionary and ideal for all members involved in healthcare, several deficiencies have been noted throughout literature to include decentralized electronic health records (EHRs) and decreased accessibility, affordability, and quality of care. This study was compartmentalized into three separate sections to evaluate why organizations are delaying in their efforts to adopt a nationally accessible HIS/EHR system. The first section, the foundation of the study, sought to provide an understanding of the topic of HIS/EHR and presents several bouts of information to include how this technology has evolved into its current state. Moreover, awareness is given to the problem and purpose of the study and provides a focal point for the research by listing and elaborating the research questions and conceptual framework. Clarifying elements such as the definition of terms, assumptions, limitations, and delimitations are identified while also discussing the significance this study will have to relevant aspects of literature, the Christian ethos, and healthcare management. Lastly, a review of the professional and academic literature helps explain the vastness of this problem and how it directly relates to the problem statement. As the study progresses into Section 2, the project, readers begin to ascertain preparatory research functions and comprehend why aspects of the foundation of the study are suitable for this research. Furthermore, discussion of the practices utilized throughout the collection, organization, and analysis of data was explicitly detailed to abate any confusion further and ensure maximum success during the research process. This section concludes with clarification and thorough explanation of how the data were defended. Within the last section,

presentation of the results, raw data were analyzed and a synopsis of specific elements pertaining to the collected data and research process was detailed. This included statistical data and then progressed into more direct discussions, such as the identified themes found within the raw data. This information then linked the data back to the material within the foundation of the study to show any dissimilarities or correlations. Additionally, an association of the material with consideration to practical matters was provided as the researcher discussed improving general business practices, potential application strategies, application to professional practices, and recommendations for further studies. This section concluded with personal ruminations about individual and professional growth in addition to biblical associations. To close the entirety of the study, an overall summation of each section and a reiteration of the synopsis helped to emphasize the importance and relevance of this work.

Key words: Healthcare management, health information systems (HIS), electronic health records (EHR), flexible design, qualitative research methods, constructivist

Dedication

To God be the glory, first and foremost. Beyond His supreme blessings, there are a great number of people that have assisted and played a part in the completion of this endeavor. I am thankful to my close friends who have offered their time, attention, and concern, which allowed me to vent and regain direction over the past few years. To my Mama and late Nana, I offer extreme appreciation for always listening, offering advice, and pretending to understand even when the discussion was incomprehensible. The support from my husband, Patrick, has allowed me this opportunity, and without his endorsement and guidance, my success would not have been feasible. My darling daughter Camryn deserves more praise than any, considering the amount of sacrifice she has given to ensure I completed this aspiration. You are my muse and all things I do, I do for you. Finally, my Mac has been the catalyst of this adventure and the consistent source of encouragement throughout this process. I have no doubts in my mind that your constant mantra is the singular reason for my perseverance: “If it was easy, everybody would be doing it.”

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The most notable person deserving recognition is my dissertation chair, Dr. Morgan. Without his constant guidance and support, I would not have had the patience or the success necessary to finish this program. Additionally, the participants of this research were vital components to the progression and completion of this study. Without their time and inputs, I would still be waiting to move on to the next step. Finally, my fellow dissertation friends, Emily and Elizabeth, have provided a genuine camaraderie reminding me that I am not alone in this journey.

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Section 1: Foundation of the Study

Technological advancements have spawned the desire and demand for more innovative approaches to standard procedures. Within the healthcare industry, this ideology is a constant aspiration due to the progressive equipment and medicines being introduced as new medical anomalies present themselves. While the practice of medicine strives for more streamlined processes, the same has been demanded of the administration side; therefore, the industry introduced health information systems (HIS). The initial implementation of this system spawned mixed reviews suggesting that it was a revolutionary idea, but many factors have contributed to the unsuccessful adoption and implementation of a fully functioning nationwide exchange of medical information. With the copious benefits that can be found with having a universal system, the researcher seeks to identify the problems hindering its successful application. Throughout the initial section of this study, the researcher provides a background of the issue, defines the problem, and identifies the purpose for research. The researcher outlines the research questions that were used to guide the study in resolving the issue and provides a thorough discussion of the nature of research. Along with elaborating that design and methodology applied a qualitative approach to the collection and analysis of data, the researcher detailed various aspects of the conceptual framework. To alleviate confusion, key terms are defined along with listing the assumptions, limitations, and delimitations. Furthermore, this study provides an explanation of its significance towards healthcare management, and the clout Christian principles will bear towards the outcome of research. Finally, the researcher presents a comprehensive literature review of the professional and academic literature online.

The second section of this study is identified as the project. This section reiterates several topics previously discussed but provides an association of their relevance to the focus of this

research. The researcher reminds readers of the purpose of this study and then progresses to identify one's role throughout the research process. The research methodology is revisited except with the focus being placed on its appropriateness to this study. This section also begins to identify the participants, population, and sample size. Furthermore, the researcher details the data collection and organization plans and elaborates on the data analysis. Finally, the researcher clarifies reliability and validity and explains how these terms, coupled with bracketing, were used to strengthen the quality of the results.

The final section of this study is a comprehensive review and presentation of the findings. Within this material, readers are provided with an overview of the study whereby readers will understand how numerous aspects of the second section were legitimately conducted and their subsequent results. Additionally, the researcher provides insight into how this material can be applied to professional practice. Specifically, the researcher discusses various ways this study can improve general business practices and how the material can be applied strategically. The researcher also includes recommendations for future study and what potential researchers should consider when outlining their proposal when studying this topic further. Moreover, a personal reflection portion is included to explain how the researcher grew intrinsically and professionally. Finally, the researcher reaffirms the Christian lens being applied to this study by providing a biblical correlation of the business functions present throughout the findings.

Background of the Problem

Technology has had impactful influences throughout many facets of society. Within the healthcare industry, medical records have transitioned from paper documentations to electronic data, referred to as electronic health records (EHR). Furthermore, the inputting and storage of this data sparked many to develop systems, known as HIS/EHR, that would aid in sharing this

information for the purpose of streamlining operations and enhancing the quality of care provided to patients. For many years, numerous types of HIS/EHR were developed, but none ever reached the full potential of seamlessly exchanging data between institutions. Upon noticing these inconsistencies and the potential benefits for the industry, the government intervened to pass the HITECH Act, which outlined expectations for implementation and information technology standards and offsetting costs for those medical organizations adopting and utilizing its EHRs (Washington et al., 2017). Although this Act has accomplished many successful milestones, it has not reached its full potential and met expected achievements.

Problem Statement

The general problem addressed was the delay of the healthcare industry to adopt and implement a fully functional nationwide healthcare database framework resulting in potentially decentralized EHRs, increased costs, and inconsistent, delayed, and reduced quality of care. The use of EHRs has streamlined many functions within the healthcare industry; however, they are often maintained by the originating medical facility and are unattainable to other medical providers without expressed permission from the patient (Seroussi & Bouaud, 2017). In recognition of the need to centralize records and patient data, the United States has invested $540 million to the State Health Information Exchange Cooperative Agreement Program for the development of a technical infrastructure that will operationalize a HIS/EHR for each state; however, numerous local barriers such as consent, costs, and governances inhibit the industry as a whole to successfully adopt the practice (Vest & Kash, 2016). While the devotion of the government's financial resources towards the idea of HIS/EHR in the American healthcare industry has produced more than 100 HIS/EHR systems and garnered support from roughly one-third of the healthcare industry, the long-standing results show that many of the systems are

incompatible with one another and defeat the purpose of centralization and the efficient exchange of information between entities (Walker, 2018). The specific problem addressed was the potential delay of the healthcare industry to adopt and implement a fully functional nationwide healthcare database framework within non-profit medical facilities located in northeast Ohio, resulting in potentially decentralized EHRs, increased costs, and inconsistent, delayed, and reduced quality of care.

Purpose Statement

The purpose of this qualitative case study was to explore the cause of the delay of HIS/EHR and pinpoint the possible reasons for its lack of success. The problem was further deduced by exploring the implementation efforts found in selected non-profit healthcare organizations located in northeast Ohio. By focusing on non-profit organizations, the results should have yielded more conclusive outcomes considering they account for 58% of all hospitals in the United States (Liberatore et al., 2020). Non-profit organizations were designed to cater to all community members regardless of their economic standing; in return, they receive several tax exempting credits. Although these facilities receive less compensation for their services, they are held to an even higher standard than their for-profit counterparts to continue receiving benefits. Kellner et al. (2016) guided that non-profit funding efforts are awarded to those organizations that continuously improve performance by maintaining accountability and upholding demanding requirements. These statistics hold true for the Northeast Ohio region; specifically, the Cleveland area is known as the "hospital capital of the world" and provides one of the top five healthcare facilities in the country, Cleveland Clinic, along with other strong competitors such as University Hospital, Summa Health, and considerable alternatives in the surrounding areas ("The Top 10," 2020; Seper, 2011, para. 6).

Research Questions

Research questions are used to "narrow the focus and provide a structure to the research" and appear as "an unambiguous statement that clearly articulates the phenomenon you plan to investigate" (Kivunja, 2016, p. 167; Kross & Giust, 2019, p. 24). When considering the different elements that affect the efficiency of the HIS/EHR system, the researcher sought to address deficiencies found within aspects of the EHR framework. Specifically, the research was guided to question policies, procedures, and implementation strategies to uncover various ways that the system was either succeeding or failing and counter with tactics that could not only resolve the compatibility error but also improve the quality of healthcare being provided. Furthermore, the data collected were used to quantify the benefits of standardizing the EHR framework and how these advantages made the proposed HIS/EHR system more universal and revolutionized processes within the healthcare industry towards being more effective. Finally, literature was presented to show the intrinsic differences between the generations working in the current workforce and how each generation had valuable input to contribute towards positive change in the healthcare industry. With these factors considered, the researcher presented the following research questions and their relation to the problem statement.

RQ1: Why do non-profit healthcare organizations in the northeast Ohio region delay in their efforts to adopt and implement a nationwide database framework for EHRs?

RQ1a: How do policies, procedures, and implementation strategies contribute to the delay of the system?

RQ1b: How do policies, procedures, and implementation strategies contribute to the functionality of the system?

RQ1c: How can the adoption and implementation of a nationwide healthcare database improve the quality of healthcare?

RQ2: In what ways could a more standardized EHR system be effective in the exchange of data found within the HIS/EHR?

RQ3: How do the culture and characteristics of the current generation of healthcare workers differ from previous generations of healthcare workers?

RQ3a: How do the culture and characteristics for the current generation of healthcare workers enhance positive change strategies for the healthcare industry?

Discussion of Research Questions

RQ1. As the first and major question guided research, this inquiry sought to uncover a significant amount of material. Vest et al. (2019b) expressed that current operations either use enterprise or single-vendor systems. With enterprise frameworks, organizations and their affiliates can transfer EHR data from various vendors between one another, whereas the single-vendor system increases access to EHRs by having a single sign-on platform for all users, no matter their affiliation (Vest et al., 2019b). Vest et al. (2019b) continued that the enterprise framework is seen in more facilities within the healthcare industry due to acquisitions and mergers, but the researcher questions why the healthcare industry warrants its continued use. The point of HIS/EHR is to increase the interchangeability and accessibility of EHRs, but the industry has not fully adopted this type of system. To further promote the use of single-vendor systems such as EPIC, the HITECH Act was established to incentivize health professionals and hospitals into adopting current EHR technology (Esmaeilzadeh & Mirzaei, 2018). While there has been substantial participation by outpatient services to the degree of 94%, EHRs located within a physician setting are only being utilized to a 59% rate (Sorace et al., 2020).

From this information, the researcher deduced that the desire for this technology existed and that the healthcare industry was willing to participate, but there are others that continue to opt-out. This research question addressed the opening line of the problem statement and broke the issue down into determining what makes its adoption and implementation a delay for some and increased functionality for others. Initial discovery determined that the healthcare industry is comprised of multiple types of end-users that support their respective policies, procedures, and strategies through the use of technology that best suits their particular needs, whether it be the protection of patient information or financial reasons. Furthermore, a more profound analysis was deduced by understanding the concepts gleaned from all users. Moreover, the researcher sought to expound on how the universal adoption of this system would help improve the quality of care provided to all patients.

RQ2. The research presents that many issues concerning the successful adoption of HIS/EHR systems stem from the different types of EHR systems currently being used. Like any other business, the moment manufacturers saw the opportunity in a new market. They began developing similar technologies for a cheaper rate. Sorace et al. (2020) listed the top five chosen EHR systems like EPIC, Cerner, MEDITECH, Allscripts, and McKesson. While EPIC and Cerner dominate the market and are more commonly used, these other systems help to increase competition, quality, and affordability; however, their benefits also increase the level of incompatibility between the systems (Sorace et al., 2020). While competition is good for the economy and market, there must be a level of compatibility between each system. The second research question for this analysis identified the different benefits and efficient methods that could stem from compatible systems and advocated the need for a more uniform framework.

Furthermore, this question sought to determine how consistency could be reached without hindering necessary business competition.

RQ3. This research question sought to delve deeper into the culture and characteristics of the people populating the healthcare industry. Surveys have determined that 84 million workers in today's markets are Generation X (those born between 1964 and 1980), and 71 million workers are classified as Generation Y (those born between 1980 and 2000; Burton et al., 2019). These two generations working together present opposing mindsets and principles based on the social aspects affecting the population during that timeframe. As Generation X places considerable focus on work-life balance and pursuit of their career, Generation Y, having been influenced by technology since birth, has more interrogative characteristics and seeks to make a difference by producing something worthwhile (Arora & Dhole, 2019; Burton et al., 2019). This final research question sought to detail the differences in each generation, but it also implored the study to determine how these differences would positively affect change strategies. Based on a preliminary review, the exposure to technology imparted on Generation Y from such an early age will provide great benefits to the healthcare industry.

Specific Problem Statement Coverage. In summation, each question presented within this research sought to break the overall problem down to a fundamental form and analyze multiple aspects to make an informed conclusion. The first question aimed to identify what made the system functional and the continued delay for others. The second question analyzed the benefits that can stem from the purpose of HIS/EHR system: centralized EHRs. Finally, the third question investigated the intrinsic characteristics of the healthcare industry and how varying generations could be affecting the adoption and implementation of the system.

Nature of the Study

When addressing a difficult issue that needs resolution, one can become overwhelmed by the copious material and data collected throughout the process. To avoid these common setbacks found in any analysis, one can outline a style and method of research. The many paradigms and methodologies provide parameters for researchers to follow to ensure ample and substantial data are collected and considered and guarantee a logical solution is developed and determined. This study was conducted with a flexible design using qualitative methods; specifically, a multiple case study design was used. This portion of the discussion seeks to provide a thorough elaboration of the research paradigm, design, method, and triangulation followed throughout the analysis.

Discussion of Research Paradigm

The research paradigm used in this analysis is constructivist. The constructivist paradigm stems from the traditional philosophical paradigm known as interpretivism, which believes that a respondent's subjective meanings are to be acknowledged, reconstructed, understood, unmanipulated, and used as the basis of theorizing (Goldkuhl, 2012). Research following this paradigm is said to begin with open-ended inquiries where tentative conclusions, and even theories, are formulated based on these findings (Adom et al., 2016). Moreover, the literature suggests that this paradigm seeks for the researcher to not view the study from a distance, rather be enveloped as a participant in one's research (Walker & Dewar, 2020). Evaluation following the practices of the constructivist paradigm emphasizes collaboration, catering to change, and promoting opportunities for learning (Walker & Dewar, 2020). Because the researcher holds a moderating position within the study, participants are then enabled to develop their own skills

resulting in changes occurring throughout the investigation process rather than a product or recommendation after a study (Walker & Dewar, 2020).

Applicability to Research. The initial application of HIS/EHR shows a complex framework that has affected many aspects of the healthcare system. While many of the functions are intended to streamline operations and make healthcare more affordable and accessible, the results have not reflected this. As listed in the problem statement, EHRs have remained decentralized, and quality of care shows no significant improvements. These negative results were best explored through the qualitative methods comprising the constructivist research paradigm. Although the researcher has no prior experience within the healthcare field, this paradigm provided vital information by helping one understand the reality of the issue from the perspective of qualified individuals. Participants offered valuable experiences, opinions, and knowledge of the system, which aided in constructing new application methods. The most valuable caveat to remember is that the researcher had to maintain a malleable mindset accepting change and progression.

Discussion of Design

While there are many different qualitative research methodologies, the researcher sought to utilize the benefits found within a flexible design because it granted the researcher autonomy over the volume of quantitative data necessary to reinforce qualitative results (Creswell & Poth, 2018). Furthermore, it promoted an adaptive design capable of adequately responding to change within the experiment's environment (Spiller et al., 2015). The parameters of research may be modified or changed at any point as a means of linking later stages of research to earlier findings; however, the sample sizes of this type of design receive considerable scrutiny from a theoretical point (Jingjing, 2019). To remedy this criticism, researchers promote the use of group

sequential design instead of re-estimation design because it places fixed maximum information or sample size (Zhang et al., 2016).

Comparatively, a fixed design does not waiver throughout the collection and analysis stages. Fixed designs show researchers having already identified research elements such as the "purpose, theories, research questions, methods, and sampling strategies" before collecting any data (Kampenes et al., 2008, p. 2). A fixed design represents a waterfall model where each stage is dependent upon the deliverables of the previous stage (Kampenes et al., 2008). Additionally, select researchers believe there is no right design to follow; therefore, a third research design is recognized as mixed-method design. This perspective combines principles from both qualitative and quantitative methodologies and facilitates "initiating new perspectives, developing instruments, triangulating findings, clarifying results, and expanding the range of inquiry" (Shekhar et al., 2019, p. 7).

Discussion of Method

Determining a method of research is an important part of any research process. After the researcher ascertains the "how" and "why" of research, a methodology is determined to keep research efforts on task and organized. Qualitative methods allow researchers to empower participants to confer their experiences without the parameters of formal structure, which further boasts an understanding of the subject's perspective when addressing the topic (Creswell & Poth, 2018). It considers "why individuals think or behave the way that they do," and can be used to better understand barriers to successful implementations (Denny & Weckesser, 2019, p. 369). However, this type of research requires validation and trustworthiness to create a convincing argument. Cooper and Endacott (2007) summarized that reflexivity, methods, and rigor are sufficient means to achieve these integral attributes to research. Closely analyzing each facet: (a)

reflexivity calls for researchers to articulate and validate their procedures and measurement instruments; (b) methods must describe the type of sampling, interviews, observation, and analysis; and (c) rigor expresses the need for accurate record-keeping, saturation, triangulation, respondent feedback, fair dealing, and inter-rater reliability (Cooper & Endacott, 2007).

Qualitative research methods can be broken down into subcategories: narrative, phenomenological, grounded theory, case study, and ethnography. The narrative research method inquires a respondent to convey their lived experiences and invite the researcher into the midst of the story (Dwyer et al., 2017). Similarly, the phenomenological approach asks for an individual's account of a phenomenon and encourages a deeper exploration into the nuances behind their experiences (Paul, 2017). Grounded theory takes a different approach where concepts guide researchers through the analysis towards the development of a theory; therefore, the amount of data collected is based on the limits of saturation (Corbin, 2017). Much like the narrative and phenomenological approaches, ethnography also strives to understand the respondents' experiences; however, this approach goes a step beyond by requiring researchers to interpret the culture encompassing a group (Cruz, 2013).

Moreover, the method of this approach requires researchers to "immerse themselves in the social world of the participants" (Cruz, 2013, p. 37). Considering these interpretations, the researcher opted to use a multiple case study approach for this analysis. The reasoning for this decision stemmed from its advocation for the collection of data from multiple points within a single site or singular data collection from multiple sites (Creswell & Poth, 2018). Additionally, the theory of repetition applied throughout the multiple cases allowed the researcher to devoid the results of presumptions because the context of each case was considered (Creswell & Poth, 2018).

Conversely, quantitative methods rely on proving or disproving an already established assumption or theory. Researchers seek to infer a quantifiable relationship between independent and dependent variables for the purpose of deductive reasoning (Apuke, 2017). They must first generate an assumption that there is no relationship between the variables, known as the null hypothesis, and then test it using statistical analysis (Apuke, 2017). The objective is to "measure, evaluate, and generalize the findings to a population and encourage replication" thereby allowing acceptance or rejection of the null hypothesis (Park & Park, 2016, p. 4). While the researcher finds the numerical data of quantitative research more defendable against scrutiny, it also requires a standard of justification to be used as a generalizing assumption towards a population. Bloomfield and Fisher (2019) guided that quantitative research must encompass rigor, which is described as the level of control researchers impart on the variables to thwart the effects of "extraneous or confounding variables" (p. 28). Generally, quantitative research is perceived as reliable once the findings are consistently replicated or stable.

Discussion of Triangulation

Triangulation in research serves as the ultimate organizational tool helping to align multiple perspectives into one comprehensive and complete understanding of a phenomenon. The method is categorized in two ways: trustworthiness (the believability of a study) and validity (the extent of authentic results; Noble & Heale, 2019). Numerous researchers posit triangulation is divided into four different types: methodological, theoretical, data, and investigator (Jackson, 2018). Beginning with methodological, this facet is differentiated by its mixture of qualitative-based data collection techniques (Jackson, 2018). Theoretical uses numerous theories to interpret phenomena, whereas data promotes rationale through numerical information (Jackson, 2018).

Finally, Jackson (2018) guided that investigator grants the involvement of many researchers in the investigation of a concept.

Throughout this study, the researcher sought to interview various job levels of employees at healthcare facilities. While these interviews served as the basis for evidence, the researcher also extended a qualitative-based survey to be completed by each respondent before the interview. The highly demanding schedule typically found within the hospital setting requires that these assessments be quick but thorough; therefore, questions were narrowed down to assess precise behaviors associated with the constructs but still fall within the parameters of the interview questions. By following a methodological approach (collecting information from differing methods), the researcher could better corroborate the findings during the triangulation process. Many researchers advocate this practice and cite that validity is tested and achieved through converging data from varying sources (Wong et al., 2019).

Summary of the Nature of the Study

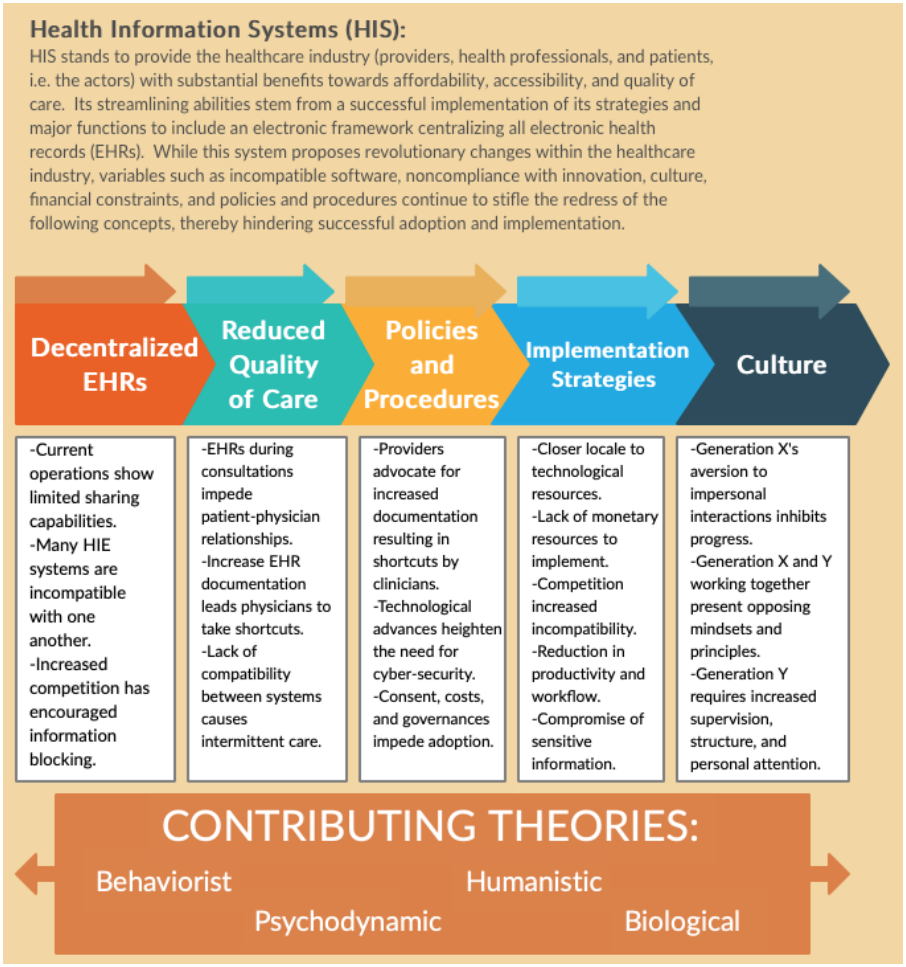
Throughout this discussion, the researcher expounded on how the study followed a constructivist research paradigm to facilitate an accurate account of the problem being researched. The researcher also discussed how the use of a flexible design using qualitative methods was more conducive to one's research topic in comparison to a fixed design found within quantitative research methods or a mixed design method inclusive of both research methods. Moreover, the researcher discussed how the use and application of a qualitative research methodology benefited the research towards determining a successful implementation strategy of HIS/EHR. Finally, the researcher elaborated on the triangulation methods that were employed to validate all findings.

Conceptual Framework

The framework of research helps to explicitly guide a researcher through the copious material and data collected throughout the explanation of a particular phenomenon. It is also meant to offer readers a lens to view the information being presented. Literature has noted several features that encompass conceptual frameworks such as (a) formulating concepts to act as integral pieces to the overall research, (b) providing an interpretive approach to phenomena, (c) offering an understanding of phenomena, (d) occasionally expressing uncertain results inhibiting accurate outcome predictions, and (e) stemming from qualitative analysis and empirical data (Jabareen, 2009). Comprising this generalized term are concepts, which are "symbolic statements describing a phenomenon or a class of phenomena" (Green, 2014, p. 35). Throughout this section, the researcher will identify the major concepts, theories, actors, and constructs contributing to the deficiencies and delays in the adoption and implementation of HIS/EHR systems (Reference Figure 1).

Figure 1

Conceptual Framework of the Inhibiting Concepts of HIS/EHR



Created by Lydia Peregoy

Concepts

The successful adoption and implementation of a HIS/EHR provides the healthcare industry and patients with numerous beneficial aspects. For the healthcare industry, centralized EHRs help provide the patient with improved quality of care, complete and accurate records, and improved communication between doctors interconnected with the overall care of a particular patient (Esmaeilzadeh & Sambasivan, 2017). Furthermore, EHRs grant the healthcare industry access to monitor and track chronic diseases and facilitate the early detection of infectious diseases (Esmaeilzadeh & Sambasivan, 2017). Lastly, patients stand to benefit substantially from

opting into sharing their records amongst the medical community. They are predicted to experience increased convenience, expedited care, quality of care, and reduced cost of care (Esmaeilzadeh & Sambasivan, 2017). While these benefits bring significant rewards for all parties involved in the healthcare industry, they are only achieved by overcoming the following concepts: decentralized EHRs, reduced quality of care, policies and procedures, implementation strategies, and culture.

Decentralized EHRs. As the market began to increase the healthcare industry's demand for an affordable EHR framework, various companies developed their storage and exchange systems. Walker (2018) noted that more than 100 HIS/EHR systems had been produced, but many of them are incompatible with one another. Moreover, more than 75% of hospitals and 50% of outpatient facilities currently using EHRs have limited sharing capabilities (Mamlin & Tierney, 2016). While competition made this revolutionary concept affordable for most, the different systems have made data exchange impossible. Additionally, the desire for a competitive advantage has led to EHR vendors primarily engaging in information blocking and occasionally hospitals and health systems participating in the practice, which perpetuates decentralization (Adler-Milstein & Pfeifer, 2017).

Reduced Quality of Care. In the past, patients visiting their local clinician would experience a face-to-face conversation about their ailments with the physician writing notes on a paper assessment, which was later recorded and filed in a physical storage unit. With the introduction of EHRs, patients have a vastly different encounter with their clinician where a computer monitor separates each party. This lack of personal rapport during the assessment has made many patients feel a decrease in patient-centeredness (Stanhope & Matthews, 2019). Patients then experience the intermittent quality of care as they move between facilities that have

incompatible EHR systems. Finally, the increased documentation associated with EHRs has led many physicians to spend approximately four additional hours each day doing computer work, negatively impacting communication with patients, career satisfaction, and job retention (Robinson & Kersey, 2018).

Policies and Procedures. Numerous local barriers such as consent, costs, and governance inhibit the industry as a whole from successfully adopting the practice (Vest & Kash, 2016). Each facility generates policies and procedures that guide operations within their respective location; however, more generalized standards and goals guide all participants within the healthcare industry. The industry recognizes the burden of documentation that many actors within the healthcare industry are experiencing and look to reduce this task with the introduction of HIS/EHR. The premise is to eliminate redundant documentation and testing; therefore, the HIS/EHR systems suggest that physician workload can be reduced. However, individual providers are mandating additional documentation, causing clinicians to use templates and copy-and-paste techniques, which result in substandard assessments (Mamlin & Tierney, 2016). Furthermore, providers worry about the threat of cyber-attacks and safeguarding patient privacy leading to the delayed implementation of a HIS/EHR framework (Zaidan et al., 2015).

Implementation Strategies. Many diverse factors must be considered when implementing a new system. With the ongoing delay towards making HIS/EHR nationally accessible, many common deficiencies have been noted with initial implementation efforts. To begin, many facilities noted their initial usage of EHRs reduced productivity and disturbed normal operations (Tutty et al., 2019). Moreover, within two years of using the system, more than 5.3 million patients experienced a compromise of their sensitive medical information, warranting the need for more enhanced privacy and security measures (Deliversky, 2014).

Although some users found the ongoing success of their HIS/EHR systems to stem from accessibility to sufficient information technology resources capable of maintaining the overall function of the system, others were unable to allocate sufficient resources covering the upfront implementation and maintenance costs (Atasoy et al., 2019). Finally, the increased desire for competition, quality, and affordability has led to the development of many EHR vendors, but their frameworks are incompatible with one another (Sorace et al., 2020).

Culture. Another barrier inhibiting the successful implementation and adoption of HIS/EHR is the diverse ideologies held by the different generations working in the current market. Generation X emphasizes work-life balance and enhancing their career; whereas, Generation Y is savvier with technology, explorative, and desires to make a change (Arora & Dhole, 2019). Because Generation X prefers communication and feedback from an interpersonal perspective, inhibitions arise from transitioning operations to exclusively electronic (Denaro et al., 2018). Conversely, Generation Y values success, progression in their career and requires more supervision, structure, and personal attention, which contradicts the autonomy found with EHRs (Kotz, 2016).

Theories

Numerous theories have been developed and are used in both quantitative and qualitative research to provide a comprehensive understanding of intrinsic aspects that cannot be understood or explained. With all of the researcher's research being cultivated from qualitative data, the following theories were considered relevant to this research study: behaviorist, psychodynamic, humanistic, and biological.

Behaviorist. This theory guides that learned behaviors are a gradual process, and the behaviors of humans are significantly influenced by their environment (Reimann, 2018). Many

have cited that utilizing this theory has been beneficial towards training programs due to its ability to analyze and observe measurable outcomes and changes in behavior (Gallagher, 2016). Specifically, this theory offers reinforcement of desired behaviors and offers them in three forms: positive (a reward used to strengthen desired outcomes), negative (behaviors are guided to avoid unpleasant outcomes), and punishment (a consequence given to eradicate an unwanted outcome; Clark, 2018). This theory is most related to the premise of the researcher's study due to the need for restructuring of training programs to change previously instilled negative connotations and behaviors of HIS/EHR. Furthermore, due to the different environments comprising the healthcare industry, using the environmental aspects found in the behaviorist theory allowed the researcher to study the problem as a collective whole or in segments.

The responses given by participants were collected and analyzed as a whole, but they were also categorized into different pairings throughout the research process to examine distinct factors as needed for the study. As a whole, the behaviorist theory appeared within numerous concepts depicting respondents to lean on their past experiences to order to adapt, overcome, and tolerate circumstances within their current working environment. Many respondents mentioned how they used their wisdom to maintain a versatile nature and increase the efficiency of their efforts.

Psychodynamic. The purpose of this theory is to uncover and explain human behaviors that are unconscious processes unbeknownst to the individual (Berzoff et al., 2016). Additionally, this theory seeks to collect information that can explain phenomena that may seem unrelated from a superficial standpoint (Deal, 2007). Regarding the researcher's study, the information gleaned from using this theory can help explain the cultural phenomena of different

generations and cultures working amongst one another and how this potentially affects the successful implementation of HIS/EHR.

Although the researcher could not categorize a distinguishable difference between the two generations, a healthcare culture was identified. More information regarding this synopsis will be discussed in length later in the study, but for the initial introduction of this theory, as it exists in the data, the researcher identified respondents having initiative and desires to make changes because it was in their intrinsic nature. While the organization and patients benefited from this action, the participants exhibited this behavior without prompt. Moreover, the researcher believes that organizations also evinced behaviors coinciding with this theory. Whether unbeknownst or not, medical facilities were cultivating an environment welcoming of new technology and perpetuated this appreciation with the advocation of readily available technical support aids and continuing education.

Humanistic. This psychological theory guides that the research of an individual should be based on a holistic design and is rooted in Maslow's Hierarchy of Needs theory (Winston, 2016). Maslow's Hierarchy of Needs theory suggests that humans are reliant and motivated by a hierarchy of needs: physiological, safety, love and belongingness, esteem, and self-actualization, where basic needs are satisfied more often and before the more complex ones (Winston, 2016). By studying the medical professionals holistically within their respective environments, the researcher's analysis will be more inclined to have valid results and more defendable outcomes.

The presence of this theory was evident throughout all the concepts being studied. All respondents recognized their dynamic environment requiring them to either submit to change or leave the environment. Each participant indicated their commitment to the field of healthcare and pressed forward in their current role within the institution, whether they believed in the changes

or not. Many adopted creative methods to maintain the status quo, while others exhibited a survivalist mindset. These individuals had an ambitious desire to not only sustain operations but also thrive amongst the diversity.

Biological. Largely comprised of the Theory of Natural Selection, biological theory suggests that behaviors are adaptive and evolutionary and can be summarized into five observations: (a) populations have the potential to considerably grow, (b) populations will plateau and stabilize upon reaching a particular size, (c) there are a limited number of natural resources, (d) individuals of a population are unique and differ from others, and (e) traits are hereditary (Gregory, 2009). The relevance of this theory to the researcher's study will provide information regarding the intrinsic values and justify the mannerisms of each generation, to include future ones.

While this theory was intended to identify distinguishable characteristics among the two cultures, it instead discerned a different cultural grouping among all healthcare workers. As will be discussed later, all respondents exhibited a collected desire for the sustainability of their environment and principles. This was corroborated by their efforts in working either singularly or as a group to devise creative methods towards adapting to new guidelines and technology. Moreover, the majority of respondents annotated extreme anticipation towards revolutionary technology, thereby justifying their endurable nature.

Actors

The healthcare system found within the United States is a complex coordination of care provided by numerous medical facilities and providers. Along with the number of clinics, hospitals, diagnostic centers, home care agencies, pharmacies, and nursing facilities offering care, the healthcare industry is comprised of patients, physicians, specialists, nurses, medical

assistants, pharmacists, and other variations of caregivers (Ranade-Kharkar et al., 2017). Throughout this research, the researcher sought to incorporate input from several of these entities to understand why the initial trials of HIS/EHR failed and how it could be improved for the future.

Constructs

For quantitative research, variables can be broken down into independent and dependent variables and are interrelated. However, the characteristics of qualitative research do not allow for this type of comparison. The variables in qualitative research are denoted as constructs and are more so definitions or actions of an individual, group, or environment of interest to the study that the researcher uses to help the reader better understand the situation (Maxwell, 2019). Within this portion of the research, the researcher explains how competition, innovativeness, conscientiousness, purchase intent, and compliance result in the healthcare industry suffering from decentralized EHRs and inconsistent, delayed, and reduced quality of care being experienced.

Competition. As the demand for newer and more affordable HIS/EHR programs continues to grow, health organizations will experience prolonged inconsistencies in the use, functionality, and quality of the services being offered by HIS/EHR providers. Their purpose is to provide the most innovative technology, which is likely to be incompatible with other suppliers or make their current versions obsolete. The construct of competition in this study was to understand and calculate how HIS/EHR competitors perpetuate issues relating to incompatible software, which is denoted to be components or systems comprising software incapable of operating together, either on the same computer or network.

The data collected for this study confirmed that increased competition was a factor for the incompatibility among HIS/EHR providers. While the respondents explained that they were satisfied with the reliability of their current HIS/EHR, they expressed complete disdain for the co-communicability between neighboring systems. The researcher will provide more information later in the discussion to elaborate on the specific complaints of users; however, readers can presently glean that because organizations choose programs based on their specific needs, there are many different systems being utilized in the area. Moreover, HIS/EHR manufacturers are vying to offer the most innovative and functional technology for all sizes of health organizations. Although this allows health facilities to have a reasonable selection, they are still opting to use EPIC.

Innovativeness. Innovativeness depicts the extent and willingness of a company to invest in new and innovative products when compared to others. For this construct to be successful, organizations must also cultivate an internal environment where this disposition is exhibited. Not only should organizations seek innovative technologies and practices, but the internal climate must allow for employees to share experiences and offer suggestions to streamline new operations (Shanker et al., 2017). As noted earlier, initial feedback from the use HIS/EHR suggests that the patient/physician rapport could potentially be compromised with the inclusion of this new technology.

Additionally, management notes increased documentation, physicians taking shortcuts, and intermittent care being received due to incompatibility issues. With some health organizations abstaining from or prolonging the adoption of HIS/EHR, this construct sought to provide a correlation between delayed innovation and decentralization among health facilities. Furthermore, this construct sought to determine if the deteriorating rapport between patients and

physicians stemmed from the inclusion or exclusion of this system or if the system compromised quality consultations.

The data showed that all medical organizations were using some type of HIS/EHR technology and were cultivating an environment conducive to its meaningful use. Within this region, decentralization is not stemming from a lack of innovative action by health organizations, it is from the competition generated between HIS/EHR providers. As a result, organizations are open to workers using shortcuts and other methods that allow them to use this technology simultaneously with their efforts of improving efficiency and quality of care. It was undetermined if this construct affected the rapport between patients and physicians, but the researcher will explain further in the study how the new innovative design of patient assessments left many users desiring a better layout and recommendations for future versions.

Conscientiousness. This construct sought to evaluate the conscientious personality trait, which is defined as "the propensity to be self-controlled, responsible to others, hardworking, orderly, and rule-abiding" (Roberts et al., 2017, p. 199). Many studies have concluded that traits are comprising this personality domain increase throughout one's life (Jackson et al., 2009). With the various generations working amongst one another, the researcher believed that specific innate generational behaviors could impact the adoption of new technologies such as HIS/EHR. Accordingly, this construct sought to explore the intrinsic characteristics of employees and their motivations towards accomplishing a task.

All participant responses reflected a high rate of conscientiousness and initiative towards their personal and professional endeavors. The researcher was unable to identify any significantly distinguishable traits among the two generations working together during this study. It was noted that respondents classified as Generation X exhibited characteristics typical to those

categorized as Generation Y and vice versa. As will be elaborated on further, the researcher believes that the data uncovered a separate culture, comprised of healthcare workers working together to bequeath wisdom and useful skills towards perpetuating the career field.

Purchase Intent. The relationship between consumers' behavior and their willingness to purchase a product is known as purchase intent (Curvelo et al., 2019). As studies have been conducted based on differing products, the relative consensus is that price, uniqueness, trust, commitment, and satisfaction are highly related factors in a consumer's decision to purchase an item (Al-Jundi et al., 2019). This study analyzed purchase intent from the perspective of a researcher seeking to better understand the correlation between health facilities and their intent to purchase new HIS/EHR technologies. While non-profit organizations receive numerous tax credits, they are still financially constrained due to their limited resources or location. As previously mentioned, the initial use of HIS/EHR has shown their inclusion in daily operations as more of a burden or hindrance to productive outputs. Considering the high standards that health organizations must maintain and improve upon to continue receiving tax credits, many non-profit organizations could significantly benefit from the increased quality of care predicted to be experienced through the adoption of HIS/EHR.

This portion of the data were only collected via administrative surveys. The researcher chose to focus on these actors compared to all other medical professionals due to their position within the health organization. While medical professionals themselves, they have elected to take a managerial role working between directors and frontline workers. The administrative respondents of this survey have first-hand experience using HIS/EHR equipment, but they also understand its role from an organizational level. The respondents equally conveyed that price was of no matter when the outcome of new HIS/EHR technology would improve the

organization's overall costs and efficiency. While one company focused on usability, the other cited that longevity was a key factor in selecting new technology. All the while, both organizations were partial to pilot tests before implementation efforts.

Compliance. Research has already determined that many policies and procedures being enforced undermine the assessment process during consultations and result in medical professionals taking shortcuts or being lackadaisical with documentation. Moreover, new policies and procedures are being enacted for health organizations to ensure patient privacy is safeguarded. Compliance in this study assessed the behaviors of employees and measured their level of comprehension of the current guidelines and their ability to comply with these regulations.

To help understand this construct, there were several survey questions that asked both respondents and administrators their thoughts on current policies and procedures. They candidly expressed their approval, disapproval, and suggestions for better renditions of current guidelines. This valuable information helped the researcher to determine that medical professionals are astutely cognizant of the guidelines being enforced by healthcare organizations and are willing to comply, even if they do not feel it is warranted. All health organizations made each policy and procedure readily available via their intranet and ensured that all employees were trained to access, review, and properly apply the regulations. As will be discussed in length later in the study, organizations offered routine inspections to ensure continuity and implored employees to seek help when needed.

Relationship Between Concepts, Theories, Actors, and Constructs

The researcher has presented each portion of the conceptual framework individually, but throughout this section, readers will understand how their outcomes are dependent on one

another, and any changes made for one will have a rippling effect throughout the others. Each element presented in the conceptual framework acts as an intertwined piece of a phenomenon. To elaborate, the actors serve as the starting point and provide researchers with both direct and indirect observations. These observations produce concepts, which are annotations that are observable or obtainable and based on current or known information. The second type of information researchers can glean is the more latent observations described as constructs. Theory allots for an extensive investigation of a phenomenon from different levels to include macro, mid-range, and micro levels; therefore, it has a direct correlation to explain the decisions and reasonings made by the actors.

Summary of the Conceptual Framework

The discussion of this framework has outlined and organized many facets of the research that was used to explain the reasoning behind why implementation of HIS/EHR has failed in the past. By first listing and examining the concepts, the researcher sought to explain several hindrances noted in previous implementation tactics. Theories to help understand why these barriers were experienced and how they could be used to eliminate errors in the future were also discussed. Moreover, the researcher described the actors and constructs that were found within the constraints of this research. Finally, a thorough discussion presented the relationship of each of these elements.

Definition of Terms

The following terms listed below are defined to provide readers with an explicit understanding of the context of each term being used in this study.

Affordable Care Act (ACA): A health insurance reform plan signed into law by former President Obama on March 23, 2010, making insurance more affordable and healthcare more accessible for United States citizens (Klepitsch et al., 2020).

Centralized Electronic Health Records (EHRs): Centralization of EHRs occurs when organizations consolidate and standardize operations that allow an uninhibited sharing of a patient's medical data (Sheridan, 2018).

Decentralized Electronic Health Records (EHRs): This situation occurs when information-sharing platforms are unable to systematically integrate, causing information to be derived and stored via numerous sources (Sheridan, 2018).

Electronic Health Records (EHRs): The digitization of a patient's medical data to include "demographics, progress notes, problems, medications, vital signs, past medical history, immunizations, laboratory data, and radiology reports" ("Electronic Health Records," n.d., para. 1).

Enterprise frameworks: Organizations and their affiliates can transfer EHR data from various vendors between one another (Vest et al., 2019b).

Exchange of information: The seamless transfer and integration of a patient's data between entities ("What is HIE," n.d.).

Frontline workers: These individuals are described as providing "low-cost, life-saving interventions across a spectrum of community healthcare needs" (Agarwal et al., 2015, p. 1003).

Generation X: Those born between 1964 and 1980 (Burton et al., 2019).

Generation Y: Those born between 1980 and 2000 (Burton et al., 2019).

Healthcare industry: Comprised of patients, physicians, specialists, nurses, medical assistants, pharmacists, and other variations of caregivers in addition to clinics, hospitals,

diagnostic centers, home care agencies, pharmacies, and nursing facilities offering care (Ranade-Kharkar et al., 2017).

Healthcare management: A field of management that provides "leadership and direction to organizations that deliver personal and consumer health services and to divisions, departments, units, or services within those organizations" (Buchbinder et al., 2019, p. 2).

Health Information Systems (*HIS):* The HIS is a platform designed to digitally store a patient's health data, enable instant access and exchange of this data for authorized users, and provide a "broader view of a patient's care" (Khubone et al., 2020, p. 327).

Problem-Oriented Medical Record: A medical record-keeping system for patients with chronic illnesses, where information is organized based on each problem, problems are divided by SOAP (subjective, objective, assessment, plan), then medical care is executed by the PDCA (plan, do, check, act) cycle (Takabayashi, 2017).

Quality of care: "The extent to which health care services provided to individuals and patient populations improve desired health outcomes" via means that are "safe, effective, timely, efficient, equitable and people centered" ("Quality of Care," n.d., para. 4).

Single-vendor system: Increases access to EHRs by having a single sign-on platform for all users, no matter their affiliation (Vest et al., 2019b).

State Health Information Exchange Cooperative Agreement Program: A program that "funds states' efforts to rapidly build capacity for exchanging health information across the health care system both within and across states" ("State Health Information Exchange," n.d., para. 2).

Assumptions, Limitations, Delimitations

The research being conducted in this study sought to identify a problem with a nationally recognized system. While the inferred results could benefit many people throughout the country, the considerations to culture between different regions pose a daunting task for research. To alleviate confusion and make the process practical, assumptions, limitations, and delimitations provide one with an illustration of the set parameters. The following section lists the researcher's assumptions and associated risk mitigation assessments, potential weaknesses, and boundaries to the study.

Assumptions

The results of this study relied on the assumption that the respondents being questioned would provide honest opinions of their accounts using HIS/EHR. The risk of having insufficient or inaccurate experiences exists in nearly all qualitative studies, but with the exhaustive search for data saturation, the impact of this risk rated low on a risk assessment matrix. This matrix determines the impact and likelihood of risk while also providing researchers with the ability to qualitatively identify which risks are critical and a means of prioritizing corrective actions (Sembiring & Wiharni, 2019). Furthermore, another assumption made throughout this research is that each participant has similar involvement using HIS/EHR. The researcher sought to divide respondents based on their hierarchical position within the healthcare industry because they have likely advanced at similar rates and share the same level of knowledge and credentials. This grouping aided in reducing the level of risk associated with this type of assumption. The final assumption was that technology would hold constant or improve to facilitate the continued progression towards digitizing operations in the healthcare field. Statistically, the demand for innovative methods that increase accessibility and quality of care while simultaneously

decreasing costs is viable. Studies have determined that healthcare organizations' spending on the internet of things will be approximately $534.3 billion in 2025, which depicts a 19.9% annual growth rate ("Internet of Things," 2019). This substantial figure promised a reduced risk of this assumption for the next five years.

Limitations

Because the sample size being selected is of a locational convenience rather than a nationwide random selection, the volume of respondents posed a potential weakness to the researcher's study. While the information in this study will bring attention to a national problem, the results will merely apply to those in the local area and a suggestion for others in different regions of the country. Other limitations within this research stemmed from the researcher's lack of experience in healthcare and in the realm of conducting research. The researcher mitigated these weaknesses by counseling closely with healthcare professionals outside the focus of this study and academic professionals experienced with research.

Delimitations

As the researcher began studying healthcare management, the idea of enhancing EHRs was a significant focus for the topic of this dissertation. As more research was conducted, it was determined that the greater problem resonated in the overall structure of information exchange. The idea, motivations, and system exist, but they continue to be an inadequate service for the healthcare industry. The researcher sought to objectify why the system has continued to fail and then use these facts to prove that their resolution would alleviate many of the problems currently experienced within healthcare. This can only be accomplished through qualitative means because the experiences provided by targeted individuals would be similar in nature but different based on their respective ideologies. Plainly, every individual is guided to make decisions grounded in

their intrinsic doctrines; therefore, the reasoning for one person's decision will be different than another, but the outcome may provide comparable results. It is believed that this element in the decision-making process makes qualitative research more beneficial than quantitative.

The posed research questions sought to analyze information about the overall expectations from medical facilities in addition to the recommendations from those who use or have used the system. While the researcher desired to analyze the policies, procedures, and implementation strategies from those facilities running a successful HIS/EHR, one also sought to examine the policies, procedures, and implementation strategies of those who were not successful. Of these unsuccessful ventures, the studied expectations were the ones implored on personnel before the fall of the system; therefore, the unsuccessful organizations' current policies, procedures, and implementation strategies were not considered. Moreover, this research aimed to identify beneficial processes that could enhance the functionality of HIS/EHR; hence, the researcher sought to question only those individuals with experience using the system. The research questions also sought to determine if there were any generational-based conclusions associated with the functionality of the system. The researcher did not exclude any age bracket from the respondents being questioned.

The healthcare industry provides a broad spectrum of services by countless individuals. The final delimiting factor showed that the researcher designated the parameters of this study to be conducted within the Cleveland and Akron metropolitan areas. These seven counties found within northeast Ohio serve as an abundant source of medical facilities and professionals. This area also provided the most diverse grouping of medical experts ranging from executives to frontline workers.

Significance of the Study

The Affordable Care Act (ACA) and consumers' expectations of increased accessibility, affordability, and quality of care necessitated innovation and prompted the need for a system such as HIS/EHR. Providing a significance of this study will incite curiosity and demand attention for the importance and benefits stemming from a fully functioning and utilized HIS/EHR. Throughout this section, the researcher will elaborate on how this research helps reduce gaps in current literature, discuss the topic from a biblical perspective, and relate the research to one's cognate.

Reduction of Gaps

Currently, the majority of healthcare organizations are using a specific type of HIS/EHR that works best for their facility and operations; however, many are incompatible with the different platforms used at other facilities. The logic of HIS/EHR exists, but the researcher sought to provide awareness towards the benefit of making these systems compatible. With the help of qualitative data, the researcher was able to provide an exhaustive search and exploration of the topic from the perspective of those who use the system daily. Discovering how some policies and procedures better serve the purpose of a universal system could be vital information for stakeholders and executives. Frontline workers could benefit from developing a fully compatible system, while human resource departments could find the intrinsic information about generational characteristics beneficial for their training initiatives. The researcher sought to use legitimate concerns and candid feedback to implore manufacturers to develop a communicable platform that benefits society. The goal for all Americans is to have affordable and accessible healthcare without compromise to service and quality.

Implications for Biblical Integration

God placed preservation of His creation in the hands of Christians and guided them in Genesis 1:28 to "Be fruitful and multiply and fill the Earth and subdue it…" (*English Standard Version Bible*, 2001). The Bible offers Christians a copious number of examples and parables to show what pleases God and how one should act. Much like "The Parable of the Talents" found in Matthew 25:14-30, Christian researchers are to emulate the behaviors of the "good and faithful servant" and cultivate their talents beyond the fundamental ones instilled within them at birth (*English Standard Version Bible*, 2001). Within this section of the discussion, the researcher elaborates on conducting research from a biblical perspective and how one's research will fulfill this requirement.

Business research is defined as the search for truth regarding business phenomena by applying an appropriate scientific method (Bell et al., 2019). Moreover, its purpose is to provide knowledge concerning any area of uncertainty within the business realm (Bell et al., 2019). Although conducting research is an important aspect of the progression of business operations and succession of human existence, Keller and Alsdorf (2012) advised that people must take a break from work and devote time towards worship to appreciate the fruits of their labor and "truly experience meaning in our lives" (p. 42). Once individuals accept Jesus Christ as their Savior, they are guided by a different moral compass; one where the view of humanity perceives each person as the bearer of the image of God (Keller & Alsdorf, 2012). This mindset changes the purpose and passion of the researcher's actions as stated in Philippians 2:4, "Let each of your look not only to his own interests, but also to the interests of others" (*English Standard Version Bible*, 2001). The process of research lists that the researcher should collect, analyze, and interpret data; however, should these functions be executed through the lens of a Christian,

hypotheses, research questions, morals and ethics followed throughout the research process, and the results are subject to an alternate outcome. With research fortified by the teachings found in the Bible, the researcher can ensure that exploration is conducted for both the progression and betterment of mankind.

The basis of the researcher's study is grounded in resolving the frustration and heartaches of others. Galatians 6:2 guides, "Bear one another's burdens, and so fulfill the law of Christ," which prompts the researcher's purpose for analysis (*English Standard Version Bible*, 2001). Many stories have been imparted on the researcher throughout the years discussing how familial disagreements regarding the desires of an unconscious family member, opiate abuse, lost or incomplete medical records, unnecessary or duplicated testing, prolonged pain or loss of life waiting for the shuffle of required documentation, and have caused anguish and disdain for the current healthcare system. These accounts of the discrepancies and shortcomings of the medical system have prompted the researcher to use the talent of education and research to develop a solution to these and many other resolvable issues. While the researcher can benefit from the findings of this study, the overall product will be a service that benefits each of the actors found within the medical industry and span the entire country. Furthermore, the information derived from this analysis will be a blessing for the many patients serviced by the medical industry and revolutionize the methods utilized by medical professionals. The researcher fulfills the role of a Christian researcher due to the moral and ethical parameters of Christ's example and the devotion and relationship with the Lord guiding one's desires to make His creation better than previously found.

This section of the analysis denotes another lens the investigation held throughout the research process. While standard research provides unbiased, factual notions, this research

incorporated additional elements and decisions guided by Christian values, morals, and beliefs. For readers to believe and validate the findings of any research, the parameters and scope of analysis should be detailed. In support of this important step in the research process, the researcher has detailed the process of conducting research using a biblical perspective. It can be seen that this type of research is conducted for the greater good using ethical principles found within the Bible.

Relationship to Field of Study

Healthcare management is defined as providing "leadership and direction to organizations that deliver personal and consumer health services and to divisions, departments, units, or services within those organizations" (Buchbinder et al., 2019, p. 2). As technology and the demand of patients and providers evolves, so does the focus of healthcare management. In recent years, the expectations of healthcare have progressed to placing more emphasis on patient-centeredness and value-based delivery models (Senthilkumar et al., 2018). This study sought to streamline functions within healthcare organizations and provided a service that encompasses both of these necessitated demands. This research benefited the researcher's cognate by introducing more practical systems for meeting these goals.

Summary of the Significance of the Study

The significance of this study will provide numerous benefits to both the healthcare industry and consumers alike. Throughout this section, the researcher elaborated on the relative gaps within research and how the information presented in this study aided in one's quest to make healthcare more innovative without sacrificing quality. Furthermore, the researcher discussed how the information derived from this research followed a Christian ideology and was

used for the benefit and improvement of God's creation. Finally, the researcher denoted the shared relationship between the research topic of HIS/EHR and healthcare management.

A Review of the Professional and Academic Literature

The innovation and progression of the medical field are nearly as dynamic as the technology used within it. Progressive medicine, treatments, and the desire to make operations more efficient drives many of the changes happening in the current healthcare field. One of the major changes that have recently taken place is the introduction of HIS/EHR. This revolutionary system has offered notable changes to how administration, providers, and patients interact and manage care. While the services of HIS/EHR have provided significant benefits, there are many challenges contributing to its delay in implementation and affecting its prolonged use.

The literature presented in this study seeks to identify current issues in the healthcare industry and how HIS/EHR are applicable to these concerns. Moreover, the discussion of how these technologies evolved into their formidable nature helps explain how they can resolve other healthcare issues. The researcher breaks the technology down into rudimentary forms by describing the different ways that data can be exchanged and the different types of business models that HIS/EHR technology is following. The current design and characteristics of a functional HIS/EHR are discussed, so readers understand the premise behind the concept. Additionally, the researcher explores five of the most highly used HIS/EHR in the current market. It is important to note the challenges that many of these systems are experiencing; therefore, the research presents a brief discussion on various influences that can contribute to the delay in adopting this system. Furthermore, the research specifically identifies and extensively discusses the concepts, theories, and constructs related to the research study. The researcher recognizes related studies and elaborates on several other aspects of the technology being

analyzed. Reflecting on future operations, the researcher discusses how HIS/EHR technology can be transformed and diversified to secure prospects for continued success. Finally, the information presented in this literature review contains several potential themes and perceptions. The analysis concludes with a brief discussion of some of these elements that can be encountered during the research portion of this study.

Business Practices

To understand the intricate labyrinth comprising the operation of HIS/EHR, the researcher will first break the system down into fundamental form. One of the greatest aspects contributing to the success of HIS is EHR; therefore, the literature presented below will first provide the background and purpose of EHRs and how they inspired the formulation of the HIS. Readers will also understand how HIS/EHR has evolved from rudimentary beginnings into the complex system seen in the current healthcare industry. The discussion continues to dissect the diverse compositions comprising HIS/EHR to include the various types of methods to procuring data and different business models available to consumers. The research presents a generalized view of a standard HIS/EHR and the common characteristics found within successful frameworks. Moreover, the section provides a thorough introduction and description of the five major vendors supplying these systems in the market presently. Finally, this section of the research concludes with how these elements have contributed to the prevalent issues experienced by most healthcare facilities.

Background and Purpose of EHRs and HIS

As the previous section identified several issues continuing to afflict the efficiency of the healthcare industry, this section seeks to provide a background of the technological advancements in record keeping and the exchange of medical data and how they have provided

significant contributions to the industry. The researcher will provide a historical timeline of the development of both EHRs and HIS and how they have given rise to the current utilized systems.

Evolution of EHRs. Throughout history, the population has developed various methods for charting, cataloging, and storing information. Physicians were noted to consistently use paper medical records sometime between 1900 and 1920, which prompted the American College of Surgeons to develop the American Health Information Management Association to standardize the documentation and recorded data found in these records (Evans, 2016). It was many years later, during the 1960s that Dr. Larry Weed developed the Problem-Oriented Medical Record and began advocating for its electronic version (Chowdhry et al., 2017). He recognized the limited capacity provided by physicians when compared to the limitless capacity that information technology could devote towards detailed patient information (Chowdhry et al., 2017). Additionally, the development of Medicare and Medicaid in 1965 caused an increased demand for accurate and consistent record keeping; therefore, many medical facilities were forced to adopt a rudimentary concept of EHR but would be reimbursed provided they met the "meaningful use" stipulation (Cohen, 2016; DeWalt et al., 2005). Meaningful use is categorized into three stages: (a) stage one defines "15 core and 10 menu-set objectives" providers must meet in regard to acquiring and sharing patient data; (b) stage two is met when patients are provided with a secure access to their medical information via the internet; and (c) stage three requires providers to expand their percentage of patients being covered and improve both their internal and external efforts towards increased quality, safety, efficiency, and performance (Rathert et al., 2019; Slight et al., 2015, p. 31).

Between the years of 1971 and 1972, three more dominating EHR systems were developed: (a) Eclipsys provided physicians with order entry capabilities, (b) Veterans Health

Information System and Technology Architecture allowed the Veterans Administration to become the largest healthcare system to implement and utilize a computer-based record and physician order entry system, and (c) Regenstrief Medical Record System followed a similar electronic records platform and was implemented within three hospitals at the Indiana University Medical Center (Doyle-Lindrum, 2015). These initial systems serve as the pioneers of HIS/EHR. After personal desktop computers became prevalent in almost all practices, the Institute of Medicine (IOM) guided that healthcare records would become paperless within the next 10 years (Ford et al., 2006). After this initial deadline from the IOM failed to be accomplished, former President George W. Bush expressed his interest in utilizing developing technologies and outlined a plan to ensure that most Americans would have EHRs within the next 10 years (State of the Union Address, 2004). Following his presidency, former President Obama passed the Health Information Technology for Economic and Clinical Health (HITECH) Act in 2009, making the adoption of EHRs mandatory by 2014, which subsequently led to 96% of hospitals and 87% of physicians successfully transferring to the use of EHRs by 2015 (Henry et al., 2016).

Evolution of HIS Infrastructures. The HIS is a revolutionary instrument added to the arsenal of tools comprising health information technology. The purpose of HIS is to facilitate improved healthcare services towards patients and allow data exchange among health providers (Khubone et al., 2020). As medical records make the transition to electronic data, this exchange of information and the use HIS/EHR becomes increasingly easy and more adaptable to progressive times. Furthermore, it gives rise to the idea that many of the medical industries leading problems can be mitigated through its use. As the idea of HIS/EHR has garnered attention and praise, the researcher seeks to inform readers of the rudimentary systems imparted

on the medical industry and how they have evolved throughout the years into the system seen presently.

Community Health Management Information Systems. Initial phases of HIS/EHR were introduced to seven states and cities in 1990 via community grants allowing medical facilities to have a repository of patient-specific demographic, clinical, and eligibility information along with billing and retrieval capabilities (Vest & Gamm, 2010). This beta design, dubbed Community Health Management Information Systems (CHMISs), had fleeting success due to unaffordability and ineffective technology (Hussain et al., 2015). Specifically, as the CHMIS entered its implementation and growth stages, several weaknesses and challenges were annotated: its size posed an issue for the security and confidentiality of patient information, users concentrated on one capability of the system instead of its overall intended design, the operational complexity was greater than expected, and many experienced problematic database integration concerns ("CHMIS," 1994). While the majority found fault with CHMIS and rendered it unusable and reverted to the original structure, others delved deeper into what could make it a successful infrastructure. Many during that era believed that the system would supplement an already functioning claims system "rather than working backward from a vision of a perfect system" ("CHMIS," 1994, p. 30). Other studies concluded that the system had the potential to become effective provided working relationships were formed between health enterprises, vendors, and community groups (Pepela & Odhiambo-Otieno, 2016).

Regional Health Information Organization. Following this system was the Regional Health Information Organization (RHIO), but it also failed implementation efforts because of an inability to create a sustainable business model (Greene, 2007). The system was designed to allow unaffiliated stakeholders to work with provincial clinical data in building HIS/EHR

specific to a particular region of the country (Adler-Milstein et al., 2010). The benefits of this system were guaranteed to reduce medical costs while bolstering quality, but many found the development of this type of HIS/EHR difficult. While operational RHIOs have the ability to exchange patient data, many studies suggest that comprehensive information is not capable of being interchanged (Adler-Milstein et al., 2010).

Furthermore, other studies have determined significant compounding hindrances to the consistent use of the RHIO. With lower patient/provider participation and decreased analogous communication between HIS/EHR, search results yielded insufficient data (Kierkegaard et al., 2014). Moreover, as grant and federal funding begin to dissipate, organizations are tasked with finding more sustainable monetary options to keep the system operational. Some researchers stated that should the system not prevail, resolution will have to stem from a federal level, while others contend that health organizations must view themselves as the business, and doctors, hospitals, and patients are the customers (Greene, 2007; Langabeer & Champagne, 2016).

HITECH. After recurring reports of redundant testing, increased costs decreased quality of care, and incomplete data leading to misdiagnosis, adverse events, and missed opportunities for clinical innovations, Congress felt compelled to pass the HITECH Act (Washington et al., 2017). This law sparked action in both public and private sectors towards digitizing all medical records leading to nearly all hospitals, close to 80% of office-based practices, and 87% of patients utilizing and having access to electronic health data, respectively (Washington et al., 2017). While this Act has forged a way for the nation to centralize EHRs and revolutionize healthcare for the benefit of patients, clinicians, and organizations, it still encounters obstacles further hindering its success. Patients are skeptical to submit their confidential information, physicians and other medical staff are inundated with inputting and converting information to an

electronic state along with additional training in the operation of new software, and organizations are obligated to choose the lowest bidder regardless of platform compatibilities (Halamka & Micky, 2017). Until these and other issues are resolved, the benefits found with the utilization of HIS/EHR will not be experienced.

Types of Information Exchange in Healthcare

The HIS/EHR structure is comprised of different types of models dictating the way information is exchanged. The movement of information holds various forms, and whether it is a push system (where information is automatically made available to all providers), a pull system (allowing providers to search the database for specific information), or a system allowing patients autonomy over their medical data, technology is fostering the ability to exchange data. Discussed here are the three main types of HIS/EHR models: directed, query-based, and consumer-mediated exchange.

Directed Exchange. Data being moved under the direct exchange originate and transfer between providers. The Direct Project was a service created in 2011 by the Office of the National Coordinator for Healthcare Information Technology to facilitate the "interoperable electronic transport of clinically relevant messages and attachments" (Lane et al., 2018, p. 205). This type of exchange was developed to replace the inconsistent and unsecure transfer of data by encrypting messages and meeting the rigid security measures of HIPAA (Roberts, 2017). The setup of a direct exchange mirrors the concept of email and requires little initial investment; however, both sender and receiver must be capable (Roberts, 2017). Furthermore, Lane et al. (2018) explain that over 100 healthcare organizations are using some form of direct exchange and that the technology has already been incorporated into over 350 EHR programs. Healthcare

providers and patients equally benefit because data has real-time transferability through a secure network, and the timeliness of care is expedited.

Query-based Exchange. Query-based exchange is a pull-type system where information is only made available when requested. Physicians searching for the medical information of a particular patient will query the database to see what data are available. This type of exchange brings "laboratory reports, imaging results, or clinical notes from multiple-providers" to the forefront and mitigates unnecessary hospital admission, redundant testing and procedures, and determining medication discrepancies (Vest et al., 2019a). While directed exchange is a more frequented method of inquiry, the resulting data presents fragmented information causing personnel to further their search via the query-based exchange (Vest et al., 2019a). This enhanced strategic search provides more applicable data and ensures all data are analyzed.

Consumer Mediated Exchange. This type of model allows consumers to access their medical information and control its contents and data. Patients have the autonomy to send their medical records at their discretion, make corrections to billing information, identify erroneous or missing medical information, and monitor their overall health ("What is HIE?," n.d.). This model has also garnered legal support with the enactment of The 21st Century Cures Act, which mandates patients have uninhibited access to their medical data (Bracha et al., 2019). Experts continue to posit that privacy is the main factor impeding this system's ability to be more successful. Patients choosing to participate in an electronic storage system of their medical information sign consent forms placing trust in the organization to protect their data, while others choosing to opt-out believe that their data will be exempt from this compromising position. The fact that many are discovering is that no matter whether one opts in or out of HIS/EHR, the potential still exists for their health data to be purchased and sold to the commercial market

(Cimino et al., 2014). This instills fear and anxiety about HIS/EHR, which is counterproductive to the changing era. Better efforts must be made to educate consumers on what "informed consent" actually entails so they may have a realistic view of their privacy options (Cimino et al., 2014).

Types of HIS Business Models

The steep costs of purchasing and implementing HIS/EHR have led to the division of the overall system into several different models that organizations can choose from. Options that entice the attention of for-profit organizations may not meet the budgetary constraints of non-profit entities. Furthermore, the ethical consideration towards patients has prompted the development of particular models. Because each model benefits different actors in the market, healthcare organizations must carefully choose the one that provides the best strategic advantage for their type of operation. Discussed throughout this portion of the research are four prominent models that healthcare organizations can choose from.

Non-profit. The premise behind non-profit HIS/EHR is similar to that of an organization: they are expected to provide services for the community in exchange for a tax-exempt status. The databases comprising the non-profit HIS/EHR business models are highly sought after because they help many non-profit organizations overcome "funding challenges and provide special tax credits/incentives" (Glaser, n.d., p. 5). However, the cost of these programs has to be paid in some capacity (i.e., grants, direct/indirect taxes, or membership dues), leaving many to opt for HIS/EHR with fewer features and has a subscription form of EHRs (Callan et al., 2014). Furthermore, the HITECH Act provides no guidance to the structured incentives being offered; therefore, an assortment of solutions is being offered (Adler-Milstein et al., 2011). While this leads many organizations to use basic programs that merely send information to known

receivers, a promising 64% of non-profit hospitals are making the effort to adopt and meaningfully use a regional HIS/EHR (Adler-Milstein et al., 2011).

Public Utility. The public utility model provides regional HIS/EHR a single, operable hub for the exchange of data (Raths, 2012). Glaser (n.d.) informed that this type of HIS/EHR business model is solely guided by the source of funding of each individual organization utilizing the program. This projects the model as a monopoly, which does not promote a free-market economy; therefore, value-added services are also offered for those looking for an enhanced experience (Raths, 2020). However, many could argue that the purpose of a public utility is to provide a service free to the public. Studies suggest that 60% of Americans desired electronic communication with their primary care team, 81% of physicians supported mobile care coordination, and 58% supported remote care (Kaushal & Darling, 2016). These statistics warrant the idea that patients and physicians alike believe care can be enhanced through the free movement of patient information.

Physician and Payor Collaborative. Healthcare is actively transitioning from volume- to value-based care, which rewards providers based on the quality of care patients receive and their overall outcome and experience. The collaborative model is a unique concept asking medical professionals, providers, industry, and payers to collaborate together to take a semi-functional system and fine-tune it into a service that reduces unnecessary care and excess costs (Brillstein et al., 2019). Generally speaking, these individuals partner together and work to improve care for the sake of the patient instead of focusing on competition. The success of this model depends heavily on the strategic alliances that are forged between entities. While some organizations choose to participate in informal mergers and acquisitions, others maintain a more formal stance and collaborate with like-minded organizations to ensure a more relevant future

(Land, 2017). This concept has garnered notable success as many payers are showing a slight decrease in the cost of medical expenses while the quality of care, relationship with providers, and patient engagement have simultaneously improved (Land, 2017).

For-profit. The for-profit HIS/EHR model follows traditional business practices in that it is privately funded with targeted return on investments (ROIs), having a goal of providing financial gain for shareholders and the bottom line (Glaser, n.d.). The investment in these types of HIS/EHR leads consumers to have high expectations for performance and functionality. Organizations allocate significant resources to one of these ventures with the idea that the services offered will enhance the quality of care and make operations more efficient. Although this model supports traditional business practices and is commonly seen in the healthcare industry to date, the resources necessary to secure the technology far surpass that of other models. This is why many health organizations subscribe to select features of the overall program, thereby reducing the efficiency and intent of the database.

Current HIS System

Over the years, the healthcare system has developed into a labyrinth of functions requiring better organization and tracking. Through the use of technology, many of these tasks have been revolutionized and offer more functionality and operability to better serve patients. Patients with chronic illnesses benefit the most from the use of this technology because it allows providers to base treatments on complete and accurate data (Vest & Gamm, 2010). Furthermore, pharmaceutical companies needing to issue recalls on prescriptions can contact affected patients in a timely manner (Vest & Gamm, 2010). These and many other uses have been a catalyst to the importance of developing an operable electronic storage and exchange system of health care

data. The researcher will describe several characteristics of a successful HIS/EHR and expound on the most popular HIS/EHR providers.

Characteristics of a Functional HIS. In an ideal scenario, a functional HIS/EHR exhibits particular characteristics that allow it to seamlessly be incorporated into operations while effortlessly exchanging data. Numerous studies have been conducted to determine what these common characteristics entail, but results have provided many different determinants. While each attribute is equally important, there are several that reoccur throughout all studies. Given the low rate of fully functional systems, the following literature seeks to expound on the characteristics that set these few apart from others.

First, security and privacy are the two most predominant concerns; therefore, they garner the highest rate of determining whether HIS/EHR is functional. Significant literature presented within this research will reinforce this connotation, but efforts to preserve the integrity of confidential information span global parameters. This inadequacy with the electronic storage system has plagued healthcare organizations across six different countries and serves as the causal link for delays in implementation (Payne et al., 2019).

The financial aspect of operations is another integral factor in determining a functional HIS/EHR. An established system should have a plan for sustainability beyond initial startup costs and government-acquired grants. The dynamic nature associated with the availability of grants makes this dependence a vulnerability of the system's continued use (Frankel et al., 2013). Government assistance works as a catalyst for developing HIS/EHR, but health organizations must implement and search for external revenues that are more reliable such as private sector funds or reimbursement incentives for participating in the exchange of data (Frankel et al., 2013). Similar to other processes within the operation, HIS/EHR should meet the needs of all

stakeholders; however, long-lasting HIS/EHR appears to be non-profit (Mack, 2011). With this type of structure, the focus is more tailored towards community enrichment and less on ROI.

Another facet that provides withstanding characteristics is the organization's ability to achieve defined outcomes and strategic goals. HIS/EHR is developed to be a service for health organizations and promise to deliver predetermined outcomes and performance measures. By developing and implementing the following inter- and intra-organizational responsibilities, HIS/EHR is said to be functional:

> data collection system that is common to all participants, professional and technical infrastructures for sharing the collected information, toolkits and protocols for integrating this information into administrative and patient care practices, and measures and documentation of improvements in actual patient outcomes. (Korst et al., 2011, p. 179)

Furthermore, HIS/HER's ability to endure critical times rests on its willingness to keep the mission and purpose statements as a top priority. These statements serve as the basis for each organizational strategy and remind the company of its stance on purpose, practices, and core values (Trybou et al., 2017).

Over the years, many companies have emerged in the healthcare market to provide and serve organizations with exchange capabilities. While there are numerous companies that can be analyzed, the researcher will expound on five of the most prominent systems in present healthcare operations. The literature will describe the operations of each company, how it is structured, and features that help secure its presence in the future market.

EPIC. One of the more well-known systems being utilized in current operations is dubbed EPIC. When viewing this organization's website, they pride themselves in the number of records successfully shared each month by proudly displaying a running tally updated each

second. The organization has managed to develop its software internally, 32% of its operational expenses are dedicated to research and development, and greater than 250 million patient records are housed within its system (Monegain, 2016; Newman, 2019). This organization is privately held and accounts for 20% of the EHR market (Johnson, 2016). Johnson (2016) continued that EPIC offers products that produce meaningful use data, fosters "rapid and thorough data transfers, expansions, and extensions from and to other EPIC-based systems," and data analyses capabilities (p. 37). Moreover, this company has structured its strategic goals to carry them into the future. Recent news reports show that Lyft, the ride-sharing application, has partnered with EPIC to facilitate healthcare providers scheduling rides for their patients through the EPIC system (Jercich, 2020). Innovative ideas such as these allow the organization to maintain its focus on the best interest of the patients and maintain a 91.3 (out of 100) score for customer satisfaction amongst its peers (Siwicki, 2016).

Cerner. Often seen as the rival to EPIC, Cerner is the next highly utilized for-profit HIS/EHR and expresses concern towards developing a patient-centered program that aids in the reduction of preventable errors stemming from a lack of information, communication, and research. According to their website, the company has grown to accommodate data exchange in more than 27,500 facilities in over 35 countries, equating to the management of 223 million citizens' information globally (Cerner UK, 2020). Cerner continued to pave the way in medical innovation by launching a new intelligence framework that integrates into the already utilized Cerner Unite platform to maintain connectivity while also empowering usability features (Cerner UK, 2020). The company claims this new software will allow medical professionals "to target social determinants of health and identify areas of need" in addition to alleviating physician burnout (Jason, 2020, para. 6). Specifically, over 35,000 hours of documenting in the past year

have been avoided through the use of their new technology, and they seek to improve these numbers in the near future (Jason, 2020).

MEDITECH. A well-known but less frequently used HIS/EHR, MEDITECH has garnered recent accolades and has been in the market of medical information technology for over 50 years ("About MEDITECH," n.d.). The organization seeks to enhance the care provided by physicians and elevate the care experienced by patients. By following this mission, they have been able to not only gain customers but retain the loyal business of 85% of their consumer base ("About MEDITECH," n.d.). This privately-owned organization has recently expanded into the global market and comprises 17% of the local healthcare industry; however, recent reports show a decline in the organization's overall revenue (Dyrda, 2020).

Moreover, the organization is working to remain competitive in the market by launching its newest program known as Expanse. This database works as an artificial intelligence virtual assistant and provides physicians with a hands-free approach for navigating EHRs, thereby revolutionizing their methods for care ("MEDITECH Launches Expanse," 2020). Since its inception, MEDITECH has experienced an 11% increase in customers and 67% of business in 2019 resulted in new revenues ("Expanse Success," n.d.). This innovative technology will secure MEDITECH's future within the healthcare information technology gamut.

Allscsripts. As a close competitor to MEDITECH, Allscripts is a considerably younger company with 30 years' experience that performs best in acute markets and throughout ambulatory practices ("Allscripts Garners," 2020). The company has designed several types of frameworks that cater to specific types of medical facilities. For example, the Paragon platform was created to benefit community and critical access hospitals, whereas Allscripts Community Care seeks to empower community hospitals ("Why Allscripts EHRs?," n.d.). While there are

many other facets that comprise the Allscripts platform, its desire to appease larger ambulator companies and multispecialty facilities is prevalent with its design of a newer software called Allscripts TouchWorks ("Why Allscripts EHRs?," n.d.). This publicly-traded company garners high praise from its customers with respect to their quality customer service skills. One article boasts that the organization takes time to train staff on the proper usage of their products, has an excellent over-the-phone customer care team, and should an issue not be resolved remotely, they will make an effort to fix it on site (Fox et al., 2001). The company has acquired the business of at least 180,000 physicians and houses 7.2 million patient records in its patient portal (Rouse, 2017). Additionally, Allscripts is securing its future in the market by signing a five-year extension of its contract with Microsoft, which allows the two companies to continue their strategic alliance in promoting cloud-based record storage services ("Allscripts and Microsoft," 2020).

McKesson. McKesson is a more diverse organization than the others discussed in this research because they provide more than electronic storage solutions. This organization is a pharmaceutical distributor, furnishes medical supplies and equipment, provides pharmacological solutions, provides EHR programs and services for biopharma companies ("Solutions," n.d.). The company began its journey into the HIS/EHR business in 2007 and has since expanded its abilities and services to include 27 entities and performs 2.5 million transactions per month (McTigue, 2011). As one of the founding members of the CommonWell Health Alliance, this organization strives to secure a future within the HIS/EHR community by working together with other similar databases to increase interoperability and make the overall functionality of the system perform better for physicians and patients ("McKesson Provider Sites," 2016).

Applicability to Current Healthcare Issues

The overarching goal behind the development of HIS/EHR was to make medical data digitally accessible to the personnel and patrons with expressed permission to view and share its sensitive content. As readers have gleaned, this task has proved difficult and leaves all users yearning for a more functional system. Clinical professionals, organizations, and society desire an uninhibited electronic system that not only reinforces the ideology of the ACA, but helps to alleviate many of the common issues currently being experienced in the healthcare realm. This section seeks to provide readers with insight on how these technological tools have the potential to benefit the healthcare industry but instead continue to contribute to the shortcomings being experienced in each area of concern.

Access to Care. The enactment of the ACA helped to reduce many of the experienced issues concerning access to care. The introduction of electronically stored and exchanged data has allowed greater access to records and information between patients, physicians, and others in the medical community. The Health Insurance Portability and Accountability Act (HIPAA) has always fostered and protected a patient's right to access their medical data (Kisekka & Giboney, 2018). In years past, a patient would have to coordinate with providers their desires for a copy of the information and then physically acquire them after providing credentialing information. EHRs and HIS/EHR have resolved the need for patients to coordinate with offices or physically appear at a facility for any materials. The amount of time saved is substantial and warrants success; however, there are many people choosing not to opt-in due to security concerns or social standing.

While security breaches are not a new concept to society, they are becoming increasingly common in the healthcare realm due to the industry's transition to digitization. Understandingly,

this makes patients skeptical in trusting their sensitive information to an already flawed design. Statistical data shows that of the patients opting to participate in HIS/EHR, upwards of 54% had experienced their data being compromised (Thimmaiah et al., 2019). The costs associated with a data breach are significant to the bottom line for many organizations. According to a recent analysis by IBM, the healthcare industry has expended $7.13 million in fees associated with security breaches and cited that 50% of breaches were due to cyber-attacks, 27% human error, and 23% from system failures (Landi, 2020). Although patients are excited about the benefits that HIS/EHR brings to the healthcare community, their presence imposes added risks to the comprise of sensitive data. Studies suggest that providers should develop a transparent stance and provide an explicit understanding "about how the security and privacy of patient data are preserved, under what circumstances data are shared, and with whom" (Kisekka & Giboney, 2018, p. 111).

Previous literature suggests that, while the ACA has promoted increased access to care, there are still subgroups of the population struggling to acquire this improved accessibility. According to the Henry J. Kaiser Family Foundation, Hispanics, Blacks, American Indians, Alaska Natives, and low-income individuals experience a higher barrier to care when compared to White counterparts (Artiga et al., 2020). Studies suggest that an intervention to these barriers can be applied so long as it is based on four of the following criteria: "(1) systematic identification, documentation, and definition of the specifics of the disparity, (2) explanatory research on the etiology of the disparity, (3) development and evaluation of the intervention research, and (4) translation and application of research results" (Mullins et al., 2012, p. 1880). By utilizing the vetting features found within digital storage and exchange systems, many of

these indicators can be filtered and searched, thereby allowing those within these subgroups to be reached.

Affordability of Care. Surveys conducted as recently as January 2020 have determined that 43.4% of Americans between the ages of 19 and 64 are still inadequately insured, and half of these respondents struggle to afford the medical debt associated with this inadequacy (Collins et al., 2020). Furthermore, many Americans are foregoing preventative medical services due to the required out-of-pocket spending (Adepoju et al., 2015). The cost of necessary services, due to not participating in preventative care, far surpasses the initial burden and impairs consumers in the end. Moreover, select states choose not to expand their Medicaid coverage leading to differential access to healthcare, which causes insurance disparities for certain racial/ethnic groups living in these areas (Adepoju et al., 2015).

Although the ACA works to decrease the financial burden of medical care, there are several factors contributing to the rising costs: (a) Medicare enrollees are expected to increase to 75 million by 2028, causing a significant spike in the cost of Medicare; (b) introduction of new, innovative healthcare procedures; (c) the complex healthcare system leads to administrative oversights; and (d) hospital consolidations result in decreased competition ("Why are Americans Paying?," 2020). EHRs and a functional HIS can lessen the impact of these financial burdens, and the study of numerous HIS/EHR has provided promising results showing increased savings in the laboratory and radiological testing, emergency departments, and admissions (Feldman, 2018). By curtailing unnecessary spending of these resources, organizations and consumers can equally benefit.

Quality of Care. The introduction of EHRs and HIS has sparked many debates in the efficiency of care between medical professionals and patients. The premise of these systems is to

streamline operations and make data readily accessible, but many are annotating a decline in the personal relationships between providers and patients in addition to incomplete or incompatible data. Medical professionals offered opinions on the use of these technologies and stated that, while the benefits made many operations easier and more efficient, other factors contributed to its ineffective outcome: limited system speed and functionality of the devices, decreased accuracy and specificity in charting notes, and inconsistent use of the notes section between medical professionals resulted in reduced intra-operational communication (Kossman & Scheidenhelm, 2008). With the concept for these technologies to be increased quality of care, analysis for performance enhancement can be studied from three perspectives: "from baseline level of adoption, from maturation of baseline functions over time, and from adoption of new functions" (Lin et al., 2018, p. 1128). These divided sections have allowed researchers to determine that size, teaching status, and dedicated time are important facets to the successful adoption of these new systems, which results in lower mortality rates and better quality of care for patients (Lin et al., 2018).

Decentralized EHRs. Both EHRs and HIS have played significant roles in transitioning data within the healthcare industry into electronic media, consolidating it to a singular platform, and making it capable of exchange. The purpose of these technologies was to enhance communication efforts between patients and their providers while also bolstering a stronger link between a patient's physician and other members of their healthcare team. Instead, these systems have either continued the issues being experienced or created new ones altogether. The current issues being experienced are not localized to a specific region or facet of the industry and stem from competition and avarice among health information technology (HIT) providers.

Decentralization occurs when the ability to systematically integrate information is inhibited, which leads to data being derived and stored on various platforms (Sheridan, 2018). The central cause of this phenomenon stems from both the current EHR and HIS. For example, each medical facility chooses a record management software that best suits their needs, which can be to store data in their local databases, with cloud service providers, or in compliance with insurance providers (Thimmaiah et al., 2019). These various methods have caused inconsistencies in the recorded information, hindered the easiness of data exchange, and skewed the accuracy in reading or deciphering shared data. Moreover, the initial investment, monthly fees, and maintenance costs of these systems explain why medical facilities select infrastructures based on financial availability instead of their functionality and shareability with other systems in the area. Upfront costs associated with implementing an electronic storage system include the purchase and installation of hardware and software, conversion of all physical medical data into electronic media, and the training associated with end-users (Menachemi & Collum, 2011). Furthermore, monthly pricing ranges from $500 to $1,200 per provider and entails additional fees for particular services or add-on features (Uzialko, 2020).

As previously discussed in the access to care section, security breaches and violations are a common occurrence with the introduction of these systems. Providers must diligently work with information technology specialists and maintain a transparent front to mitigate many of the ramifications associated with security concerns. Additionally, information blocking is an unfair practice being conducted since the increased use in HIT. As described earlier, healthcare providers and/or HIT vendors knowingly hinder the seamless exchange of data which negatively impacts patients. Some of the impediments to this practice include untimely access to patient information which causes decreased efficiency in care and increased healthcare costs and

prevents patients from changing providers due to non-portable health data (Black et al., 2018). Therefore, the introduction of these systems has contributed to this current trending issue.

The Problem

The healthcare industry has struggled to consistently provide patients with the care that they deserve and demand. History has presented many challenging factors that inhibit proper care to include debilitating diseases, wars, and pandemics; however, these factors do not discourage the government, healthcare organizations, or providers from striving to make services better and more efficient. One of the more notable advancements in the healthcare industry was the enactment of the ACA in March of 2010. Former President Obama sought to make health insurance more affordable and accessible to lower-income families, expand the Medicaid program to cover more individuals falling below the poverty level, and promote innovative medical advancements that directly lower the cost of healthcare (Obama, 2016). While government intervention and technological developments have made significant strides towards resolving many of the healthcare industry's major issues, several disparities continue to plague healthcare providers in their ability to provide optimal services for all of their patients. Throughout this section, the researcher provides readers with a glimpse of the healthcare market prior to and after the enactment of the ACA and the introduction of EHRs. The literature also offers a glimpse of the current status of these issues.

Access to Care

One of the greatest motivating factors for the development and implementation of the ACA was that many Americans had limited access to care. During the time before government-mandated healthcare, groups such as "poor unwed pregnant adolescents, children in low-income families, the homeless, minority groups, residents of rural areas, and refugees" were cited as

having the most difficulty in acquiring access to healthcare (Millman, 1993, para. 1). Furthermore, those with debilitating diseases, preexisting conditions, and middle-income workers foregoing services to save money were also directly affected (Millman, 1993). As promised, the ACA has negated many of the barriers established by insurance companies, states have the autonomy to expand Medicaid coverage, and certain uninsured groups of the population can be incentivized into acquiring coverage (Miller & Wherry, 2017). Statistics from 2016 showed that insurance coverage increased by 11.8% for those states opting to expand Medicaid and by 8.3% for all others (Courtemanche et al., 2018). Other studies found encouraging statistics for the vulnerable subpopulation of poor candidates that were previously ineligible for Medicaid; however, these findings annotated that within this targeted group, racial/ethnic subgroups were still outside the scope of coverage (Lee & Porell, 2018).

Affordability of Care

Another contributing factor to the enactment of the ACA was the reality that many Americans were either uninsured or underinsured and were forced to pay the exorbitant costs associated with healthcare services. Insurance companies dictated coverage and costs based on discriminatory factors such as gender and preexisting conditions. Without intervention from the government, the growing costs associated with healthcare premiums, deductibles, and out-of-pocket expenses were slated to continue and further ostracize citizens. Two years before the ACA, studies yielded results showing average annual insurance premiums being 22% more than median household incomes for non-seniors (Chokshi, 2014). Moreover, the increase in premiums did not reflect an increase in benefits; the changes reflected the value of benefits to decrease while deductibles doubled (Chokshi, 2014). Since the Act's inception, American's are still struggling with the costs associated with healthcare. A study conducted in 2019 found that 40%

of citizens are in debt due to medical expenses, and many cite this debt as the contributing factor of their bankruptcy (Nova, 2019).

Quality of Care

While medical professionals provide care based on intrinsic factors, organizations provide care from a business offering a service to its customers. The quality of the services being provided dictates customer satisfaction and loyalty, in addition to contributing to long-term revenue and profitability. For example, hospital-acquired infections are anticipated occurrences during a patient's recovery and contribute to a deferred discharge date and increased cost of care. Although this occurrence provides short-term revenue, patients will seek medical care elsewhere. Moreover, Medicare policies associated with the ACA incentivized healthcare organizations to prevent eight common hospital-acquired infections (Sankaran et al., 2020). Reduced quality is also being experienced with the introduction of EHRs. As depicted and discussed in the researcher's conceptual framework, common experiences show a decrease in patient-physician rapport, increased documentation, and technological inconsistencies. Organizations continue to contend with this negative trend as analyses show the United States' healthcare system ranked last compared to 10 other high-income countries (Australia, Canada, France, Germany, the Netherlands, New Zealand, Norway, Sweden, Switzerland, and the United Kingdom) and ranks highest in avoidable mortality due to a lack of timely, quality care (Tikkanen & Abrams, 2020).

Decentralized EHRs

Increased technology has fostered a more pronounced presence of EHRs in the healthcare setting. Their functionality helps to streamline operations by allowing authorized personnel real-time access to patient information to include but is not limited to medical history, diagnoses, current treatment plans, and test results. With the constant evolution of technology and more

private providers of EHRs entering the technological marketplace, the integration of electronic data into a single source is becoming inhibited. Stakeholders are seeing increased decentralization among hospital information systems, pharmaceutical medication plans, and physicians' patient administration systems; moreover, patients are opting out of the electronic conversion of their medical data due to security concerns (Beinke et al., 2019). Another negative trend being experienced is information blocking, where "providers or vendors knowingly and unreasonably interfere with the exchange or use of electronic health information in ways that harm policy goals" (Adler-Milstein & Pfeifer, 2017, p. 119). Many users of EHRs are demanding a resolution to the increasing problem of decentralization.

Concepts

Several non-profit organizations are being developed to enhance the interoperability of health information technology, but not all HIS/EHR organizations are participating. While Cerner, EPIC, McKesson, and Surescripts comprise the vendor list of the Argonaut Project, Allscripts, Athenahealth, Cerner, Evident, Greenway Health, McKesson, and Sunquest are participants of a different non-profit group called CommonWell Health Alliance ("10 Things to Know," 2015). These and many others are trying to bring HIS/EHR together to increase their benefits towards patient health, but there are other hindrances contributing to the delay in organizations fully adopting and implementing their services. The researcher will discuss how decentralized EHRs, reduced quality of care, implementation strategies, policies and procedures, and the different generations working together may contribute to these hindrances.

Decentralized EHRs

Significant literature previously presented in the study has attested to the great hindrance in the topic of technology. The lack of interoperability of the different platforms used by each

HIS/EHR company within the healthcare market has hindered the ability for this concept to be adopted, implemented, and continuously used in medical facilities. Interoperability should allow different entities to share "information consistently in a way that the recipient can meaningfully interpret communicated information" (Katehakis & Kouroubali, 2019, p. 53). As technology rapidly changes and more innovative methods are introduced to the market, companies must regularly assess whether this goal is being achieved. Through the use of a maturity model, health organizations can gauge the system's interoperability based on three determinants: conceptual (the meaning of exchanged data is accurately conveyed), technical (issues linking systems and services), and organizational (responsibility and authority are explicitly defined; Guédria et al., 2012).

Reduced Quality of Care

A viable concern for many seeking to erect a HIS/EHR system is the willingness of patients in the area to participate and entrust their sensitive medical data to unknown entities. Security and privacy concerns have been a topic of great debate throughout this research, but it still stands as a major hindrance to the seamless adoption of any eHealth solutions. Studies have shown that patient participation in eHealth applications has improved quality and access to care while simultaneously decreasing costs (Widberg et al., 2020). Moreover, a patient's effectiveness of care increases with their participation efforts (Widberg et al., 2020). While there are many considerable reasons for opting-in for the services, patients have cited that their lack of control, time, personal beliefs, and insufficient training were deterrents of utilizing the system (Grünloh et al., 2018). These are considerable milestones to overcome, but organizations can also consider the Technology Acceptance Model (TAM), which shows why users behave certain ways towards new technology and their willingness to accept it (Biucky et al., 2017). This model also depicts

various risks such as financial, functional, social, time, psychological, and privacy (Biucky et al., 2017). Using this tool, businesses can garner an understanding of the motivations of users and adjust their marketing campaigns to cater to the different types of patients/users.

Policies and Procedures

The premise behind HIS/EHR technology is to reduce documentation and redundant testing through information sharing; however, many are noting that these benefits are not being experienced. As patients transfer their EHRs to a new facility, many providers find that they must copy information from one organization's EHR and paste it into their company's EHR. While this function provides efficiency in transferring the compatibility of the records, not reviewing the material being transferred could lead to the patient having "inconsistent, inaccurate, and/or outdated" materials within their care plans (Weis & Levy, 2014, p. 635). Furthermore, it is this very function that allows physicians to copy and paste entries concerning routine patient visits, which is leading to billing fraud and abuse in addition to reducing the "efficiency and cost effectiveness of the health care system" (Gruessner, 2015, para. 3). For instance, a physician will make an entry in a patient's EHR regarding their consultation and annotate the need for further testing. Without careful consideration, many organizations are noticing these same charting notes are being copied and pasted into other patients' EHRs, causing them to be erroneously tested. While advocates of HIS/EHR technology are proponents of proper copy and paste techniques (i.e., a person's medical history being transposed), they are not condoning the negligence of improper documentation). All experts studying the phenomenon have suggested that ample training on the importance of appropriate copy and paste techniques, review of records during internal audits, and the best practices plan to make copy and paste material distinguishable were starting points towards alleviating this bad practice.

Implementation Strategies

The researcher has identified how the HITECH Act serves as a catalyst for many health organizations in generating an eHealth presence within their operating systems, but this funding is provisional. Many facilities are faced with financial challenges when addressing the long-term use of HIS/EHR. Studies concluded that more than 80% of medical facilities were concerned about funding during the developmental stages of HIS/EHR; meanwhile, nearly 60% of respondents had funding concerns during a HIS/EHR's operational phase (Adler-Milstein et al., 2013). To counter many of these worries and the inconsistencies in exchange, the State Health Information Exchange Cooperative Agreement Program was introduced to award each state a small stipend to stimulate HIS/EHR development. At a minimum, resources are to: create and implement privacy and security obligations, develop an integrated system between Medicaid and state public health programs, monitor and track meaningful use data, close gaps in HIS/EHR capabilities, and/or ensure compliance to national standards ("State Health Information Exchange," n.d.). Although these funding sources have provided notable advancements towards a nationally accessible HIS/EHR, they are fleeting and leave continued gaps in the assurance that this system will prosper in the future.

Culture

Annotated earlier in section one: the foundation of the study, there are two predominant generations found within the current workforce culture: Generation X and Generation Y. Each of these groups were exposed to different cultural phenomena shaping their intrinsic characteristics and ability to problem-solve and adapt to change. One will elaborate further on each group and how they can impact daily operations based on their fundamental teachings. Furthermore, the

discussion will explore how these groups working together can enhance positive change strategies for future endeavors, specifically with HIS/EHR.

Generation X. The members categorized within this generation have birth years ranging from 1964 to 1980 (Burton et al., 2019). While this group of individuals did not grow up during the technological boom associated with mobile phones and the internet, there were other societal factors shaping the essence of their psyche. Members of this generation experienced "limited economic prospects, fall of institutions, political scandals, divorce, AIDS, and computers" (Mohr et al., 2011, p. 199). These factors contribute to their drive towards securing financial stability for their family and an increased desire to have an enriching home (Usmani et al., 2019).

Furthermore, their preference towards the family leads them to value their leisure time and view changing jobs as commonplace and advantageous (Prawitasari, 2018). This generation tends to be independent and self-directed due to their parents being at work while they were home alone throughout the afternoon after school (Mohr et al., 2011). This self-governing characteristic causes Generation X members to resist top-down management, disdain group learning sessions, and be resilient problem-solvers (Wiedmer, 2015). Moreover, studies have indicated that those belonging to Generation X are extrinsically motivated by social rewards (Mahmoud et al., 2020). Their use of technology is based on a practical sense wherein they value the utilitarian perspective of the tool (Calvo-Porral & Pesqueira-Sanchez, 2020).

Reflecting on the characteristics that many belonging to Generation X possess, the adoption and utilization of HIS/EHR can be hindered. While they desire to use the tool for its functionality, their resistance to change and instruction can present organizations with challenges throughout their implementation strategies. Given their blasé attitude towards company loyalty, organizations can experience a loss should one of these individuals choose to leave after

receiving valuable training on the new technology. With this unfavorable option looming, training departments must make every effort to cater their training programs towards appeasing the intrinsic characteristics of this group. Many studies have deduced that the following can help to ensure effective training is imparted and that this group's attention is maintained: learning outcomes must be explicitly conveyed before training, education needs to be combined with entertainment, these individuals prefer autonomy over their learning (when and how they receive the material), and training information should be presented in a highly scannable fashion (Caudron, 1998).

Generation Y. Following the Generation X era are those belonging to Generation Y or sometimes referred to as Millennials. These individuals grew up during times of "economic globalization, terrorism, 9/11, multiculturalism, and the technology boom" (Mohr et al., 2011, p. 199). With significant influence and attention from their parents, the Generation Y populous needs constant supervision abhors being mistreated by an employer and has contempt for work that is considered meaningless (Trapero et al., 2017). This generation has a reputation for lacking respect of authority and initiative but provided an organization understands their motivations. The generation is also known for their cleverness, ability to work in a team, responsiveness to gathering and disseminating information, respect for diversity and multiculturalism, and ease of operating advanced technology (Trapero et al., 2017). Their astuteness to the operation of new and existing technology allows them to easily "integrate technology into their daily routines" (Calvo-Porral & Pesqueira-Sanchez, 2020, p. 2757). Research suggests that one of the more defining characteristics of this generation is their intrinsic motivations for work. Studies have concluded that those belonging to this era desire to enjoy the work they do and want their work to make a positive contribution to the organization (Aruna & Anitha, 2015).

Although this generation has the potential to seamlessly adapt and utilize innovative technology, they can also contribute to the delay in the implementation of HIS/EHR. Their love for technology and readily available information makes their longingness for the technology prominent. Additionally, their willingness to participate in team-oriented sessions makes training more efficient; however, their need for constant supervision reinforces hesitations in the system's longstanding success. Moreover, this group is just as apt to leave a company as their Generation X predecessors. Trapero et al. (2017) cited that salary motivates these individuals and is used as feedback to measure performance standards. Should this generation feel that their contribution is serving the organization singularly, they will look elsewhere for more personally meaningful and advancing opportunities (Trapero et al., 2017). Organizations must make an effort to create an environment that will retain these temperamental employees. By providing challenging, meaningful work, constant feedback and praise, and having a receptive ear for their ideas, Generation Y employees are said to have a higher chance of remaining with a company (Aruna & Anitha, 2015). The advice continues to identify that active communication, training, and development plans that cater specifically to each person’s skill set, a culture of fun, and personalized physical workspaces are additional elements that can be used to retain these vital employees (Aruna & Anitha, 2015).

Working Together. Readers can understand that each generation has been cultivated by the events of its respective era, and their viewpoints and expectations are vastly different. The level of contention between the mindsets of these two groups creates many challenges for employers; therefore, extensive research has been conducted to aid in creating strategies towards bridging the gap between the generations. Some researchers believe the only reason a gap exists is because a perceived expectation is created wherein one generation believes it has a better way

of doing or being something (Williams et al., 2017). Others attest that the classification of people according to a specific generation instills stereotyping and generation-based discrimination (Clark, 2017).

Managers are tasked with aligning the perceived expectations of multiple generations to achieve a harmonious workflow; however, this comes with understanding the strengths and weaknesses presented by each generation. Typically, there are three distinct challenges managers face when blending Generation X and Y, but Clark (2017) offers encouraging solutions to overcome them: (a) *increased productivity* can be achieved by divvy up tasks based on each generation's preference (i.e., Generation Y would prefer opportunities to lead teams and attend personal growth workshops while Generation X would prefer opportunities to work independently); (b) *mentoring* can be a beneficial tool to increase employee retention, but it must encompass a mutual understanding of "trust, teaching, coaching, counseling, and friendship;" and (c) "*ACORN* (accommodate, create, operate, respect, nourish) *precepts*" can help cultivate an environment focused on accomplishing organizational goals instead of conflict (p. 390). Managers that use these tactics can facilitate working relationships among all members, thereby increasing acceptance, productivity, and morale. Overall, the key to overcoming generational differences and stereotypes while also inciting productivity and tolerance of new technology, policies, or procedures is to build relationships and encourage open communication (Kelly et al., 2016).

Theories

The use of theories during the analysis of qualitative research provides organization an explanation of the many ideas being collected (Collins & Stockton, 2018). As the previous section outlined, the researcher expected this study to be influenced by four separate yet relatable

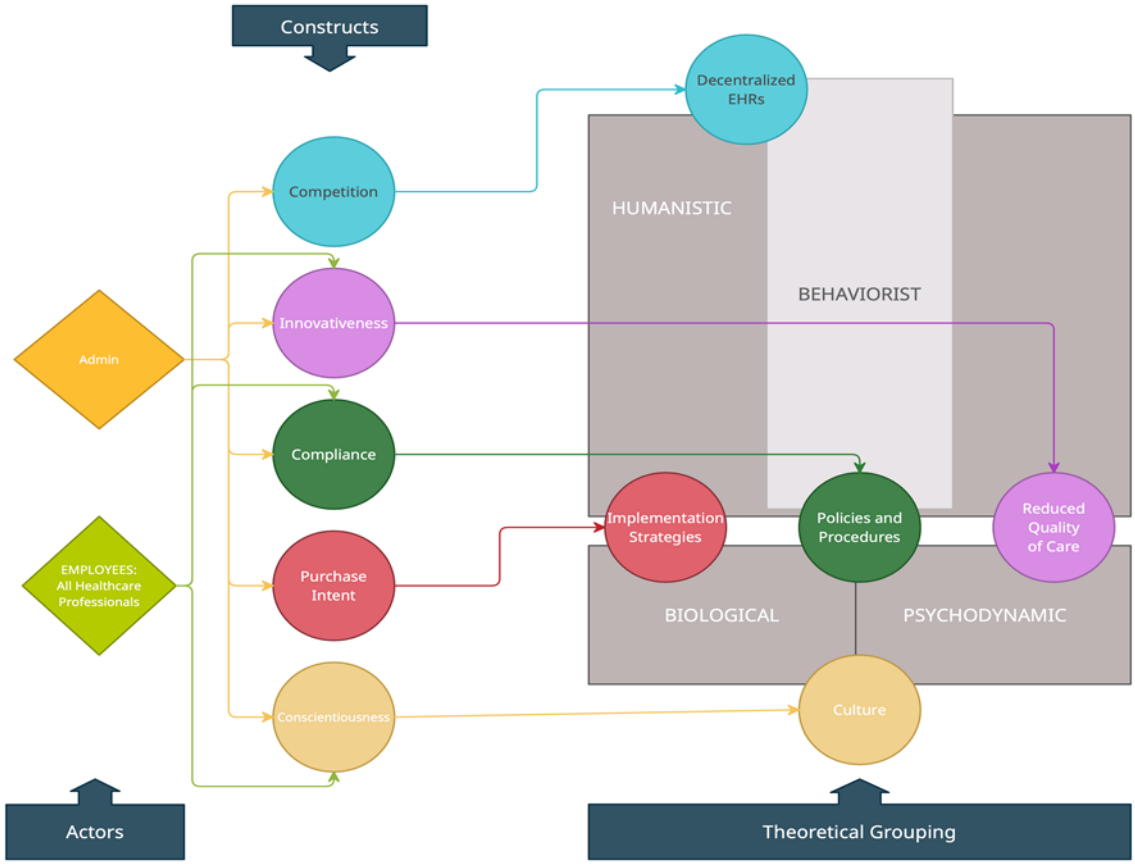
theories: behaviorist, psychodynamic, humanistic, and biological. With this conception, actors are defined as administrators and employees (e.g., physicians, nurses, and all other medical professionals). The observations from administrators were relative to each construct, whereas employees were limited to innovativeness, compliance, and conscientiousness. The reasoning for this stems from the competition and purchase intent constructs resonating more with organizational and administrative decision-making.

Each construct correlates with a specific concept; however, the researcher predicted that they were guided by particular theories. The success of the concept policies and procedures depended on the actors' compliance, and because there is an immediate intrinsic dependence on each actor, this concept served as the heart of each theory. Stemming from this concept, decentralized EHRs were directly linked to the behaviorist and humanistic theory due to the perceived observation of competitive behaviors. The humanistic theory also included implementation strategies and reduced quality of care based on Maslow's Hierarchy of Needs theory. The researcher believed that as the actors evaluated and made decisions based on their hierarchy of needs, the success of these concepts was affected. The biological theory was linked to humanistic through implementation strategies because of the idea that behaviors were adaptive and evolutionary. Additionally, this theory was directly linked to psychodynamic through the concept of culture. Each of these theories sought to monitor and evaluate the known and unbeknownst behaviors of each actor. Finally, the researcher believed the psychodynamic theory was linked to the humanistic theory through the reduced quality of care. The quality of care between these theories was based on the relationship and rapport between physicians and patients deteriorating due to the inclusion of technology. While the notion that medical companies are exercising their hierarchical needs is based on the humanistic theory, it was

conceivable that this fragile relationship was also affected by the psychodynamic theory. Because of the complex and overlapping nature of this section, the researcher has developed a diagram to offer a visual flow of how each facet pieces together within the conceptual framework (Reference Figure 2).

Figure 2

Relationship Between Concepts, Theories, Actors, and Constructs



Created by Lydia Peregoy

Constructs

Qualitative research requires researchers to amass information that has the proclivity of being abstract or characterized as difficult to measure (Pandey & Chawla, 2016). The previous section broke down the relationship between the elements of the conceptual framework, and the objective of this section is to inform readers of the measures that were employed throughout this

research to gauge and understand these latent observations. As readers are aware, the triangulation process requires the researcher to have a comparative basis for all information being amassed. Throughout the collection process, it was understood that the qualitative-based online survey questionnaires were dispersed for actors to have completed before conducting the qualitative-based interviews. These two compilation methods were crucial in proving the validity of the data being gathered.

Competition

Beginning with competition, the administrative actors provided qualitative feedback concerning their experiences with the incompatibility of software-generated by HIS/EHR vendor competition. Qualitative questions determined the type and length of use of the organization's current system, whether it met their expectations, its reliability, its most valuable functions, and if the cost matched the value. Moreover, the researcher questioned the organization on any previously used systems and what functions they would like to see in future systems. As the researcher analyzed the information relative to this construct, the improvements to the quality of care delivered by health professionals and the quality of care received by patients were gauged accordingly. Additionally, these results allowed the level of decentralization to be analyzed.

Innovativeness

The innovativeness construct is one where all actors contributed valuable information towards the study. The researcher not only assessed management's willingness to exercise innovative behaviors but also the employees. Research denotes several types of innovativeness measurement scales, but the following focuses on depicting a respondent's tendency to purchase new items: Raju's 1980 scale, Baumgartner and Steenkamp's EAP scale, Goldsmith and Hofacker's scale, Roehrickh's 1995 scale, and Le Louarn's scale (Roehrich, 2004). While each

offer results explaining an intrinsic level of innovative tendencies, the researcher believed that Le Louarn's scale offered more legitimacy to the study because it assessed a respondent's "attraction to newness, autonomy in innovative decision, and ability to take risks in trying newness as dimensions of predisposition to innovate" (Kaushik & Rahman, 2016, p. 802). With this understanding, the researcher converted these questions into a qualitative format to be used for the questionnaires and interviews. The researcher also used this information to glean if the inclusion or exclusion of HIS/EHR technology affected the rapport between patients and physicians. While the latter use provided inconclusive results, the researcher was able to effectively gauge an organization's commitment to innovation.

Conscientiousness

Earlier literature defined and explained the subconscious level where conscientiousness resides within humans. Considering the labyrinth web to assess this trait, the researcher depended on questions from the big five personality test. While this assessment tests for multiple facets of the human personality, the researcher selected only those relating to conscientiousness. Additionally, the researcher followed a study completed by van Iddekinge et al. (2005), where the verb tense of these selected quantitative questions was changed in order to satisfy the need for a qualitative assessment "(i.e., 'What *did* you do?' vs. 'What *would* you do?')" (p. 541). By understanding the indirect observations of each generation, the analysis allowed for comprehension of delayed implementation, continued decentralization, and reduced quality of care.

Purchase Intent

Purchase intent is the other construct that was directed solely at the administrative actors within this study. Specifically, the costs associated with the development, implementation, and

sustainment of new technologies within a health facility in addition to the governances imposed upon non-profit organizations were evaluated and considered during the assessment process. This construct showed the path of purchase and spending for the selected health organizations and explained why others opted to allocate their resources elsewhere. The researcher evaluated these facets with the use of standard, qualitative-based purchase intent questions throughout the interviews.

Compliance

Compliance was the final construct to be investigated, and its assessment determined if facilities have undermined the abilities of their health professionals to provide quality service to patients with the implementation of a new system and identified ways of streamlining processes to avoid these infractions. While the actors served as equal parts to the whole system of a healthcare facility, they each performed different functions of the operation. At times, the expectations of any actor could restrict the abilities and skills of another, thereby limiting the outcome received by patients. This assessment provided a perspective from each group of actors about the expectations of themselves and others within the system. Allowing the actor being interviewed to freely discuss their expectations versus the constraints imposed by those above them allowed the researcher to explain the reasons for many careless mistakes being made presently: increased documentation, shortcuts, elevated cyber-attacks, and other ways.

Related Studies

The use of HIS/EHR technology is vitally important to resolve some, if not all, of the previously discussed issues currently plaguing the healthcare industry; however, there are other areas that could benefit. A thorough examination of related studies shows that researchers are currently exploring other beneficial purposes for this technology. The following related studies

will show how others are evaluating this technology and ways that it can transcend into the future to be useful for many years to come.

Elimination of Unnecessary of Duplicated Tests

One of the benefits that can stem from the introduction of functional HIS/EHR is reducing unnecessary and duplicated testing. With the growing costs of healthcare spending, analysts have determined that $700 billion per year accounts for unnecessary tests and treatments (Ayabakan et al., 2017). Hospitals and medical organizations are taking action to thwart spending in nonessential areas by adding electronic sharing technologies. Recent reports across the United States annotate that the use of HIS/EHR technology has reduced duplicated diagnostic imaging by 64%; specifically, repeated CT scans, ultrasounds, and chest X-rays are all reduced by 8.7, 9.1, and 13%, respectively (Lyu et al., 2017; Sadoughi et al., 2018). Another study concluded that the rate in redundant testing was only achieved by interconnecting the record systems, which would alert physicians of similar tests associated with the patient's records; however, this process requires considerable cost and effort (Kerwin et al., 2016).

Opioid Abuse

Opioid abuse has been an increasing epidemic since the 1990s. As pharmaceutical companies began developing and promoting the use of prescription opioids during that time, addictive qualities and dependencies to the drugs have been annotated, and the battle to combat misuse has turned into an ongoing issue. As of 2018, statistics indicated that 47,000 deaths occurred due to an overdose of any one of the following opioids: prescription opioids, heroin, and illicitly manufactured fentanyl (synthetic opioid; Chandler et al., 2020). Further statistics show that (a) between 21 and 29% of patients misuse their prescription of the drug, (b) opioid use disorder classifies between eight and 12% of users, (c) between four and six percent of

misusers transition to heroin, and (d) 80% of heroin users first abused prescription opioids ("National Institute on Drug Abuse," n.d.). The Department of Health and Human Services (HHS) and the National Institutes of Health (NIH) are working to develop responses to the current crisis by improving services for treatment and recovery, advocating the use of overdose-reversing drugs, optimizing public health surveillance, allocating resources towards the research and development of pain and addiction, and promoting better habits in pain management ("National Institute on Drug Abuse," n.d.).

Because of the negative effects for both providers and patients, local legislature and health organizations are teaming together to help assuage opioid abuse. Both Florida and Connecticut are instituting a statewide prescription drug monitoring program (PDMP) used to track patients who are issued controlled substance prescriptions (Monica, 2018). Monica (2018) continued that this monitoring system works in conjunction with local law requiring physicians to consult with the PDMP system before writing prescriptions. This program would benefit significantly from the tools found within HIS/EHR technology and help curtail the considerable abuse of controlled substances.

Familial Arguments and Compliance of Advance Directives

During a patient's critical time of care, consciousness may not be an option, which causes medical personnel to either lean on the discretion of family members or search for stored documentation for guidance in care. At times, differences in opinion can lead to familial arguments over the best interests of a patient; however, this controversy can be alleviated through the use of advance directives. HIS/EHR technology can provide the platform for securing and storing the wishes of an unconscious patient. With these technologies, patients have the autonomy to permit certain family, friends, and physicians access to their medical

information, but block others from knowing specific aspects of their care and treatment plans (Esmaeilzadeh & Sambasivan, 2017). Advance directives stand as a legally binding living will of a patient's end-of-life preferences and desires towards treatments and care during times of incapacity (Lehmann et al., 2019). The Federal Patient Self Determination Act of 1991 mandated that medical organizations receiving federal funding inform patients of their right to draft and enact an advance directive (Phillip et al., 2019). While this provides notable aid towards the quality of care, many patients opted out of this service due to reduced physician endorsement (Phillip et al., 2019). Phillip et al. (2019) continued that patients and physicians who participated in a collaborative exchange when drafting an advance directive experienced an increased level of satisfaction about care expectations, and more advance directives were noted to have been completed. Research suggests that surrogates, those with speaking power for a patient, make decisions at 68% accuracy and cite emotional closeness, stress, and religious beliefs as reasons for deviating (Tejwani et al., 2013). With 92% of patients having knowledge of advance directives and the need for discussing end-of-life care, but only 36% fully completing one, increased advocation and assistance towards completing this paperwork would ensure that futile arguments could be eliminated (Tabar, 2019; Yadav et al., 2017). Improvements in this aspect take dedication from all physicians to ensure this information is present and complete in HIS/EHR database. Furthermore, should a patient arrive at a medical facility unconscious, this storage technology can make patients' preferences available to anyone throughout the country. While this problem is a small one in comparison to the greater picture, the utilization of these technologies can genuinely impact the quality of care received by patients and help family members during critical and stressful times of a person's care.

Future Platforms

The future of HIS/EHR is very volatile considering the numerous challenges being presented to eHealth companies and healthcare facilities. While successive constructs depict systems that appear similar to the structures in place currently, forward-thinking initiatives are looking to enhance the interoperability of HIS/EHR and advocate for standardization of records to facilitate integrations (Venkatesiah, 2018). Organizations are taking proactive steps towards these strategies by participating in non-profit organizations, such as the CommonWell Health Alliance, and regulating the information being annotated in patient charts. All future endeavors are designed to improve the quality of care, safety, and overall experiences between physicians and patients.

Implications for Future Research

The literature has presented a concept that is innovative and promotes promising results for all members participating in the healthcare system. HIS/EHR are present in the marketplace and are reaching an adolescent phase of their product lifecycle; therefore, their usefulness for future endeavors leaves many desiring a more unwavering design. The evaluation of the literature presented in this study shows there is room for improvement. By partnering with existing technology and incorporating innovative methods such as facial recognition, retinal scanners, fingerprint scanners, and rapid DNA testing, future research could expand the parameters of this system's current capabilities so that it may better serve patients. For instance, imagine a scenario where a person becomes incapacitated for any reason, outside their local area of care, and cannot communicate with emergency and medical personnel. What better way to aid in the efficient and accurate treatment of this individual than through developing the following personally identifying technologies? Granted, participants would have to opt into using one, if

not all, of the different types of personally identifying technologies, but it would better equip medical professionals in their quest to query an unknown patient, acquire accurate information, and administer efficient, timely, and quality care.

Biometric Technology

Biometric technology distinguishes who a person is compared to what they have or know (Zuo et al., 2019). Moreover, its data "cannot be lost or forgotten, are difficult to forge, and have no acquisition costs for users" (Zuo et al., 2019, p. 1299). The science behind facial recognition technology has been used for many years and continues to develop into more sophisticated and attainable. Facial analytics has typically been associated with law enforcement, government, and private technology companies, but its presence has dominated mainstream culture resulting in almost every person being monitored daily (Stark et al., 2020). Zuo et al. (2019) also identified that this technology is prevalent in the Apple iPhone X, social media, security and surveillance, marketing and advertising, and certain medical testing software.

Similarly, retinal scanners also contribute to the secured authentication of a person's identity. This technology uses infrared lights to detect the pattern of a person's blood vessels on their retina, which is said to be as distinctive as one's fingerprint (Opto, 2017). Although this technology appears more often, it is still seemingly expensive. For a basic system, buyers can expect to pay $480 for the device, but its reliability for highly secured facilities makes the expense feasible (Abdulhamid & Muthomi, 2019). Employees annotate that the enrollment process takes considerable time and feel that the infrared light is intrusive and potentially hazardous to their sight; however, studies suggest that eye safety is of top priority, and all scanners must comply with its respective optical designs (Das, 2019; Schnabel & Behringer, 2016).

Thirdly, fingerprint scanning is one of the more commonly used biometric systems and has acquired a more prevalent presence in society compared to the other types of biometrics. The longevity of this technology holds constant as it comprises 48.8% of biometric market sales in the United States (Utzhanova, 2016). Its continued accuracy and familiarity allow the majority of patients to feel secure and comfortable when choosing to utilize its services (Blanco-Gonzalo et al., 2018). Moreover, as this technology becomes integrated into the workplace, many will notice positive changes contributing to the savings of resources. For the medical industry, the use of fingerprint identification brings significant benefits for both patients and their providers. To list a few, patients can expect a decrease in redundancy and increased accuracy and timeliness of care while providers can have confidence in the data presented about each patient.

Rapid DNA Testing

Rapid DNA testing is another way to personally identify someone in today's society. This method is different from biometrics because it works directly with a person's DNA, obtained through a cheek swab. This technology has solely been used within Federal Bureau Investigation (FBI) pursuits, but federal and local criminal justice systems have petitioned to use this beneficial technology (Jackman, 2018). To accommodate the better handling and unsolved criminal cases, the president signed the Rapid DNA Act of 2017, which amended several aspects of its preceding law known as the DNA Identification Act of 1994 (Greger, 2018). The changes allow the FBI discretion in determining the standards for criminal justice agencies, and the setting for testing was amended from a laboratory environment to the field (Greger, 2018). This relatively new concept is still within the developmental stages of use, but it could be a vital instrument in properly identifying patients.

Anticipated and Discovered Themes

The extensive review of literature presented an overall perception by both medical professionals and patients that the need for HIS/EHR technology is necessary. As this perception can be deemed potential at this stage of the research process, the literature has annotated frequent demands from society for something that meets the needs of the government, medical facilities, physicians, and most importantly, patients. There is also a perceived notion that HIS/EHR lacks the ability to store patient information securely and privately. While the literature presents contending viewpoints to support both arguments, further analysis can be used to verify the validity of either rationale. Finally, there is a perception that the continued sustainability of any operable HIS/EHR is vulnerable. Provided research continues to optimize and integrate new technologies. This system should continue to prosper.

The main theme associated with this literature suggests that HIS/EHR will provide innovative ways of increasing the quality, accuracy, and continuity of care while reducing relative costs. Another potential theme that can be deduced is the exponential increase in the level of control given to patients. By opting in, patients can verify and ensure the accuracy of their information and control where the information is transferred. The inferred rewards from this autonomy instill confidence and trust in treatments and outcomes, thereby strengthening the relationship between physicians and patients.

Throughout the analysis of the collected data, the researcher identified several themes that were not anticipated. The researcher discovered responses to reflect feelings of ambition, assurance, satisfaction, and discontent. Although these are the main themes, due to their expansive nature, the researcher reduced each generalized theme into several subsets. Ambition is comprised of anticipation, creativity, improvement, open-mindedness, technology, and

transition. Constituting the theme of assurance are feelings of confidence, being methodical, and resilience, while the theme of satisfaction shows compliance, cost effectiveness, efficiency, and trust. Finally, a more negative tone of discontent explained the feelings of being burdened, disdained, hesitant, and tolerant. The researcher also believed the theme of wisdom was missing from the collected data. Analysis of the responses showed that some participants might have experience and knowledge of operations before the inception of HIS/EHR technology that could have been beneficial to this study. Significantly more information will be provided on the interpretation of these themes in later portions of this study.

Summary

The comprehensive research presented in this literature review shows the complexities of the healthcare system and the labyrinth of factors that must be considered when attempting to appease and enhance the experience of consumers. The federal government and medical organizations have identified that decentralized EHRs and the access, affordability, and quality of care as major areas of concern and are partnering together to alleviate many of the deficiencies stemming from these issues. The foremost solution has been to incorporate the benefits of an electronic storage system; however, delayed adoption and unsustainable processes have left many questioning the intent and value of utilizing HIS/EHR.

The researcher presented an in-depth analysis of the evolution of both EHRs and the HIS in addition to their association with the aforementioned healthcare issues. Readers gleaned an explicit understanding of the various business models HIS/EHR can follow and the different ways in which data can be exchanged. The analysis then elaborates on how security, privacy, financial considerations, and predefined strategic goals have been deemed as characteristics of a functional HIS/EHR. Following this differentiation, the researcher discusses the operations,

structure, and future endeavors of five of the most powerful and widely used HIS/EHR in the current market. The literature then presents the reasoning for the development of HIS/EHR and how it has contributed to the four leading concerns in the healthcare market. Following this, the concepts, theories, and constructs being studied are defined and discussed. Moreover, an investigation of related studies is presented to identify other ways that this system could potentially benefit supplemental aspects of the medical field.

In the final section, the literature review focuses on the future of HIS/EHR. Many HIS/EHR organizations are already taking a proactive stance by creating coalitions to increase interoperability. Likewise, the researcher presents sustainable concepts that can help increase security, privacy, and accuracy of identification and information while also improving the timeliness of care. Finally, the researcher presents several potential perceptions and themes that can be derived from the examined literature in addition to the discovered and unanticipated themes present in the collected data. Overall, the introduction of the concept of HIS/EHR has provided considerable benefits for the healthcare community, but the need for further research and exploration of correlated technology could alleviate delays in adoption and implementation efforts and solidify its place in future operations.

Transition and Summary of Section 1

This section of the study has provided many elements to the structure of the research. The background of the problem provided substantial information to illustrate the progression that the healthcare industry has made throughout history towards the system's current functionality. By having this in-depth understanding, the researcher provided readers with the problem and purpose statement of this desired research proposal. The researcher indicated that the research would bear a qualitative nature grounded in a flexible, multiple case study research design.

Moreover, the researcher discussed the research questions that were used to guide qualitative interviews and their significance to this study and problem. To ensure organization, the conceptual framework was discussed to indicate the concepts, theories, actors, and variables likely to be encountered throughout the research. To alleviate ambiguity, the researcher elaborated on several key terms deemed important and considered numerous assumptions, limitations, and delimitations to this specific topic of interest. The discussion also explored the significance of this study to include the reduction of gaps within the existing literature, the Christian connotation being imparted on potential outcomes, and its relationship to the researcher's field of study. Finally, the researcher has provided a comprehensive literature review to explain how HIS/EHR has evolved into the system that is currently being utilized and how it can be applicable for future use and research. The continued progression of this material seeks to analytically explore the research of the unsuccessful adoption and implementation of a functional HIS/EHR, its application to professional practices, and implications for change.

Section 2: The Project

While the first section of this study provided the fundamental elements to inform and impress upon readers the importance and significance of this research, this section seeks to provide an organized and detailed listing of how the research was conducted. The information provided throughout this section of the study initially reminds readers of the purpose of this analysis and then progresses to describe the role of the researcher. Readers will revisit the chosen qualitative research methodology, design, and triangulation. From this point, the researcher presents salient material regarding the participants and population that was targeted and a comprehensive understanding of the sampling method, frame, desired sample, and sample size. Furthermore, the researcher provides clarification on the way data were collected and organized throughout the research process. This includes the types of instruments that were employed to collect data. Additionally, the discussion provides guidance on the analysis of data to include emergent ideas, coding themes, interpretations, data representation, and triangulation. Finally, the researcher explains how validity and reliability were achieved with the inclusion of bracketing.

Purpose Statement

The purpose of this qualitative case study was to explore the cause of the delay of HIS/EHR and pinpoint the possible reasons for its lack of success. The problem can be further deduced by exploring the implementation efforts found in selected non-profit healthcare organizations located in northeast Ohio. By focusing on non-profit organizations, the results yielded more conclusive outcomes considering they account for 58% of all hospitals in the United States (Liberatore et al., 2020). Non-profit organizations were designed to cater to all community members regardless of their economic standing; in return, they receive several tax

exempting credits. Although these facilities receive less compensation for the services they provide, they are held to an even higher standard than their for-profit counterparts to continue receiving benefits. Kellner et al. (2016) guided that non-profit funding efforts are awarded to those organizations that continuously improve performance by maintaining accountability and upholding demanding requirements. These statistics hold true for the Northeast Ohio region; specifically, the Cleveland area is known as the "hospital capital of the world" and provides one of the top five healthcare facilities in the country, Cleveland Clinic, along with other strong competitors such as University Hospital, Summa Health, and considerable alternatives in the surrounding areas (Seper, 2011, para. 6; "The Top 10," 2020).

Role of the Researcher

Due to the unprecedented times the COVID virus presents, the researcher proposed two strategies towards accomplishing research. No matter which approach worked best for the guidelines dictated by COVID, the researcher intended to initially establish communications with either the press contact, human resources, or information technology (IT) provider at each of the facilities being studied. Although these contacts did not provide approval or information towards the study, one of the IT specialists indicated that Chief Nursing Officers (CNOs) would likely be a more viable candidate. Using this information, the researcher established communications with the CNOs at two of the major health organizations in the area. The researcher used this preliminary line of communication to establish the purpose and desire for conducting research at their respective facilities. Upon making this introduction, the CNOs were eager to participate and provide information on the subject of this study. To extend the researcher's reach to other medical professionals, one sought the use of social media. This proved to be a beneficial tool in gaining the attention and voluntary participation of medical professionals within the area.

The researcher dispersed the online survey questionnaires and contacted willing actors via phone or email to set up either an in-person appointment or a virtual interview. With the first approach, the researcher sought to provide a traditional and personal experience; however, plans were made for the personal encounter to follow all socially distant restrictions mandated by the state of Ohio. The second option for research was a virtual approach, where the researcher conducted the interview either on the phone or via internet video conferencing. All respondents who opted for an interview chose to utilize the second option of telecommunications. The researcher believed that the openness to various data collection methods aided in the ability to amass more information.

Upon gathering all necessary data, the researcher began the analysis process. Because all data were qualitative in nature, the researcher used a computer-based software program such as NVivo to aid in the organization and examination of data. The company's website boasted of the difference their software made in the richness of the results and added that its user-friendly structure significantly helped when publishing findings ("Fueling Academic Research," n.d.). The researcher believed that a familiar and accomplished program such as this one would build confidence and validity in the results.

Within any study, careful consideration must be given to the elimination of personal bias. The inclusion and application of bracketing significantly aided in this aspect because it aims to make researchers mindful of their influences on data. Butler (2016) guided that a researcher must "refrain from influencing 'the participants understanding of the phenomenon'" and hold true to the purpose of the study, which "is to understand the 'essence or true meaning of a phenomenon'" (p. 2035). Furthermore, Dörfler and Stierand (2020) detailed that bracketing can

be divided into three segments: epoché phenomenological attitude, phenomenological psychological reduction, and the transcendental phenomenological reduction.

Throughout this research, the latter of the three constructs was avoided because its rationale stems from the researcher abandoning the participant to use one's knowledge to understand the phenomenon (Dörfler & Stierand, 2020). As identified earlier in the foundation of the study, the researcher holds no knowledge in the field of healthcare; therefore, this bracketing technique would be counterproductive to the creditability of the results. Being mindful of an epoché phenomenological attitude, the researcher practiced a separation of one's judgment from the study to have a receptive mind to an alternative reality throughout the interview, data collection, and analysis processes. Roberts (2019) specifically defines this practice as "'a preparation for deriving new knowledge but also experience in itself […] allowing things, events and people to enter anew into consciousness, and to look and see them again as if for the first time'" (p. 392). The other connotation required the researcher "to suspend their 'belief in the existence of what presents itself in the lifeworld. Instead, the focus is on the subjective appearances and meanings'" (Dörfler & Stierand, 2020, para. 27). While many scholars argue that these two mindsets are synonymous terms, Butler (2016) explained that the founder of this ideology, Edmund Husserl, insisted it was a direct confrontation between the two thought processes; it allows the respondent to exclusively "make sense of the sensations" (Dörfler & Stierand, 2020, para. 27). Because of its converse nature, this facet of bracketing will also occur throughout the multiple plains of the research process as seen in epoché.

The role of the researcher is an important reminder of the organization and mindset that must be included throughout the research process. This section offered a prelude to how the researcher managed the analysis from establishing communications, dispersing materials,

conducting interviews, and collecting data. Additionally, the researcher identified the purpose and types of bracketing and how one ensured that only nonbiased information was included in the study.

Research Methodology

The nature of the study within the previous section explained the purpose of the research paradigm, design, method, and triangulation and identified several aspects of the research methodology for this particular study. The researcher has ascertained that the study was conducted with a flexible design using qualitative methods, which was validated through triangulation. This section seeks to elaborate more on these topics and provide the appropriateness of each facet.

Discussion of Flexible Design

The choice of using a flexible design stems from the qualitative methods employed for data collection. Qualitative research allowed the researcher to listen to accounts given by respondents and not be confined to a structured means of deducing information. The researcher could better understand the context surrounding a phenomenon and had the autonomy to delve deeper into the intrinsic meanings behind the decisions respondents made. As a reminder, the problem being researched sought to understand why there was a delay in the implementation of HIS/EHR technology and how this was directly causing a decentralization of EHRs, increased costs, and inconsistent, delayed, and reduced quality of care.

The researcher wanted to first understand what policies, procedures, and implementation strategies were being utilized and imposed on healthcare workers. Stemming from this information, the researcher wanted to also understand the opinions and experiences of the affiliated healthcare workers. The use of a flexible design allowed for a better understanding of

the bigger picture relative to each specific healthcare facility being studied. The flexible design also permitted the researcher to acquire supplementary information that potentially explained why a particular facility or group of people had more success compared to others. The information collected should identify if compliance or noncompliance with administrative expectations were based on the decisiveness of employees or if presumed objectives were unreasonable. Moreover, the flexible design allowed the data to explain if the lack of compatibility stemmed from the competition being experienced between technology vendors or if further investigation between the healthcare facilities was warranted. Lastly, the researcher believed the flexible design gave administrators room to elaborate on the governances they must follow and any financial constraints imposed upon them.

The topic of innovation is a complex matter that comprises conducive organizational environments, financial allotments, competitive advantages, and others. By understanding that there is a comprehensive element to this subject, the flexible design helped annotate if the reason for delayed implementation stemmed from an organization's reservations in pursuing risky investments or if there was an aversion to innovative products. Equally as involved was the concept of culture; therefore, the autonomy expected with a flexible design gave the researcher freedom to explore this facet deeply. The researcher hoped to identify if there was a correlation between the work ethic of each respective generation; accordingly, a flexible design allowed each person within the scope of study to explain their rationale. These literary tales allowed respondents to give accounts of their rearing and experiences, which suggested that there were no causal links between their respective generational influences and decision-making processes. As the researcher will explain in detail at a later point in the study, data suggested that the actions of respondents were guided by that person's intrinsic nature.

Discussion of Qualitative Method

A plethora of literature has been presented throughout this study to annotate that a qualitative method was applied to the research process of this analysis. The need to understand the underpinnings of this phenomenon provided justification for the use of qualitative methods. Quantitative studies follow a structure and seek to answer closed-ended questions about "how many" or "how often," but this research needed further information and clarification. Beyond the question of "how," the researcher needed to answer the question of "why," which is supported by the principles of qualitative research. This method of research is known for "'data rich,' trustworthy, and transferrable" findings garnered from the time spent and relationships cultivated between the interviewer and interviewee and sampling adequacy and appropriateness (Hamilton, 2019, p. 201).

As mentioned in the previous section, the researcher developed a quality relationship among many actors at each facility by asking to hear their accounts concerning various topics related to the study. While administrators explained their reasoning for an enacted or imposed structure, frontline workers explained how this had affected their workloads and ability to maintain or improve the quality of care directed towards patients. Not only did the qualitative method foster an alternative perspective to be gleaned on the focused topics, but it allowed for respondents to elaborate on their opinions about these topics in addition to offering suggested changes.

Discussion of Methods for Triangulation

Triangulation is an important part of any study because it is used to validate results. Liao and Hitchcock (2018) described triangulation as the most commonly used credibility technique and explained that it is the "search for converging evidence" (p. 159). The researcher identified

that this convergence occurred through the methodological means, where multiple types of data collection were employed to provide a convergence of information. By first dispersing qualitative-based questionnaires, respondents had ample time to critically think about their answers and methodically conveyed their opinions about each question. Then, these questions were used to guide the interview transcript for the same respondents to unintentionally answer the same questions. Using these two collection methods, one had premeditated answers compared to spontaneous answers, thereby offering the most verifiable answer to each question.

Summary of Research Methodology

Within this section of the research methodology, the researcher has elaborated on the appropriateness of each facet comprising the nature of the study. The use of a flexible design allowed the breadth of the study to be dictated by the available volume of information. The researcher detailed how one acquired as much information as necessary from each respondent to achieve data saturation. Additionally, the information presented a justification for the use of qualitative data collection processes. Qualitative-based questionnaires and interviews sufficed the need to understand the essence of the phenomenon being studied. Finally, the researcher expounded on how the methodological triangulation technique was implemented to validate the results.

Participants

The basis of research for a qualitative study rests in the experiences and contributions of its participants; therefore, thorough vetting and accurate selection are vital. This research sought to question and analyze current implementations strategies, incompatible software platforms, and generational differences as viable reasons for the unsuccessful execution of HIS/EHR. Therefore, the respondents were knowledgeable enough to provide integral characteristics and perspectives

related to the phenomena (Sargeant, 2012). One wished to question numerous representatives of all age groups along the hierarchical structure found within a healthcare system: directors, executives of daily operations, department administrators, patient advocates, and patient providers. As noted previously, these actors could provide intricately overlapped bouts of information and were included because of their direct relationship to the phenomenon being experienced. Of this extensive list of actors, CNOs were the chosen participants able to give reasoning and explanation for the development and implementation of the policies and procedures being imparted on facility staff, in addition to feedback regarding implementation efforts and the successes or challenges that were being experienced. Similarly, the expositions of all other medical professionals contributed information towards all aspects of the phenomenon. As will be discussed in further detail, the researcher was able to solicit participation from these particular medical professionals: Flight Paramedic, Nurse Practitioner, Physician of Pediatric Emergency Medicine, Clinical Nurse, Clinical Team Leader, Nurse, and Medical Assistant.

Population and Sampling

Researchers must ensure that their population of interest can provide the necessary data expected to be acquired; however, they must be careful not to include bias in this process. Before conducting research, many scholars believe that explicitly defining the population seeking to be studied helps to abate these errors in addition to any misunderstandings concerning the "general, target, and accessible populations" (Asiamah et al., 2017, p. 1607). Moreover, Asiamah et al. (2017) explained that this structure gives credibility to the findings. The researcher aims to exercise these concepts by thoroughly discussing the targeted population and sample throughout this section.

Discussion of Population

Although the researcher selected the local area population for analysis based on the geographical convenience of conducting research, the area does present a substantial population size to be examined. Within the Cleveland metro area, five counties (Cuyahoga, Geauga, Lake, Lorain, Medina) are included and hold a total population of 2,048,449, according to the 2019 Census reports (Exner, 2020). Additionally, the two counties (Portage and Summit) comprising the Akron metro area enlarges the focus region by another 703,479 people (Exner, 2020). The characteristics of this population size will be depicted in Table 1 and include facts concerning the median age, population density, birth rate, mortality rate, sex ratio, and population under 65 without insurance.

Table 1

Characteristics of Population

County	Median Age	Population Density[a]	Birth Rate	Mortality Rate[b]	Sex Ratio		Population under 65 without Insurance
					Male	Female	
Cuyahoga	40.4	2800	5.20%	1120.7	48%	52%	7.40%
Geauga	44.8	233.4	5.80%	964.2	49.50%	50.50%	9.00%
Lake	43.8	1011.2	4.40%	1133.6	48.90%	51.10%	7.20%
Lorain	41.8	613.6	5.30%	1057.3	49.20%	50.80%	7.30%
Medina	42.2	409	5.20%	839	49.60%	50.40%	5.10%
Portage	38	331.2	4%	939.3	49.10%	50.90%	7.50%
Summit	41	1312.6	5.40%	1128.3	48.50%	51.50%	7.30%

Note. Data for median age, population density, birth rate, sex ratio, and population under 65 without insurance from "Quick Facts" (2019), and data for mortality rate from "CDC" (2020).

[a]Figures listed in this column are per square mile.

[b]Figures listed in this column are per 100,000.

The median age for each county is relatively similar, but slightly above the 38.1 national average ("Quick Facts," 2019). Moreover, the sex ratio is directly comparable to national totals depicting the averages of males at 49.2% and females at 50.8% ("Quick Facts," 2019). All those without insurance under the age of 65 are predominantly lower in this territory, which suggests more people have ascertained suitable healthcare coverage compared to the national average of 9.5% and are using medical services as intended ("Quick Facts," 2019). "Quick Facts" (2019) has suggested that the population density within this area is more dense than the national average calculated at 87.4%; therefore, the recommendations of this study will likely not be viable

towards rural areas. Lastly, the birth and mortality rates vary the most from national averages. As depicted in Table 1, birth rates are between four and five percent, whereas the national average calculates to 12% ("Quick Facts," 2019). Similarly, Table 1 identifies mortality rates ranging between 839 and 1133.6, which encompasses the national average of 869.7, but the majority in this area are above this national figure ("CDC," 2020).

While the territories selected for this study are excerpts of the nation, their characteristics show a good mixture of demographics representative of national averages. This selected population was most appropriate for this research because the density of the population was greater when compared to other areas of the country. The researcher believed that this would increase the number of patients using HIS/EHR; therefore, there would be more facilities participating in some variant of the technology and would have more experience. Additionally, this assumption was shared with the increased compliance of obtaining healthcare insurance; the more patients with insurance, the more traffic expected at healthcare facilities. Considering the extensive size of the population, the following section seeks to elaborate more on the sample that was specifically studied.

Discussion of Sampling

Sampling Method. The study of sampling methods has provided a differentiation between probability and non-probability sampling. Probability sampling methods are further delineated as systematic, stratified, cluster, multi-stage, and area and are reserved for those research studies based on quantitative research methods (Etikan & Bala, 2017). However, considering the qualitative nature of this research, the researcher had to select from qualitative-based non-probable sampling methods. The study of these methods led the researcher to understand that numerous variations of non-probable sampling methods have been defined, but

the common four seen throughout these lists are quota, judgmental or purposive, self-selection or voluntary, and snowball. Beginning with quota, this sampling method allows researchers to identify groups of respondents with shared characteristics of the population and base their selection upon the population as a whole (Berndt, 2020). Purposive is also referred to as judgmental and grants researchers the autonomy of selecting respondents particularly knowledgeable of the phenomenon being studied (Gill, 2020). Berndt (2020) identified that respondents who recommend themselves for research are classified in the self-selection or voluntary sampling method, which acts as a proponent of cost- and time-saving techniques. Finally, the snowball sampling method can be used when respondents are more difficult to initially access. Researchers may begin their study with a particular respondent who leads them to recruit others (Naderifar et al., 2017). In turn, these new recruits lead to the inclusion of even more, and this cycle continues until data saturation is achieved (Naderifar et al., 2017).

With consideration to the need for this research to group respondents based on their hierarchical stature within the organization yet allow their contributions to overlap in the discussion of the phenomenon being studied, the researcher believed the purposive sampling method was the most viable. The environment being studied was comprised of many individuals performing the same function but at different expertise levels. The use of this sampling method allowed the researcher to identify the most information-rich respondent and ensured that their particular knowledge was included amongst the entire sample. Adversely, this sampling method is known for including researcher bias and has the tendency to be ill-representative of the sample (Gill, 2020). Equipped with this knowledge, the researcher was vigilant in excluding these biases and following the principles discussed within the bracketing section of the study.

Sampling Frame. After determining a method for sampling, the researcher had to determine the sample frame. DiGaetano (2013) defined a sample frame as a file of listings from where a sample can be selected. While this listing can be comprised of many forms of data, the author stresses the importance of examining the material and ensuring that it is comprehensive, of sufficient size, not easily manipulated, and relevant to the time of the study (DiGaetano, 2013). The sampling frame for this study originated from the existing lists generated from the Ohio Hospital Association (OHA) website. This online database allowed the researcher to narrow the population of medical organizations in the state of Ohio down to the area being researched. Furthermore, this list could be filtered to only show non-profit organizations although it includes children's, critical access, for-profit, long/short term acute care, psychiatric, public, rehabilitation, rural, and teaching facilities. Moreover, the list of non-profit organizations could be further reduced to non-religious or by a specific religion.

The researcher believed this sampling frame met the validating criteria listed above because it offered all general and sub-categorial groupings of medical facilities in the entire state. The information denoted at least one medical facility in each county being targeted for this research; therefore, the researcher was able to acquire information from the focus area. The OHA was founded in 1915 and served as the first state-level hospital association by providing a "united voice of Ohio's hospitals" ("About OHA," 2020, para. 1). This organization maintains a current database of information that is not easily manipulated; therefore, their data and statistics are further authenticated.

Desired Sample and Sample Size. As the sample size in qualitative data is not typically predetermined, one has narrowed the research area to the medical organizations located in the Cleveland and Akron metro areas (Sargeant, 2012). Within the Cleveland metro area, the

researcher would be able to study six different prominent medical organizations currently in the market, and the Akron metro area would allow for two other substantial companies to be included. By focusing on these two areas, the researcher would have potential access to study a minimum of 30 nonprofit organizations ("Ohio Hospitals," 2020). The Cleveland metro area was specifically selected for its renowned reputation of being the "hospital capital of the world" ("The Top 10," 2020). Additionally, the Akron area was considered because of its high volume of alternative competitors to those found within the Cleveland area. The researcher believed that the sample should be inclusive of diverse medical facilities and not a singular organizational entity.

The researcher intended to sample between 15 and 30 respondents or, as previously mentioned, until data saturation is achieved. The plethora of facilities being researched within each area allowed the researcher to move to a neighboring facility should one agency refuse to participate in the study. This flexibility reduced any margins of error and increased confidence in the results. Finally, the researcher utilized the information listed on both the OHA and organizational websites for contact information to gain access to the samples projected to be studied. The researcher believed that press contact, human resources, IT agents would allow for a more amicable approach towards the organization participating and taking the purpose of this research seriously.

As with any preparation, not all plans go accordingly. The researcher was able to achieve data saturation and will provide further justification in the findings section of this study. As was anticipated, the need to pass over certain areas and facilities was prevalent within the data collection process, which left the researcher feeling relieved that the sampling of facilities was so abundant. The researcher is confident that diversity exists among the results even though not all

medical organizations in the area were studied. While the OHA and organizational websites provided contact information for the aforementioned targeted administrators, it was through verbal and social networking that the researcher was able to establish working communications with hospital administrators and all other medical professionals and develop the data required for this study.

Summary of Population and Sampling

The information provided throughout this section sought to equip readers to understand the targeted population and sample being examined. The discussion identified many characteristics of the population and suggested it will provide ample information concerning the use of HIS/EHR technology. Due to its considerable size, the researcher annotated that the research would focus on a particular sample. This requires the identification of a sampling method; therefore, the researcher discussed how the purposive sampling method would be most beneficial for the collection of data. Moreover, the use of existing lists generated from the OHA website was identified as the most suitable sampling frame, although it was later determined that verbal and social networking were the more viable methods. The researcher then outlined the sample size that was considered and the most advantageous methods for procuring data. While these suggested ideas were guiding factors for this study, the researcher provided a brief synopsis denoting the actual results of the population and sample.

Data Collection and Organization

One of the most important aspects of any research process is accurately accumulating data pertaining to the study. There are several aspects to consider, such as the overall plan and expectation of how data were collected. Throughout this section, the researcher will annotate and expound on the type of qualitative data that was garnered and the method in which it was

acquired. Furthermore, the researcher explains the different instruments utilized throughout the collection process and how they pertained to the research questions. This section concludes by explaining that the organization of data followed the connotation of the data collection circle advocated by Creswell and Poth (2018).

Data Collection Plan

Due to the qualitative nature of this study, the researcher intends to acquire qualitative-based data. While this can be derived from many different methods, the researcher opted to use the multiple case study method, which advocates the use of countless interviews. These personal accounts with respondents, who are familiar with the phenomenon, allowed the researcher to develop an in-depth description of a statement, and it bolstered the same comprehensive element towards analysis. Before an interview, respondents completed a qualitative-based survey. These surveys, coupled with the interviews, allowed the researcher to validate the participants' responses for accuracy. Moreover, the interview allowed the researcher to ensure there was no confusion with any of the questions seen on the survey.

This method served as the best plan for acquiring information for this research project because it first provided respondents with time to be methodical in their answers via the online surveys. The interactive interviews enhanced the researcher's ability to gather quality information because there was a level of flexibility seen within personal communication exchanges. The researcher was able to capture spontaneous responses that might not have been considered or ensured that all questions were fully and adequately answered without the element of confusion. Finally, personal interviews allowed the researcher to control the interview environment to where it had the appearance of being inviting, therefore offering the participant a level of security and trust to speak candidly.

Instruments

Interview Guides. To ensure personal interviews were organized and remained on task, the researcher developed a semi-structured interview guide. Before each interview, the researcher became familiar with the organization, so there was room for general pleasantries to ease the conversation towards the interview. While the interview appeared to be a casual interaction, its intent was to be a conversation with a purpose. The semi-structured interview guide was a document comprised of questions relative to the research questions needing to be answered for this analysis and adapted towards a case study design. Additionally, the researcher included prompt words for follow-up questions to keep the overall appearance of the guide condensed. Although it was present in the interview, the researcher already had the material committed to memory and only used it as a method of taking quick notes. Psychologically, the occasional glances at the interview guide helped to keep the tone of the interview natural and inviting.

The administrative and employee semi-structured interview guides were broken down into three sections addressing each of the research questions and their subsections (See Appendix C and Appendix D). For each guide, questions appearing in the first half of the initial section were specifically requesting information regarding why there is a perceived delay in the adoption of HIS/EHR technology, but the administrative guide continues to inquire about how its procurement can potentially improve the quality of healthcare. Variations of these questions appeared in research from Al-Jundi et al. (2019) and Vinh and Huy (2016); therefore, the researcher adapted the wording to fit the context of this particular research. The last set of questions found within the first section sought to determine if compliance to or noncompliance of the policies and procedures enacted by management have made any impactful contributions to

the delay or functionality of HIS/EHR within the organization. These questions were derived from the research presented by Chen et al. (2018). The focus of the questionnaire shifts in the second group of questions by examining either the administrations' or employees' views of their current HIS/EHR and whether they have had any experience with similar systems. These questions emulated the survey questions found in research presented by Sahin et al. (2011). Finally, the last section addressed the research questions focusing on the generational aspects potentially seen in the current workforce. Interview questions within this area were derived from a survey presented by the "Mind Tools" (2021) research team, which follows principles guided by DeYoung et al. (2007); however, the researcher has modified them from a quantitative-based form to qualitative ("The Big Five," 2017).

Surveys. The researcher developed qualitative-based surveys to be administered to both employees and administrators before their interview (See Appendix A and Appendix B). The administrative survey was slightly longer than the one being offered to employees, but reasoning stems from the administrators having to provide additional information concerning purchase intent and competition. Apart from this difference, each survey began by investigating reasons for a perceived delay in the adoption of HIS/EHR technology, then progressed to analyze the effects of the organization's policies and procedures in respect to the phenomenon. The questionnaire also inquired about the actors' experiences with their current system and whether there have been any interactions with other types of similar systems. Finally, both surveys explored deeper qualities by asking the actors to discuss their level of conscientiousness as a method of explaining any generational factors potentially impacting the healthcare industry's use of HIS/EHR technology.

While these surveys were intended to provide validity and consistency of the information gathered from personal interviews, they carried their validation because they were derived from existing surveys. The researcher modified the context of the questions to fit the topic of HIS/EHR technology, but the premise of the inquiries remained the same. The initial questions of the surveys were derived from research appearing within the works of Al-Jundi et al. (2019). The information presented within this work showed that a PLS-SEM (partial least squares/structural equation modeling method) software was used to validate the results of their survey (Al-Jundi et al., 2019). Because this research is governed by the Creative Commons License, permission was not required to use information from this study. Also covered under this license is the work presented by Vinh and Huy (2016), which allowed the researcher to use survey questions without reaching out for expressed permission. The information collected within that study underwent a three-step analysis to ensure validity. The results were first processed with Exploratory Factor Analysis (EFA) and Cronbach's Alpha, then checked with a Confirmation Factor Analysis (CFA), and finally substantiated by a SEM analysis (Vinh & Huy, 2016). Each examination of the results warranted a successful validation of the survey tool.

For inquiries within the survey involving policies and procedures, the researcher used questions derived from a study by Chen et al. (2018), which examined employees' compliance with security policies. Again, the questions were scripted for security; therefore, the researcher modified them to pertain directly to this study. All elements in this research were tested and validated using PLS and Cronbach's Alpha. Furthermore, the researcher was able to obtain permission to use this information within this study.

As the surveys progress towards asking the respondents questions about their utilization of current HIS/EHR technology and their feelings towards using newer equipment, the

researcher pooled questions from the survey used in Sahin et al.'s (2011) research. Sahin et al. (2011) provided validity of their research via the Cronbach's Alpha values, and permission was not required due to the Creative Commons License. In the final section of the survey, the researcher collected questions from "The Big Five" (2017); however, several authors, including DeYoung et al. (2007), have provided Cronbach's Alpha values to support the validity and reliability of these questions. Moreover, the researcher obtained expressed permission from the Mind Tools website to use the questions collected for the surveys.

Data Organization Plan

Examination of the teachings found in Creswell and Poth's (2018) *Qualitative Inquiry and Research Design* showed an advocation of the data collection circle. This concept guides researchers to be mindful of ethical considerations throughout the entirety of the research process while giving thought to the following: locating the site/individuals for the study, gaining access and having a rapport, purposefully sampling, collecting data, recording information, resolving field issues, and storing data (Creswell & Poth, 2018). Luciani et al. (2019) advised that purposeful sampling is comprised of identifying appropriate candidates, selecting the most suitable sampling strategy, and determining the sample size. The researcher has annotated that solicitation for participation was sent to all viable candidates with the help of verbal and social networking and was strictly voluntary. Moreover, the researcher identified that purposeful sampling was used for this study; however, Luciani et al. (2019) detailed that there are additional denominations to be considered: criterion (meets predetermined criteria), typical cases (average occurrences), maximum variation (wide range of occurrences), extreme cases (unusual occurrences), and theoretical (occurrences only considered based on emerging themes). Apart from extreme cases, the researcher believed each of these types was beneficial for this study. The

researcher has also annotated the sample size for this study and elaborated that it was conducted at non-profit healthcare organizations located within seven counties of the northeastern Ohio region.

As the project progressed to physically collecting data, the researcher dispersed and collected surveys along with garnering information via personal communication interviews. Data were recorded using different methods and mediums to include, but were not limited to, hand-written notes and observations, interview write-ups, audio recordings, emails, documents, daily logs, and journaling. While optimism suggested that no issues would be experienced within this research process, rationality advised that the researcher plan for potential complications arising in the field. Creswell and Poth (2018) advised that inexperienced researchers should conduct a pilot project that collected a limited amount of data to gain an understanding of the time necessary to acquire adequate data. The researcher followed this advice and executed a test project in a different region before official testing. Finally, the researcher stored all collected data in multiple external sources: the main computer storage database, Apple iCloud, Liberty University One Note, and an external hard drive.

Summary of Data Collection and Organization

This section provided a detailed depiction of how the researcher acquired and organized data to extract genuine, accurate, and viable information and protect it. By first explaining the process of data collection, readers could understand that many different actors within the selected healthcare facilities not only completed qualitative-based surveys but also participated in verbal interviews. It was explained that the questions used for these instruments were already validated by other researchers, and permission was obtained to use the questions found within these published works. Readers also gained an informed perception of how and where respondents

were selected, the type of sampling that was used, where data were derived, and how they were stored. Additionally, the researcher briefly discussed that a pilot test was executed to mitigate any potential field issues.

Data Analysis

Once the researcher collected substantial amounts of data, an analysis of this information began. The researcher took time to prepare and organize all forms of data, reduced it into themes, and then prepared it for presentation and discussion (Creswell & Poth, 2018). While this is a fairly brief explanation of the process, the researcher will use this section to thoroughly describe each step of the data analysis method and how it was used within this study.

Emergent Ideas

Qualitative research is used when hypotheses and theories are not readily defined, and unfamiliarity is associated with the field of research (Kohlbacher, 2006). By default, qualitative data can appear overwhelming for analysis when compared to quantitative data. The information is not reduced to fundamental terms; instead, it appears as lengthy explanations full of key terms hidden beneath a superficial response. Researchers will use a technique known as memoing to draw out underlying meanings “and develop a deeper conceptual appreciation of the data” (Patel et al., 2016, p. 1746). This exercise asked the researcher to revisit the data and continuously edit insights and ideas to the point that meanings compounded in complexity (Patel et al., 2016). The resulting interpretations derived from memoing were emergent ideas, which are commonly associated with qualitative data and more specifically with grounded theories. Because this was a case study analysis, the memoing technique used throughout the data analysis process followed an informal method where the researcher annotated notes in the margin and identified unofficial codes.

Coding Themes

Similar to emergent ideas, coding is a process used by researchers to identify and link raw data back to research concepts. Coding can be (a) inductive, where the researcher uses duplicated terms voiced by respondents; (b) deductive, where terms are predefined theoretical concepts and selected from existing literature; and (c) or abductive, which is a combination of these two methods (Roberts et al., 2019). Researchers have voiced preference for the latter method because it fosters a more complete analysis by staying within conformed concepts yet allowing room for unconventional ideas (Roberts et al., 2019). While coding offers a deep immersion in the data, it also "maintains coherence between the objective and the results" (Linneberg & Korsgaard, 2019, p. 262).

To assist researchers with this process, numerous software programs have been developed to reduce the time spent sifting through raw data manually. While there are many coding programs available to researchers, the program utilized for this research is NVivo. The organization's website boasted that using their software would minimize time analyzing data and allow for deeper connections that were not possibly seen with manual methods ("Unlock Insights," 2021). Others have advocated the benefits of the NVivo software by explaining that it identified trends and themes then cross-examined this information to discover the more prevalent themes (Alam, 2020). In recent sections of this study, the researcher has established confidence in the use of NVivo software and has annotated that this analysis utilized the program to better validate the results.

Interpretations

As the analysis phase progresses, researchers are to develop interpretations based on the emerging ideas and themes. These interpretations are subjective to the researcher and can either

resonate from meanings “constructed from or imposed on data” or by “assessing the intentions and inferences of those one is studying, making sense of experience and behavior, and seeing or understanding some phenomenon in its own terms” (Spiggle, 1994, p. 492). Comparatively, Lindgren et al. (2020) described the process as drawing a dual comparison and understanding of the text in relation to the informant. As the researcher stated previously, the NVivo software was used to also aid in the development of interpretations throughout this study.

Data Representation

The representation of data describes the manner in which the information will appear within the discussion. Depending on the type of study, readers will see different methods of representation; therefore, the information presented within this study followed practices typically seen within case study designs. While each type of research approach typically has its own style of visualizations, the majority of them rely on narratives, tables, and figures as common representations (Creswell & Poth, 2018). This holds true for case studies as these depictions are used to provide readers with an in-depth view of the case (Creswell & Poth, 2018).

Analysis for Triangulation

The topic of triangulation has been discussed in other sections within this study, but its importance to the credibility of the information presented in qualitative data is unsurpassable. As previously stated, triangulation provides an alignment of numerous perspectives into one cohesive discernment of a phenomenon being analyzed. Moreover, this action provides legitimation of the qualitative material being presented to readers (Moon, 2019). The researcher sought to exercise triangulation throughout this study by following a methodological approach (collecting information from differing methods), where the findings acquired from the interviews were compared to the information recorded in the qualitative-based surveys. This comparison

validated the results because it provided a convergence of data from numerous sources (Wong et al., 2019).

Summary of Data Analysis

There are many aspects comprising the complex process of data analysis, and the researcher used this section to examine and explain the expectations for each element. While emergent ideas evolve from memoing and are commonly seen in grounded theories, the researcher explained that this technique could be equally as helpful in case study designs. More so, it is explained to readers that the use of coding was applied throughout the analysis process with the help of NVivo software. Using the information that materializes from these techniques, interpretations and representations were derived and presented. Finally, this section explained how the data analysis process included the practice of triangulation and how evidence was validated.

Reliability and Validity

The words reliability and validity can oftentimes be misconstrued for one another when discussing the believability of the results of a study. Although their definition is similar, the meaning and determination of each term are vastly different. Throughout this section, the researcher will provide a distinction between each word and how they are applied within this analysis.

Reliability

The mere definition of reliable suggests consistency; therefore, the use of this word within qualitative studies proposes similar connotations. McDonald et al. (2019) provided the following explanation, “the extent to which results are reproduceable” (p. 4). Readers of a study are more apt to have faith in the outcome of an analysis based on the idea that the same result is

achieved each time. When compared to quantitative data, many argue that qualitative data are less reliable due to the limitless responses garnered from respondents. To mitigate these debates, reliability also encompasses the analysis's ability to be credible (believable), transferable (transferable to other contexts), dependable (consistent and capable of being repeated), and confirmable (supported by the data; Rose & Johnson, 2020). These elements working together strengthen the notion of reliability amongst readers when examining a newly submitted study.

Validity

Similarly, the premise of validity identifies something as being logically sound; therefore, when presented within qualitative data, researchers should define this concept as the "degree to which a measure gives the correct answer" (McDonald et al., 2019, p. 4). Consistently accurate achievement of an answer comes from the mitigation of personal bias (bracketing), comparison of all acquired data (triangulation), and the absence of new concepts or themes (saturation; Hall et al., 2016). Moreover, researchers should include member checking, also known as respondent or participant validation, where analyzed data are returned to the respondent for their confirmation of the results (Birt et al., 2016). These elements present a pinnacle of the information being studied and allow readers to deduce that the results are pure and authentic. Following these principles, the researcher continued to collect information from interviews and surveys until discovered concepts and themes remained constant. This is considered acceptable due to the quantity of data for qualitative research being governed by the point of saturation. Although the researcher has identified how triangulation was conducted in this research and presented a synopsis of bracketing within previous sections, one will continue to detail how bracketing techniques were employed throughout this research.

Bracketing

The researcher provided substantial information defining the practice of bracketing and that an epoché phenomenological attitude and phenomenological psychological reduction mindset were exercised throughout this study. The inclusion of personal bias within qualitative research has detrimental ramifications towards the data being collected and could negatively impact several aspects of a study; therefore, careful attention to this practice was necessary. Tufford and Newman (2010) informed individuals that bracketing is an ongoing process, but its starting point is highly debatable. Some researchers advocate that it must begin at the point the study commences, but others annotate that bracketing is counterproductive to the personable nature required for interviews and other types of personal engagements (Tufford & Newman, 2010). The researcher concurred with the later opinion and applied bracketing techniques throughout the study; however, one did not strictly adhere to its practice during interviews.

Summary of Reliability and Validity

The final section of the data collection process asked for the researcher to differentiate between reliability and validity. Many times, these words are used synonymously, but their meanings and application in research are starkly different. It is described that reliability is dependent upon the analysis having credibility, transferability, dependability, and confirmability, whereas validity must utilize bracketing and triangulation while also achieving saturation. The researcher concluded this facet by reiterating the type of bracketing that was employed throughout this research and when readers could expect it to be used.

Summary of Section 2 and Transition

The information presented within this section of the study annotated and explored the research process that was used for identifying reasons for the delayed implementation and

limited successful execution of HIS/EHR technology. Leading the discussion, the researcher described one's actions seen throughout the research process. The research methodology reiterated that a flexible design using qualitative methods was going to be employed and elaborated on the methods for triangulation. Additionally, this discussion identified their appropriateness with consideration to the scope of the study. Moving forward, readers gleaned an understanding of which actors provided the most accurate data for the study of this phenomenon. As a further matter, the characteristics of the population and an exploration of the sampling method, frame, and desired sample, and sample size presented an accurate depiction of where and how the respondents were chosen and the quantity selected.

The final segment of this section focused on data collection and organization. Starting with the data collection plan, the researcher discussed that interviews and surveys were used to gather data. Moreover, a thorough synopsis pertaining to the analysis of data was discussed. The literature elaborates on emergent ideas, coding themes, interpretations, data representation, and the analysis of triangulation. Lastly, the researcher described the difference between reliability and validity and how bracketing was an integral part of solidifying these concepts for the creditability of the research. Thus far, the researcher has presented reasoning for this research and provided a review of the academic literature about the topic. In addition, the second section of the analysis detailed aspects regarding the respondents who were selected for this research and the structure and organization that was employed throughout the collection of data. As the project continues, the researcher will embark on the research process and present a comprehensive review of the findings and how these results apply to professional practice.

Section 3: Application to Professional Practice and Implications for Change

Overview of the Study

The information provided within this portion of the study seeks to provide a detailed explanation of the methods and processes exercised during research. Readers will first understand the role of the researcher: how and where initial data were collected, tools utilized, and the mindset applied throughout this process. The method of research is revisited, but it explains how the researcher adjusted the study to accommodate some organizations declining participation. The discussion lists the participants, population, and sample and how the data they provided was collected and organized. The researcher further denotes the data organization plan and how the *Qualitative Inquiry and Research Design* ideology influenced the study. The researcher concludes the overview by detailing the data analysis process.

Role of the Researcher

The initial entry point for the research was believed to stem from contacting either the press contact, human resources, or information technology (IT) personnel from each facility. The press contacts and human resource representatives proved fruitless, and while the majority of the IT personnel were nonresponsive, one IT individual provided substantially helpful information towards gaining administrative participation in this study. This individual explained that while IT personnel were familiar with working on HIS/EHR, the better contacts were found with the Chief Nursing Officers (CNOs). Equipped with this information, the researcher shifted efforts towards contacting the CNOs, who was elated to help and offered valuable data towards this study. All other participation was collected through the use of social media and word-of-mouth circulation. The surveys were dispersed via electronic methods, and all interviews were

conducted via telecommunications, not for COVID-related reasons but for the respondents' convenience.

Once all data were collected, the researcher utilized the NVivo data analysis tool to sort through the plethora of material, which will be discussed in length within the data analysis section of this study. Throughout the interviews and analysis process, the researcher strived to be mindful of the bracketing techniques described earlier in the study to eliminate personal biases. The researcher believes that the epoché phenomenological attitude was easily followed because one is not actively working with the system; therefore, there are no preconceived negative or positive perceptions of the technology. Information was obtained and processed at its face value with no underlying truths applied. The second bracketing technique of phenomenological psychological reduction being applied was more challenging due to the need of constantly having to reduce information into its most basic form. By placing focus on the concepts of how and what is being described, the researcher was able to extract a more unbiased and true representation of the phenomenon as described by the respondents.

Research Methodology

The researcher found the use of the qualitative research method ideal in acquiring ample amounts of data. Survey questions were designed as short answer responses that allowed respondents to either list a singular word or as many characters as necessary to express their thoughts on a topic. Furthermore, the interviews were structured as casual interchanges, thereby increasing the amount of exchanged information. This allowed for a full understanding of their experiences instead of the constrictions typically found in quantitative data. Adding the flexible design caveat created an even more beneficial role in the data collection process. With this design, the analysis process can be subject to change; therefore, when some facilities declined to

participate or showed acquisition with other organizations, the researcher had the autonomy to reassess and change the sample size for this study. While it is argued that researcher bias exists within this type of design, the researcher believes there is rationale to justify this change and will elaborate in more detail within the population and sampling section. Lastly, triangulation was achieved through the multiple data collection processes and the researcher conducting concomitant investigations of the targeted medical organizations.

Participants and Population and Sampling

As mentioned in Section 2, the researcher intended to sample between 15 and 30 respondents or until data saturation was achieved. The researcher desired actors to be of various age ranges specifically holding titles as administrator, physician, and all other medical care professionals. To ensure proper vetting, the survey asked respondents for the year of their birth and to select their organization from a predetermined, drop-down list of participating facilities. Furthermore, the researcher designed the survey requiring respondents to explicitly identify as one of the three options and then triangulation was achieved when they pointedly listed their actual title at the organization.

The initial list of participating facilities indicated potential responses could stem from the following health organizations: Akron Children's Hospital, Cleveland Clinic, Lake Health, Mercy Health, Southwest General, St. Vincent, Summa Health, and University Hospitals (UH). This extensive list afforded the researcher diversity among health organizations and the ability to transition the study throughout other parts of the area should an organization opt-out of the study. There was a total of 25 recorded surveys, but only nine were thoroughly completed and usable. Initially, the researcher anticipated data saturation to have been achieved when at least two responses from each county (one administrative and one health professional) were acquired;

however, the discovery of new information and the use of the flexible design allowed this expectation to be changed. Throughout the data collection process, the researcher learned that singular administrative departments are responsible for numerous counties and that the one representative could epitomize the response of all; therefore, by exercising the use of the flexible design, the researcher concluded that data saturation could be achieved since an administrative survey from both the Akron and Cleveland metro areas were garnered. The researcher acquired at least one or more responses from each of the counties in both the Cleveland and Akron metro areas except for Lake County. While the Lake Health facility within this area opted out of the survey, their institution recently announced its acquisition with UH thereby making its operations similar to others within the UH community. It was also discovered that many other organizations are partnering with UH, which means that Mercy Health, St. Vincent, and Summa Health are the other facilities opting out of the study. Although their lack of involvement limits the diversity of participating organizations, variety exists with the inclusion of responses from Cleveland Clinic, UH, Southwest General, and Akron Children's Hospital.

The researcher intended to poll a variety of workers from varying age groups throughout the hierarchy of the healthcare industry. Initial inquiry desired responses from administrators, physicians, and all other medical care professionals; however, the researcher gleaned throughout this process that the most ideal administrators to provide input for this study resonated with the CNOs. Considering the study was conducted with the purposive sampling method in mind, the researcher chose to exclusively solicit responses from these individuals. Their responses were ideal because each administrator polled for this study held the title of CNO and had experience using HIS/EHR technology for at least 15 years or more. All other responses came from a variety of titles within the healthcare market, and age ranges varying from 1969 to 1992. Considering

these facts, the researcher was successful in obtaining feedback from an array of employees within the intended generations.

Data Collection and Organization

The researcher followed the case study method data collection plan structured for this study by using an online program called Survey Monkey to develop both the administrative and health professional surveys. The electronic survey allowed respondents to first provide consent for participation then validate their participation by answering qualifying questions. Once the respondent completed this section, the survey directed them to the appropriate survey based on their selection of either administrator, physician, or all other medical professionals. Once the respondents completed their respective survey questions, they were asked if they would be willing to participate in an optional interview. Up to this point, all surveys are anonymous, but change to confidential if the respondent chooses to be involved in an interview. All respondents were asked to provide contact information to be entered into a drawing for a $50 Visa gift card; however, to maintain complete anonymity of responses, respondents were redirected to a completely separate survey also stored within the Survey Monkey website.

As indicated earlier, several surveys were initiated, but only nine were entirely completed. Of these nine usable surveys, six respondents indicated an interest in participating in an interview, while three opted out. When reaching out to these six individuals, only three respondents effectuated conversational data via telecommunication. The researcher used the pre-established interview guides throughout the phone calls to ensure the conversation remained on topic and was purposeful in resolving or collecting any missing data. Furthermore, data collected for this research was annotated via electronic surveys, interview write-ups, hand-written notes, and emails.

Data Organization Plan

The researcher showed consideration to one's knowledge of Creswell and Poth's *Qualitative Inquiry and Research Design* ideology by always being mindful of ethical considerations. Moreover, as the researcher believed human resources representatives were the ideal contacts for initial solicitation of involvement within this study, the exercise of purposeful sampling showed that CNOs were the better advocates. Although the flexible design allowed for the sample size of the study to shift, the researcher ensured inquiry was maintained within the seven suggested counties and concerned only with non-profit organizations.

The researcher followed the advice of Creswell and Poth by initiating a pilot project in the south Alabama region prior to initiating testing within the northeastern Ohio region. These trial surveys allowed the researcher to accurately gauge the time needed to take the survey and complete interviews. Additionally, the pilot subjects offered advice on the use of particular titles and medical jargon to ensure clarity in the surveys and throughout the interview. Following these trials, the researcher followed the predefined process of disseminating surveys and conducting interviews. While a plethora of recording methods were listed, the researcher merely used electronic surveys, interview write-ups, hand-written notes, and emails, as previously discussed. All data collected has been stored on the various frameworks described in section two: Apple iCloud, Liberty University One Note, and an external hard drive.

Data Analysis

The data analysis portion required the researcher to tactfully sift through the plethora of qualitative data by organizing it and then reducing it into themes. All responses submitted through the survey link distributed by the researcher were recorded on the Survey Monkey website and divided accordingly: one for the study, one for interview information, and one for

the random drawing. The website does an effective job in keeping the data organized by grouping responses together based on the question or breaking the data down into individual responses. This allowed the researcher to compare responses and begin identifying common themes among the respondents. The researcher also used the assistance of an online program called NVivo to compare the results. As previously mentioned, this software allows the researcher to deeply analyze the plethora of qualitative data and offers a systematic method of organizing it and its associated themes. The researcher was able to assign codes to the raw data and develop a series of themes expressed by the respondents. This software kept the data centralized and allowed for multiple codes to be allocated to the same response. Many of the discovered themes naturally overlapped, and the website allowed a sidebar depiction to show their relation while keeping the codes separated. This distinction was helpful throughout the analysis process to show how the feelings expressed in one response attributed to another response seen in other parts of the survey.

Presentation of the Findings

The previous sections of this study have provided historical understandings and academic literature to explain how and why HIS/EHR technology has progressed to its current status. With readers abreast of the situation, this section seeks to detail the exact parameters used throughout this research process and provide a comprehensive review of the findings. Readers can expect to explore the numerous discovered themes, where the researcher also provides a lengthy discussion of the interpretation of each theme and a visual depiction of the data. To deepen the analysis, the researcher begins to provide an association of the data with the foundation of the study. The research questions are examined and discussed based on the knowledge provided by respondents.

Additionally, each facet of the conceptual framework is assessed along with revising the anticipated themes and any that might have been missing. The researcher continues a comparison of the collected data with the literature review found in section one together with the problem statement. Finally, an overall summation and assessment of the collected data are described within the summary of the findings.

Themes Discovered

In the earlier analysis of current literature, the researcher believed there to be two anticipated themes: increased patient autonomy and innovation. Throughout the analysis of raw data, the researcher noted several similarly associated themes, but also many others. The generalized themes seen throughout much of the data were: ambition, assurance, satisfaction, and discontent. The researcher has further deduced these themes to show more specific topics which will be discussed throughout the interpretation of the themes. As the researcher references specific comments made by each respondent, a parenthetical differentiation will be included to distinguish the participants.

Interpretation of the Themes

According to Creswell and Poth's (2018) *Qualitative Inquiry and Research Design*, the researcher should analyze qualitative material by first aggregating the feedback into categorial codes and then reducing this information into themes. The authors continue to guide researchers to develop a code list of no more than 20 to 30 categories (Creswell & Poth, 2018). The researcher created 26 different groupings of information and promptly reduced these topics into four overall themes. The generalized connotation of the study revealed that the majority of feedback from respondents was positive and hopeful for future interpretations of HIS/EHR technology. This section of the study will extensively elaborate on each major theme noticed

throughout the coding process and discuss numerous minor themes associated with their precursors.

Ambition. The overall premise behind this emergent theme was the expressed desire respondents had for the system to not only function but be successful. The researcher identified several subsets for this theme to include anticipation, creativity, improvement, open-mindedness, technology, and transitional. Throughout this section, the researcher will expound on how the participant's responses helped this theme to surface.

Anticipation. Beginning with anticipation, the researcher noted that all respondents were willing to try new technologies. Some descriptions were enthusiastically expressive by utilizing words such as "very" and "extremely" (R3, R5, R22, and R25), while others were neutral and less eager. Some respondents elaborated on the reasoning behind their feelings, and of those showing fervent favor towards trying new technologies, the rationale stemmed from personal advancement "…given my area of specialty and the focus of my scope of work" (R24) and the facility providing a conducive environment towards innovation "My facility is innovative and trying new technologies today" (R25). Those respondents showing less enthusiasm sited that while they would openly learn and utilize new technology, their reservations originated in how it would positively or negatively benefit their personal advancements, "…depends on the reasons in changing from a technology I currently use and know" (R13) and "It depends on how much time it takes to learn and how often I will use it. I will learn anything required for my role" (R21). Although these responses appear less willing, there is still an underlying preparedness towards using new technologies; therefore, all respondents show anticipation for future innovations.

Creativity. Another aspect of ambition that was identified was creativity. The researcher believes that this subset theme has spawned out of necessity for an element lacking within the current HIS/EHR. When respondents were asked to describe ways that they have overcome new challenges due to the implementation of HIS/EHR technology, several ways were listed, but they all resonated with divergent thinking: "I try to make shortcuts…" (R13), "I have remote access" (R21), and "Time management" (R23). These tactics require additional effort from respondents, but the overall tone of the participants' feedback suggested a willingness to make this effort; therefore, the researcher deduced this action as an ambitious action among the actors.

Improvement. Throughout data analysis, the researcher noted several comments annotating how the inclusion of HIS/EHR technology had significantly improved the overall implementation of healthcare services. Predominantly, respondents indicated they experienced an overall more efficient operation with decreased amounts of paperwork, increased ease of use, and improved quality and cost effectiveness. One respondent specifically showed appreciation for "…the search function on EPIC as well as the automatic calculation of doses. In pediatrics, medications are weight based so calculating them by hand can lead to errors" (R13). This respondent's comment not only depicts improvement but also demonstrates the technology's ability to mitigate unintentional human errors. Another respondent specifically annotated that HIS/EHR technology had "scalability to large organizations" (R24), which leaves the researcher to believe that the system can be functional for various sizes of institutions within the healthcare industry; therefore, all facilities have an equal probability for success. Respondent 5 listed different types of benefits using the system by citing that it "decreased paper scripts, easier to type out instructions for patients, lots of smart sets, and MyChart messages are a godsend because it eliminates the phone call." The listed benefits show the diversity that HIS/EHR has

brought to healthcare employees. By utilizing the system's functions to their capacity, personnel are experiencing an increase in speed and efficiency, but also enhanced communication between providers and patients. MyChart is a facet of the EPIC HIS/EHR program, which allows patients to manage their care remotely through any electronic device. The company's website affirms that patients can access all their health information in one place to include "medications, test results, upcoming appointments, medical bills, price estimates and more" in addition to securely sharing medical data, scheduling appointments, connecting with a physician, and linking immediate family members to one's account ("My Chart," n.d.). Improvement in this area stands to further increase as patients continue to opt in to this service allowing healthcare professionals to exercise the communication benefits found within HIS/EHR programs.

Open Minded. The researcher noticed a largely open-minded viewpoint throughout the majority of responses. Similar to anticipation, nearly all respondents were receptive towards trying new technologies and welcomed the inputs and criticisms from others when exploring new programs. Their reasoning was genuinely inherent and stemmed from curiosity and motivation for self-improvement: "I'm open to many differing ideas" (R23), "Welcome the thoughts of others on this topic" (R24), and "There were hiccups, obviously, but between management and IT, it went okay" (R22). The latter of the comments show the researcher that healthcare personnel desire a working system; while they understand there are issues throughout the startup process, they are willing to patiently wait for a fully operative system. There was one respondent who showed a neutral, if not hesitant, bias when trying new technologies: "Somewhat willing—depends on the reasons in changing from a technology I currently use and know" and followed this statement with a description of their usual experiences when trying new technologies: "Typically a steep learning curve, may slow me down initially but typically ends up making me

more efficient" (R13). This participant indicates that while there is hesitation in their open-mindedness, they are capable of exploring new options and being successful long after regular application. The researcher believes that with advantageous motivations, this participant would be more open-minded to change. Respondent 25 also presented alternative evidence towards this theme by detailing the likeliness of buying an unknown brand. It was stated that the respondent would "compare all technologies even if not a brand name" and any potential risks are decreased when "you really know what you are getting into" (R25). These explanations detail that this theme presents itself through product comparisons and research.

Technology. Throughout all responses recorded, the researcher observed an increased use and dependence on technology. Each respondent stated the organization had developed its own intranet and housed all vital policies and procedures for operations in this location. Furthermore, support for new technologies such as HIS/EHR is also housed in the intranet, "Web based education. Help desk" (R5). The ideology of personal-based communication and problem-solving methods are outdated practices and have been replaced with remote and electronic methods. With consideration given to the preferences of the different generations working together, this sole use of technology could present challenges for those falling within the Generation X category; however, this will be discussed in length further in the analysis.

Transitional. The final subset to this overall theme is the ability for HIS/EHR technology to be transitional for subsequent uses. The participants' desires for continuing this technology into the future asked that the substance of the system attend to the "Ease of use and outcomes" (R25) in addition to the "…scale and cost of a transition" (R24). Respondents had numerous ideas and requests that would ensure continued usability and success of the system and propel the life cycle of this technology for many years to come. Two respondents encouraged

intercommunication between various systems so “that way we can see what other hospitals have done” (R13 and R20), while others offered suggestions for additional features: “mobile-device compatibility” (R22), “More virtual/telehealth. More emerging technologies: AI, machine learning and automated tasks like documentation” (R24), “Processes that make it easy to do the right thing. Also, ability to capture revenue by better documentation” (R25), and “Efficient ordering sets” (R5). Each of these recommendations safeguards the vitality of the program and conveys the likelihood that organizations would continue to experience the benefits from implementing HIS/EHR technology and prevailing sustainment.

Assurance. Another theme depicted throughout the raw data was that all respondents carried a level of assurance in their abilities and thought processes. This means that elements of confidence, being methodical, and resilience was present in their responses. The researcher will now expound on the rationale of these facets in support of the overall theme.

Confidence. The research questions of this qualitative study pointedly ask whether policies, procedures, and implementation strategies impeded the successful adoption and functionality of a nationally accessible HIS/EHR. The researcher chose a qualitative approach to encourage respondents to frankly communicate their opinions and experiences with consideration to these topics. Throughout all the responses, the theme of confidence was evident as participants not only conveyed their trust in the operation of the organization but also applauded management’s continued encouragement and support of using new technologies. The administrative level respondents indicated that considerable effort and accountability was devoted to the education of employees on policies and procedures, which was always followed by careful observations and audits to verify the soundness of their recent training. These exclusive respondents also annotated that confidence in their decisions regarding the use of new

technology was bolstered due to constant vetting and evaluation "…solutions that best meet our organizational needs" (R24). Moreover, these respondents continued the theme of confidence when elaborating on the evaluations that policies and procedures routinely undergo, and when a guideline becomes obsolete, it is promptly removed.

The frontline workers of this study held the same level of confidence in their organizations. Numerous cited that their management and IT departments were quick to offer tutorials, technical support, and continued education on any operation or technology at their facility. Additionally, employees were aware of the audits being conducted to ensure comprehension and welcomed this practice. Although few employees offered complaints about their respective facility's policies and procedures, "make practicing more tedious" (R23) and "Much more difficult. My management seems to micromanage every aspect of our job, and with outdated software and equipment, it makes it a bit more challenging" (R3), relatively all levels of employees displayed understanding that the implemented policies and procedures were tolerable and designed to guarantee continuity and safety.

Methodical. This theme first surfaced throughout the data as all respondents expressed honest and heartfelt answers that were true to their being. The mere fact that they took time to deliberate over each question and offered a true account of their experiences exudes the epitome of this theme. The researcher can attest that their methods of answering this survey are likely exemplified in their approach to any phenomenon encountered throughout their daily lives. Their thoughtful and introspective mannerisms strengthen the validity of the responses and depict that their thinking extends past an immediate scope towards consideration of the bigger picture. The theme continued to persist throughout the responses when the researcher narrowed the focus towards the literal content. When considering the impactful decisions made by healthcare

organizations, confidence is garnered from being methodical. Respondent 25 stated that the level of research administrators' conduct before selecting a new technology includes, "Typically customer reference calls with others who use the technology, we complete an RFP process and occasionally we will trial something (on a minimal feature scale) for a month or so before making a decision." These meticulous research parameters show that careful consideration is given to all decisions made within the organization. The collected data also show that lower-level employees are willing to be equally methodical and adaptable when learning to overcome the challenges of the new strategies being implemented, "I will learn anything required for my role" (R21).

Resilient. Much literature has been provided on the resilience organizations must possess to withstand the trails of newly implemented strategies. Although the selected respondents work at different facilities, they each show a form of resilience in helping themselves and the organization in successfully achieving implementation expectations. Respondent 23 stated, "Moving from one facility to the next always brings its own set of challenges both exciting and otherwise." The feeling is continued throughout the comments recorded by Respondents 5, 13, 20, 21, and 22.

Satisfaction. The researcher deemed that most respondents appeared genuinely satisfied with current functions and merely offered slight improvements for future operations. Their level of satisfaction was deduced into compliance, cost effectiveness, efficiency, and trust. Throughout this section, the researcher will briefly discuss the deduced facets of this theme as they intertwine within one another.

Compliant. As discussed throughout the theme of confidence, many respondents were satisfied with the policies and procedures established within their respective organizations and

justified this reasoning due to the convenience of management offering support and continued education on many of the topics: “Management, for the most part, are very helpful when it comes to implementing new tech on the floor” (R22) and “Management makes sure we all know the procedures and if we don't, they tell us where to find it” (R20). Many respondents expressed a level of compliance with imparted strategies and cited that “some details in some policies make practicing more tedious, but it’s all for good reason” (R23). The researcher can glean that while some respondents may not want to comply with the imparted structure from management, they understand how it correlates to operations and has a satisfied demeanor in their ability to comply.

Cost Effectiveness. Responses submitted by physicians and all other medical personnel did not reflect a theme related to cost, but administrative participants felt inclined to display partiality towards the topic. While the theme is limited to this bracket of participants, it is nonetheless notable. Both administrators polled for this study indicated that the price of new technology was of no factor so long as the technology was justified for operations. They also stressed that when looking for new technology, preference was given to those frameworks that offered potential cost savings for facility operations.

Efficiency. Several participants, including administrators, discerned a decrease in the level of organizational documentation since the implementation of HIS/EHR technology and indicated that this action allowed them to be more efficient in their daily operations. Moreover, when specifically questioned about a change in the amount of documentation required for patient assessments, Respondent 22 stated, “The time it takes is decreased as clicking boxes is quicker than writing things out, but the amount is the same.” This allows the researcher to understand that a level of efficiency has been achieved while ensuring all required documentation is completed, but another respondent countered this comment by stating, “With paper charting or

narrative notes, you can easily convey what you are trying to document in a sentence but with EHR you are required to have to check multiple boxes in multiple places when narrative notes can convey multiple things all at once in one sentence" (R23). Management takes notice of these requests and considers the "ease of use" (R24 and R25) in addition to "efficiency" (R24) when researching new technology. The researcher believes that while a level of efficiency is being achieved, there is still room for improvement.

Trust. Albeit all respondents emanated a level of trust across many plains of this research, two expressed neutral favor towards trusting others concerning new technologies. Comparatively, the other participants expressed extreme trust and value in the opinions of others, which persuaded them to try and commit to working with new technologies. Another element of trust seen throughout the responses was the trust medical professionals held for management. Not only did they trust the guidelines imparted over them, but they also turned to administrators when questions arose or direction was needed. Trust is a difficult bond to create in a working environment; however, the responses representative of each facility showed that management has successfully achieved this arduous feat.

Moreover, the responses showed that management had placed significant trust in their employees. The policies and procedures are instituted for compliance, but true compliance comes from integrity and respect. Respondent 23 stated, "Some details in some policies make practicing more tedious, but it's all for good reason." This informs the researcher that extra effort is necessary to maintain compliance, but the healthcare professional places trust in management to know what is best.

Discontent. When looking at specific responses, there were a few revealing a level of dissatisfaction with the current operations and technology. It is natural for there to be a balance

of information offering insights to both the positive and negative viewpoints of a topic, so the theme of discontent was expected. Readers will glean throughout this section how responses explicitly displayed characteristics of being burdened, disdained, hesitant, and tolerant.

Burdened. Respondents felt that both policies and procedures, along with progressive technology had encumbered their ability to proficiently perform their operational duties. Participants having worked in the field before the introduction of HIS/EHR technology suggested that documentation had increased over the years. Moreover, Respondent 21 indicated that the organization required patient reports being printed. By having multiple mediums of these reports, forward progression to a paperless, centralized system is mitigated. Briefly mentioned in the previous section about efficiency, Respondent 23 provided vital information displaying the constraints HIS/EHR technology has placed on medical professionals by requiring them to check predefined, specific boxes in comparison to writing a narrative statement. The confining restrictions placed on proper charting and patient assessments do not allow personnel to accurately convey their evaluations and hinder quality care.

Furthermore, all respondents felt burdened by the evolving policies and procedures of the current era. The responses from medical professionals follow the same complaint, "…policies complicate my daily routine…" (R22), "…new policies just create pitfalls for nurses already trying to navigate the mine-field of policies and procedures…" (R23), while administration substantiates these claims by providing, "Policies are too complex and there are too many" (R25). Fortunately, the previous discussion within this section depicts management as making a valiant effort to ensure proper education, ease of access to policies and procedures, and constant monitoring, audits, and continued education.

Disdained. In the previous section discussing satisfaction, the researcher annotated an overall perceived level of trust within the sample; however, two respondents highly indicated a level of disdain. Their complaints resonated with policies and procedures overcomplicating "my daily routine" (R22) and that these guidelines were "too complex and there are too many" (R25). Similar responses were received from respondents of all levels. Moreover, Respondent 3 had specific qualms with management when stating, "My management seems to micromanage every aspect of our job, and with outdated software and equipment, it makes it a bit more challenging." The essence of this theme appears in the foreground of these participants' statements, and while it is not the general consensus of the entire study, the theme does exist.

Hesitant. A natural fear experienced by all humans is fear of the unknown, especially with consideration towards new technology. Roma (2017) identified this fact in a study and claimed that once individuals are more knowledgeable of new technology, this perception either diminishes or disappears altogether. The article also mentions that this fear "creates a relationship between the perception of risk and time," which is relevant in this theme because several respondents mentioned risk aversion and time when annotating their hesitance in either trying a new technology or having to switch (Roma, 2017, p. 66). Respondent 13 stated, "…hesitant it would not be as user friendly or efficient" and Respondent 23 concurs by writing, "Moving from one facility to the next always brings its own set of challenges both exciting and otherwise…learning new computer systems can be very tedious/difficult." Respondent 24 accurately conveys thoughts pertaining to the aspect of risk, "Typically in healthcare we are pretty risk adverse…Personally I'd be willing to take more of a risk but professionally very unlikely." These initial bouts of hesitance are congruent with the material presented in Roma's (2017) research and lead the researcher to believe that these hesitations are conquerable.

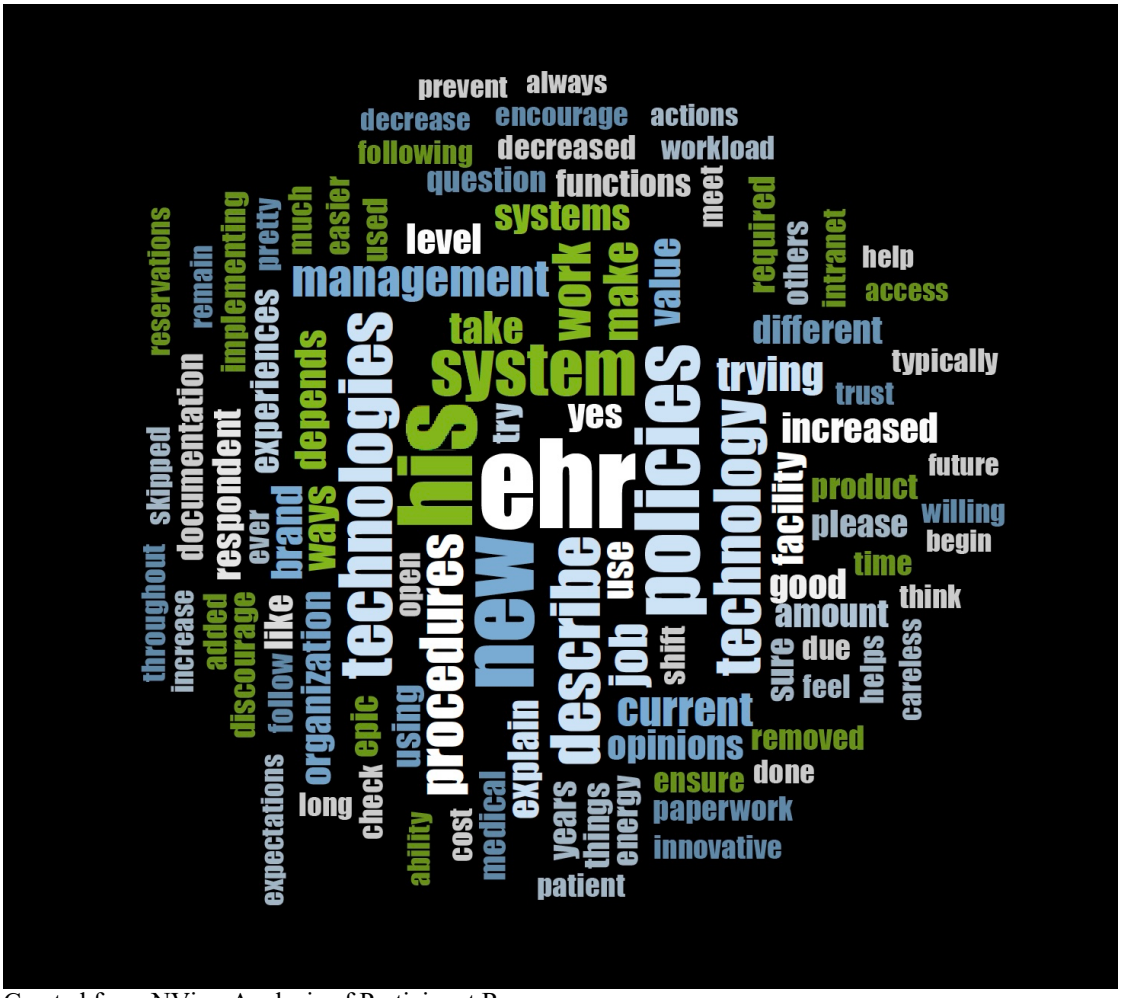
Tolerant. The researcher was able to discern a slight degree of tolerance being exercised by a few respondents. While some were particularly unhappy with operations, they were each able to persist through these negative sentiments and remain successful and compliant. Respondent 3 stated, “Honestly, just suck it up, but I complain about it.” Previous discussions with consideration to creativity have annotated how other respondents have specifically overcome the organizational and technological challenges they encounter. These tactics prove the willingness employees have to tolerate undesirable experiences within the workplace.

Representation and Visualization of the Data

Readers will notice that the representation of data within this study appears as a discussion of the responses received throughout the data collection process. Case study designs cater to different types of data presentation such as narratives, tales, and figures; therefore, the researcher has included a word cloud for those favoring visual aids (Creswell & Poth, 2018). This depiction represents the most highly used words seen throughout the collected data and presents them in a stimulating fashion. The words most frequently used appear within the center of the cloud and with the largest font. As the frequency of the word tapers, it appears with a smaller font and moves towards the outside of the cloud. This infographic quickly communicates vital information to readers and offers a unique presentation of significant data points. Moreover, these types of analytical tools are helpful for researchers when the raw data appears overwhelming, and one is looking for a place to begin. By examining Figure 3, readers will discern that the predominant words in this study include: EHR, HIS, new, policies, system, technologies, describe, technology, and procedures, among many others.

Figure 3

Word Cloud



Created from NVivo Analysis of Participant Responses

Relationship of the Findings

While the previous portions of this project have elaborated on data collection and analysis, this section will provide an association of the data with the foundation of the study. The researcher will describe how the findings of this research relate back to the research questions, conceptual framework, anticipated themes, literature, and the problem statement. This association will begin to formulate how this study can be used to increase awareness and act as a catalyst to the generation of a nationwide HIS/EHR.

Research Questions. The researcher presented three main research questions along with several caveat questions. The first research question sought to answer a significant portion of the problem statement: why is there a delay in the adoption of a nationwide database, do policies and procedures play a contributing factor, and how can the quality of healthcare improve? These are major questions to deduce, but the data gathered from this research has provided noteworthy insight to many of these questions. Firstly, as presented within the previous literature, Vest et al. (2019b) suggested that organizations are either using a single-vendor or enterprise system. Within the northeast Ohio region, participants indicated that their facilities are using a single-vendor system. Although the researched material suggested that 94% of outpatient facilities and 59% of physician settings were currently using EHR technology, this analysis concluded a 100% use of the equipment within the focus area (Sorace et al., 2020). The collected data showed that respective organizations are using one of the following: EPIC, Cerner, Paragon, and Allscripts.

Secondly, policies and procedures do not appear to be a hindrance in the adoption of advanced HIS/EHR technology. Analysis suggested that healthcare employers are welcoming of new technology and educating their employees of its best practices. Both levels of respondents annotated that policies and procedures were readily accessible for quick reference and, should there be any confusion, inquiry to the appropriate department led to swift clarification. Furthermore, the researcher asked if policies and procedures contributed to functionality, and respondents were quick to concur. While their efforts do not aid in the development of advanced technology, it could be reasoned that the perpetuating success of modern technological systems was a direct reflection of their adherence to current policies and procedures. A few non-administrative respondents indicated that they find some guidelines difficult to follow and

cumbersome to their daily work obligations but understand the bigger picture and that their compliance ensures consistency and safety.

Thirdly, the researcher is able to glean that organizations are not shying away from adopting HIS/EHR technology; it is that a nationally accessible technology does not exist. Current systems continue to be incompatible with one another and differ to the extent of users having to undergo additional training to bridge gaps between the software. Respondent 23 specifically identified this obstacle when stating, “Moving from one facility to the next always brings its own set of challenges both exciting and otherwise.” Numerous respondents indicated that the quality of healthcare could be improved by instituting a cross networking feature between the systems, which is the premise behind a nationally accessible system: “It would be great if it crossed to the EHR's in the area; that all systems crossed that way we can see what other hospitals have done” (R20) and “…Intercommunication between different HIE/EHR” (R13). These sentiments by respondents coincide with the number of studies presented within the foundation of the study.

The second research question sought to identify the benefits of standardization. Of those asked, five respondents currently use EPIC, while three others use Paragon, Cerner, and Allscripts, respectively. Respondent 25, currently using Allscripts, added that the organization was in the process of transitioning to EPIC. It appears that EPIC is the dominating system within the northeast Ohio region. However, the researcher delved deeper into the Paragon program and discovered that it is a byproduct of Cerner designed for “acute and ambulatory EHRs ideal for rural and community hospitals and single IDNs” in support of “organizations’ mobile strategies” (“Why Paragon,” n.d.). The website boasted that it uses a non-proprietary operating platform to simplify data (“Why Paragon,” n.d.). The use of a non-proprietary operating system allows any

user to freely download and utilize its technology, thereby increasing universal accessibility. While this system is made for a small-scale operation, its logic can stand as the basis for future national-level HIS/EHR technology.

The final research question focused on generational differences and how these variances affected change strategies for the healthcare industry. Data revealed four respondents classified as Generation X and five identified as Generation Y. The generational groupings from this data did not distinguish any characteristically different traits as noted throughout the research. As a reminder, Generation Y workers are statistically more inclined and welcoming of technology in comparison to Generation X (Arora & Dhole, 2019). During the analysis of the data, the researcher was unable to find a causal link between a respondent's birth year and their willingness to experiment and work with technology.

Conceptual Framework. Assisting the researcher throughout the analysis of data was the conceptual framework presented earlier in this study. This tool is an infographic developed to guide the researcher by keeping material organized to facilitate an understanding of the collected information and how it all works together to create a phenomenon (Jabareen, 2009). Comprised within the conceptual framework are concepts, theories, actors, and constructs, which will be evaluated alongside participant responses throughout the following section.

Concepts. Before conducting this study, the researcher observed five major concepts that were likely causing a delay in the adoption of HIS/EHR technology based on current literature: decentralized EHRs, reduced quality of care, policies and procedures, implementation strategies, and culture. Participant responses denoted that medical organizations are still struggling with decentralized EHRs, "That way we can see what other hospitals have done" (R20). This information is congruent with the material presented within the foundation of the study, which

suggested that there were increasingly more facilities struggling with limited data sharing (Mamlin & Tierney, 2016). The lack of centralization and the desires indicated by respondents for intercommunicability show that this is still an ongoing trend needing resolution.

The introduction of HIS/EHR technology was designed to enhance medical personnel's abilities to streamline operations in an effort to provide better service for patients and improve the quality of care. The consensus among the respondents in this study was that while HIS/EHR technology had decreased the amount of daily operating documentation, there was an increase in the level of documentation required for patient assessments. This contradicted the study presented by Mamlin and Tierney (2016), which suggested that providers were to blame for the increased, complicated documentation. In essence, patient assessments are designed as a template meant for medical professionals to quickly click through as a means of expediting the evaluation process, but respondents are expressing that HIS/EHR technology has only exacerbated the problem. The general belief among participants is that the templated checkboxes fail to illustrate the details of the assessment, or there is not a feasible checkbox for unique circumstances, which has respondents desiring an area for general narratives. "With paper charting or narrative notes, you can easily convey what you are trying to document in a sentence, but with EHR you are required to have to check multiple boxes in multiple places when narrative notes can convey multiple things all at once in one sentence" (R23). Moreover, the researcher observed participants of this study exhibiting similar characteristics to those medical professionals referenced in the literature, wherein the use of shortcuts is predominantly exercised to expedite their time working on patient assessments.

Again, the current literature from Mamlin and Tierney (2016) expressed an increase in facility-level documentation which led the researcher to explore the policies and procedures

guiding these requirements. Throughout this study, the researcher deduced that it is not facility documentation that has increased. It is the level of recording required throughout patient assessments that have heightened. One respondent cites, “With the fear of litigation, I think it increases required documentation” (R3), whereas others reason the increase stems from switching to EHR technology. Respondent 13 explained that when a patient is categorized as an ICU patient and is then transferred to the general patient floor, all charting is duplicated because the EHR system and insurance companies do not recognize the transfer, “…patients are charged for both the ICU bed and floor bed because two notes were written.” Organizations have to impose policies and procedures that can accommodate extrinsic requirements and meet the constructs of HIS/EHR programs.

Literature from Tutty et al. (2019) suggested implementation strategies and the initial efforts of HIS/EHR enforcement were typically negative for both the employer and employee. It is reasonable for anyone to expect disturbances to operations during the enactment of new strategies of any kind; therefore, the inclusion of HIS/EHR technology is no different. The majority of respondents within this survey suggested that their experiences trying new technology were initially met with roadblocks, setbacks, and a steep learning curve, but they were all able to recover and successfully progress forward using the newer technology. Comparatively, the remaining respondents indicated an excitement when working with new technology and that the advanced concepts made them more efficient than their former technology. Incidentally, administrative respondents validated that medical organizations are not concerned with the cost of new technology so long as it increases operational and cost efficiency. The caveat to this is based on Respondent 24’s comment about factors to consider when selecting new technology, “…how often it needs to be maintained/upgraded/replaced, what other

systems/technologies does it interact with…" With organizations keeping efficiency and future usability at the forefront of their decisions, there is reason to believe that more organizations will naturally transition towards one HIS/EHR company over another. This may explain why the organizations considered for this study predominantly use or are transitioning towards EPIC.

The researcher has gleaned that culture is a multifaceted concept comprised of a labyrinth of notions working together to depict a phenomenon. To analyze the concept of culture from its most basic form, the researcher will remind readers of information presented in the previous section: Generation X workers value their leisure time, prefer to work alone, and elect to use technology based on practicality; whereas Generation Y workers require constant supervision, enjoy team-based assignments, and welcome technology (Arora & Dhole, 2019; Denaro et al., 2018; Kotz, 2016). The results of this study do not conclusively defend these connotations. The researcher denoted earlier a close even divide among respondents belonging to either generation, and their ideologies are mixed among the brackets. For example, a respondent classified as Generation X stated that learning new technology was dependent on "how much time it takes to learn and how often I will use it" (R21).

Similarly, Respondent 13, categorized as Generation Y, conveyed a similar sentiment, "Somewhat willing—depends on the reasons in changing from a technology I currently use and know." Moreover, a Generation X respondent identified remote access as a means of overcoming increased documentation, but this goes against the ideology annotated in the literature that they value leisure time. It is reasonable to believe that the respondent uses this remote access to do work from any location and at any time, which could impact that user's leisure time.

The inconsistencies continue with regard to respondents' preference towards team-based versus personal accountability. Three of the four respondents classified as Generation X were

favorable towards team-based accountability, meaning they relied on their counterparts to cross-reference their work. Conversely, three of the five respondents grouped as Generation Y preferred personal accountability. As a whole, both generations preferred self-reliance when attempting to remain on task, and nearly all relied on rudimentary methods such as lists and meditation even though electronic aids were available. The researcher also observed that management placed considerable attention towards audits, feedback, and continued education when evaluating the effectiveness of policies and procedures. While there is no explicit clarification if these critiques are given on a group or individual-based level, the researcher can infer from the responses that it is likely given at an aggregate level because multiple respondents used the terms “we” and “us” when discussing management’s responsibility for implementation of policies and procedures. Of these responses, participants expressed a level of acceptance to this type of delivery. The various statistics listed within this section are contradictive to the literature presented earlier in this study and lead the researcher to believe there may be other factors guiding the intrinsic natures of each generation.

Theories. The use of theories within qualitative research act as a guide for readers to understand intrinsic aspects which are incapable of rationalization. Creswell and Poth (2018) stress the importance of using theories as a means of understanding trends, associations, and relationships, but existing theories do not explain the reasoning for these perceptions. To briefly recap the existing theories presented in the foundation of the study, the behaviorist theory denotes that human behavior is dictated by its environment, humanistic theory details that respondents are motivated based on the prioritization of their needs, the biological theory focuses on the adaptive and evolutionary behaviors of individuals, and psychodynamic theory uncovers unbeknownst processes (Berzoff et al., 2016; Gregory, 2009; Reimann, 2018; Winston, 2016).

Although theories are individually distinguishable concepts, as they apply to the collected data, they are intercorrelated and will be discussed as the researcher progresses throughout various phenomena.

The healthcare environment demands the precision of its employees to ensure safety, but with a personable touch that fosters efficiency and transparency. These environments are cultivated by the policies and procedures enacted by overseeing medical officials. Administrators are responsible for deciphering through a plethora of legal and industry-specific regulatory guidelines, then rendering the information into more a comprehensible form ready for implementation. Similarly, employees are responsible for understanding, applying, and complying with these guidelines throughout their normal operations. Each actor in this scenario is held accountable for adapting and overcoming the many challenges they encounter within their respective environment, which is the essence of the behaviorist, humanistic, and biological theory. The majority of respondents indicated that they complied with their organization's policies and procedures (even if they did not agree) and were encouraged to ask questions should there be any confusion. This type of supportive environment was provided by all organizations within this study and exemplifies the earnestness administrators have for cultivating a positive working environment and culture for change. The researcher believes that while the organization's superficial purpose is to provide guidance, the underlying development of an environment conducive to readiness is the epitome of the psychodynamic theory.

Additional examples of the behaviorist theory present in this study appeared when respondents gave specific input on their adaptability, "Thanks to my many years working in a level 1 ER/Trauma Center, my organization skills are pretty fine-tuned" (R22). The researcher understands that through the experiences present in this respondent's environment, whether

positive, negative, or punishable, changes occurred to improve efficiency and quality of care. Other participants show partiality to the behaviorist theory based on their utilization of functions within the HIS/EHR system or external programs that are designed to facilitate shortcuts, “Lots of smart sets. Drop ins” (R5) and “dotphrases or Dragon” (R13). The perseverance and creativity exhibited by respondents are characteristic of the humanistic and biological theories. Moreover, the researcher believes there is an inevitable psychodynamic element to these responses. Lying deep within participants was the desire to take the initiative and assert oneself towards meeting the expectations of the organization and most importantly, the care received by patients.

Medical professionals are also challenged when organizations shift their exclusivity from one HIS/EHR technology to the next, thereby causing decentralized EHRs. The change in technological systems requires personnel to learn a new infrastructure and reestablish a working system within their departments without any sacrifice to the efficiency and quality of services they provide for their patients. Many respondents explained that they had been involved in this transition and conveyed their experiences throughout the changeover. The majority accepted this practice as commonplace, but their tolerance to changeovers and inconsistent frameworks stems from the behaviorist theory. Moreover, the researcher believes that the humanistic theory can be present in this instance due to the ambitious desires that respondents must have to survive and thrive after final implementation efforts.

Throughout the implementation of a new strategy, employees are tasked to be versatile and transformative, which is present in the biological theory. Moreover, they must make the decision to either submit themselves to this change or anticipate dismissal. This type of ultimatum is a motivating factor among Maslow’s Hierarch of Needs and acts as a proponent for change. Medical facilities are constantly faced with a never-ending need for advancement within

their environment. Healthcare professionals of all levels are aware of this dynamism per the responses of this study, “Healthcare technology is always advancing” (R3) and “My facility is innovative and trying new technologies today” (R25). Because there is a mutual understanding, the behaviors of respondents throughout implementation are guided by the humanistic theory.

Finally, the researcher was unable to find any distinguishing characteristics between the two different generations being studied. It was anticipated that the psychodynamic and biological theories would be used to identify veiled attributes explaining why participants of one generation responded to situations in a different manner than those of another generation. But the collected data showed that all respondents, regardless of age, reacted similarly to one another when confronted with the same situation. The majority showed a welcoming attitude towards trying and utilizing new technology and expending considerable effort to ensure its prolonged use and success.

Since there are no notable differences, the researcher changes the focus to identify their similarities so that these qualities can be used for future generations. It is seen that the healthcare culture is yearning for a revolutionary product that decreases their workload and menial tasks while increasing efficiency and standardization but in an effective manner. For example, respondents were thankful for the checkboxes that expedited common questions but still desired an area for quick notes that did not conform to templated instances. While the underlying issues encountered within healthcare are standard, there is always an element of extenuating circumstances that creates unique situations incapable of being constrained to pre-designed configurations. Along with respondents looking for additional tools and features offered by HIS/EHR technology, they are hopeful for the moment when this technology becomes co-communicative with other systems. They desire to work together as a whole unit in contrast to a

collection of individual units. With emphasis placed on medical professionals as a culture all its own, the researcher can see that the biological theory is present in their mannerisms. They have a longing for regeneration, and this sustainable attitude is passed down via their predecessors. Further, their intrinsic desires to succeed when faced with adversity shows that the humanistic theory is present in their reasoning.

Actors. The researcher was successful in garnering the necessary approval from the institutional review board. Creswell and Poth (2018) explained that this is a required step to ensure that the ethical issues related to "respect for persons, concern for welfare, and justice" are addressed (p. 55). When looking at the healthcare community as a whole, the researcher garnered responses from the targeted actors of this study. It was identified in an earlier section that the healthcare industry is comprised of multiple levels and types of employees that could offer valuable information towards the study of HIS/EHR, but inputs from administrators, physicians, nurses, and all other medical professionals would suffice for this study. The researcher asked for each respondent to list their payroll job title, which allowed for the following positions to be included for research: Flight Paramedic, Nurse Practitioner, Physician of Pediatric Emergency Medicine, Clinical Nurse, Clinical Team Leader, Nurse, Medical Assistant, Assistant Chief Nursing Officer of Nursing Informatics, and Chief Nursing Officer. The diversity among the varying job titles included in this study allowed the researcher to have a broader scope of information and promote a vast range of experiences, thereby strengthening the validity of the results.

Constructs. The constructs within qualitative research serve as the variable aspects that are influenced by actors or the environment and are used to provide clarification of the studied phenomenon (Maxwell, 2019). Those listed for the study of this phenomenon are competition,

innovativeness, conscientiousness, purchase intent, and compliance. The researcher used the NVivo software to identify areas within responses that indicated potential reasoning or to disprove the presence of these constructs. Initially speaking, the information presents a sense of competition among HIS/EHR technology providers, avocation of innovation among medical organizations and employees alike, high rates of conscientiousness, purchase intent is based on functionality and operational efficiency instead of cost, and a high level of compliance to policies and procedures by all employees. Throughout the following section, the researcher will fully elaborate on each topic to show justification of each construct.

With respect to competition, the collected data shows that HIS/EHR manufacturers are providing high-quality and reliable services for their customers. All respondents indicated their systems working with excellent reliability to a capacity of 90% or greater. Moreover, five of the nine respondents indicated that the functions of their current system met their expectations, while two reported having neutral feelings, and one cited complete dissatisfaction. It should be noted that this one respondent, not having positive feedback of their system, was in the process of transitioning from Allscripts to EPIC. Participants verified that the operating systems of the different HIS/EHR technologies on the market today are not compatible with one another.

Furthermore, some operating systems had to be used alongside parent companies, “Medilinks needed to be used in conjunction with EPIC so it was extra work” (R21). The same holds true for Paragon, which was discussed earlier in this section. Based on the collected data, HIS/EHR technologies are vying to be the optimal provider of this service by refining their functions to be the most enticing; however, EPIC stands as the most presiding company on the market and shows momentum to retain this stature for years to come.

Before the researcher conducting this study, there was an expectation that innovation would play a significant role in an organization's innovative practices. It was determined through the participant's responses that the use and advocation of new technology were pronounced within all the environments being researched. While the data did not indicate that the use of technology was a hindrance to the physician/patient rapport, they did indicate that there were difficulties when completing patient assessments. The researcher questions if medical professionals are trying to resolve these issues simultaneous to the assessments or if the resolution is acquired outside of the assessment during intermittent times to keep the personable quality of service high. Moreover, organizations appear to support the use of alternative programs designed to assist medical professionals with time-saving shortcuts. While the information suggested that quality of care had improved since the institution of HIS/EHR technology, data also concluded that there was room for more improvement. As mentioned throughout this presentation, the ability for HIS/EHR technology to be co-communicable is highly desired and thought to increase the quality of care received by patients. The researcher believes that the innovative behaviors from the perspective of health organizations and their employees are healthy and progressive; therefore, the inhibiting factor of this construct resides with the manufacturers of HIS/EHR technology. Specifically, this construct seems perpetuated by the competition as listed in the previous paragraph.

The researcher chose to study differing characteristics between the two predominant generations working amongst one another at the time of this study. As the previous sections of this research elaborated on the differing traits between Generation X and Generation Y, the researcher wanted to take a closer look at each respondent's level of conscientiousness. To facilitate this quest, the researcher derived questions from the big five personality test and

converted them into qualitative self-assessments. Each respondent questioned for this study indicated having significant partiality towards a conscientious nature and being self-motivated. Using this information, the researcher sought to find a commonality between a person's age and their indicated level of conscientiousness. No such relationship was discovered; therefore, the researcher believes a participant's disdain for new technology within this study is based on a different factor external to one's generational influences.

This construct sought to identify inhibiting factors related to a medical facility's purchase intent towards HIS/EHR technology and new products in general. Because this construct deals with administrative level decisions, the administrator surveys differed from the one healthcare professionals were offered to accommodate questions specific to purchase intent. It was agreed by both administrative respondents that the purchase of new technology was solely based on need rather than other factors such as innovation. They also concurred that the price of new technology was of no consideration if the benefits of that product provided a saving in costs or increased efficiency of operations. One of the administrators did say that prolonged maintenance, upgrades, and replacement needs were persuading factors when looking to purchase a new product, whereas Respondent 25 placed more focus on usability aspects such as "ease of use and outcomes." Each respondent stated that they thoroughly researched a product before purchase by looking at reviews and reaching out to others who had experience with the product currently.

Moreover, each of their facilities was accommodating to them conducting a pilot project before full implementation of new technology. With this information, the researcher believes that price is not a delaying factor for progressive HIS/EHR technology. Using the data collected for this study, organizations are more focused on the functions offered by these programs and how they make their operations more efficient.

Compliance within this research was studied based on a respondent's knowledge, comprehension, and adherence to policies enacted by medical facilities. The researcher asked participants to indicate whether they knew the location of their organization's policies and procedures and if they believed amendments were warranted. All participants knew the location of their policies and procedures, and many suggested that these guidelines should be reviewed regularly and vetted for applicability to current operations. When offering opinions about the impacts to operations due to implemented policies and procedures, four respondents voiced that operations were made cumbersome, while fewer respondents indicated the opposite. The data evinced that organizations are holding employees accountable with the use of audits, continuing education, feedback, and keeping employees informed of how and where to obtain information. Based on this synopsis, it is evident that medical facilities are fulfilling their role of enacting, educating, implementing, and sustaining old and new policies and procedures. Furthermore, the researcher can glean from the acquired responses that employees comply with these guidelines, even if they find them unnecessary or cumbersome. The information collected has identified that this construct is not a hindrance for HIS/EHR technology adoption; if anything, it proves the resilience of organizations and their employees to find workarounds for more efficient use of the technology without compromising safety and healthcare quality.

Anticipated Themes. Based on existing literature, the researcher initially deduced that innovation and increased patient autonomy were likely to be discovered throughout this study. While the researcher was innately aware of the probability that HIS/EHR technology had increased notable changes within healthcare, one was not anticipating the radical shift it has truly made. Every respondent indicated that policies and procedures were centrally located on the health organizations' intranet and were accompanied by real-time support for accessibility and

clarification. Furthermore, each respondent indicated that they currently use and have had amassed several years of experience using different types of HIS/EHR technology. While there was some negative feedback, the majority of respondents attested that HIS/EHR technology has improved their ability to provide better quality service for patients and that overall operations are more efficient.

The researcher was also able to identify a moment where increased patient autonomy was indicated by a respondent, “MyChart messages are a godsend because it eliminates the phone call” (R5). The context of this participant’s statement was focused on alleviating their workload by communicating to patients electronically instead of via telecommunication. However, this time-saving measure allows medical professionals to quickly move to the next task while holding patients accountable for seeking further information about their healthcare and services. It further shows that this facility has expectations for patients to use the system for its many other services. Contrarily, Respondent 21, within the same organization but in a different location, shared that patient notes were still required to be printed. This causes the researcher to believe that they are either not using the benefits of MyChart or they are not advocating for patients to make the transition. Either way, this theme was not as pronounced, but should not be ruled out based on the data collected from this geographical location.

As discussed in length earlier, the researcher was able to draw out several other unanticipated themes to include ambition, assurance, satisfaction, and discontent. These generalized themes were broken down into subsets to provide readers with a greater understanding of the data collected and the latent feelings expressed by respondents. Furthermore, the researcher believes that there may be a missing theme of wisdom. While there is no indication of this theme, continued study and reflection of the data offer that more

respondents than not have never experienced healthcare without HIS/EHR technology. Even participants classified as Generation X had reported experience with HIS/EHR technology between 15 and 22 years. This length of time potentially equates to Generation Y respondents having never worked with the rudimentary methods of paper charting. The theme of wisdom would show that respondents were knowledgeable of operations before the implementation of HIS/EHR technology and well after its inception. Alternatively, respondents could have worked at a primitive facility up to the point of this study, and these are their first experiences using HIS/EHR technology, which would offer them a balanced perception. All things considered, the researcher bases these thoughts entirely on the assumption and does not feel it necessary to include authentic findings; however, it should be appraised in future research.

The Literature. Upon commencement of this study, the researcher was aware of the dynamical environment comprising the medical industry and understood the likelihood of identifying commonalities in conjunction with dissimilarities based on the information presented in the literature review. The researcher focused the scope of the study to the northeast Ohio region; therefore, limiting the perspective of the medical community to a specific region. Moreover, the study only included responses from those working at a non-profit organization to better understand the motivations behind their purchase intent.

The researcher understands that organizations are using a directed exchange type system between their respective affiliates, but information exchange with neighboring organizations is not possible with this type of system. Inquiry within the area showed each non-profit organization meaningfully using HIS/EHR, significantly more than the 64% national average reported in previous literature (Adler-Milstein et al., 2011). The systems being utilized in the area of research exhibit a few of the basic characteristics of being fully functional such as

financial stability for future use of the technology and compliance to strategies to achieve goals. Unfortunately, respondents did not provide any indicators regarding privacy or security concerns, so there is no definitive proof that organizations have a fully functional system as described in the literature review.

The literature review provided a discussion on five of the major HIS/EHR brands currently on the market: EPIC, Cerner, MEDITECH, Allscripts, and McKesson. Of these, three were indicated as being used throughout this study. As previous statistics stated, almost all respondents use EPIC, which was identified as one of the more predominant operating systems in the current market. Analysis of the data showed that these systems had a positive influence on each of the issues identified within the problem statement except for decentralized EHRs. Consequently, the decision of organizations to exclusively use one brand over another perpetuates this issue, which will be discussed more in the next section.

Within the literature review, the researcher made a note of the association of HIS/EHR technology to related studies. The initial topics of redundant testing, opioid abuse, and advance directive were found throughout existing literature but were also inferred within the responses acquired by the researcher, “That way we can see what other hospitals have done” (R20). Healthcare professionals are desperate for all information available to make the most informed decisions possible. They are seeking to provide an efficient service for patients, and by seeing all known information and what processes have already been executed, their services can be proactive and superior. Increased compatibility will help to alleviate these issues and is currently desired by active employees.

Final discussion within related studies proposed the direction the industry was taking for future HIS/EHR platforms. While respondents touched on the topic of standardization, they

suggested even more forward-thinking initiatives such as “mobile device compatibility” (R22) and “emerging technologies: AI, machine learning, and automated tasks like documentation” (R24). These ideas transcend into the section of the literature review, which speculated implications for future research. The researcher proposed pioneering ideas such as biometric technology and rapid DNA testing. While these specific functions were not identified within the responses, participants suggested similarly related ideas. It can be surmised that the future of HIS/EHR technology rests in converting trivial tasks into automated processes through progressive, futuristic technologies.

The Problem. Organizations are astutely aware of the issues identified by the researcher within the problem statement. Healthcare has always evolved to provide better service at an affordable rate throughout the years. Current goals are no different, which is evident with organizations committing to the benefits provided by HIS/EHR technology. While this progressive technology was designed to resolve issues relating to access, affordability, and quality of care in addition to decentralized EHRs, the data collected showed that organizations had set ambitious goals coinciding with the same problems. Increased access and greater autonomy of one’s healthcare are achieved by using program features such as MyChart. Objectives towards reducing costs were prevalent throughout the data and were confirmed by the administrators annotating several times that technologies were selected based on their ability to decrease operational costs.

Furthermore, operations were noted to be expedited since the enactment of HIS/EHR technology, thereby increasing the ability of medical personnel to provide a better quality of care. The researcher deduced that decentralized EHRs continue to be a prevailing issue for medical facilities as current HIS/EHR technology fails to be co-communicable. Several

respondents conveyed frustrations with this issue and recommended that the performance of future HIS/EHR technology editions take this shortcoming into consideration.

Summary of the Findings

The researcher was able to acquire a significant amount of data pertaining to the problem identified for this study. The problem statement listed that decentralized EHRs, increased costs, and inconsistent, delayed, and reduced quality of care were likely related to health organizations delaying in the adoption of a nationwide HIS/EHR system. As the findings of this study have assembled, the researcher is more abreast of the current situation and has a better understanding of the actual problem being faced currently. The data showed that the lack of a nationally accessible system had prolonged the negative effects caused by decentralized EHRs, which remains an ongoing issue. Operational costs were witnessed to be at the forefront of technological decision-making within the studied health facilities; therefore, finding ways of stifling these expenses continues to be an endless concern for health organizations in their quest to find optimal HIS/EHR technology. The data further revealed that the quality of care has increased; however, it stands to appreciate with the development of co-communicable HIS/EHR technology.

The researcher believes that the purpose of this study was met with supreme success. Of the targeted facilities, the researcher garnered many responses from four of the major non-profit organizations in the area, thereby allowing diversity of the results. This was highly favorable due to organizations having varying policies and procedures established to meet the needs of their respective business models. Although participants were from different facilities, their responses yielded similar notions: transferability between HIS/EHR systems. By examining the different concepts, theories, and constructs listed before this study, the researcher was able to better

understand that medical facilities and their personnel are both vying for the technology's success and are doing their part to use the system to its maximum potential. All hesitancy with a nationwide level system, which freely transfers data, resides with HIS/EHR companies working together to make their systems compatible.

Aiding in the successful acquisition of valuable data were the research questions guiding this study. These questions sought to reveal different details listed in the problem statement relative to functionality, decentralization, and cultural differences. The first grouping explored aspects directly related to the non-profit medical organizations within the northeast Ohio area; why is there hesitation in HIS/EHR adoption, and what are they doing to support its functionality? Data disclosed that these targeted healthcare organizations are being proactive in adopting HIS/EHR technology and providing ample education and support on the topic for their employees to successfully implement and perpetuate the use of this technology. Progressing into the second aspect of this initial question, the policies and procedures enacted by health organizations are complex and difficult for operations but are tolerable because employees understand the purpose of their structure. Numerous participants annotated their frustrations with the complexities these guidelines add to their daily operations but also suggested that management was making an effort to ensure medical professionals were knowledgeable and had uninhibited access for quick referencing.

Issues with the standardization of technological systems were specifically explored with the use of the second research question. The qualitative nature of this study allowed respondents to express their feelings about the issues they have encountered concerning incompatibility. The information collected indicated that this is a pervasive issue affecting all facilities in the area and coincides with the literature presented earlier in the project. The respondents discussed various

ways that their positions could be enhanced with the aid of linked HIS/EHR and how this simple action causes a positive rippling effect for everyone apart of the healthcare system.

The researcher used the final set of research questions to delve deeper into the idea that a person's intrinsic characteristics were possibly a hindrance to nationally accessible HIS/EHR technology. Literature explored and identified the statistical attributes of each generation working together. As readers have gleaned, Generation X and Y are the predominating groupings found within this study, and they show no substantial distinctions within operations as the literature suggested. The researcher found that their ideologies are similar to one another, and they take pride in working together to provide optimal service for their patients. This could stem from several possibilities: Generation X bequeathing their skills and mindsets to the younger generation, Generation X happily adopting an alternative way of accomplishing tasks, or each generation following their fiduciary duty more than their respective intrinsic characteristics. No matter the reasoning, it was not definitely proven with the collection of this researcher's data, but it shows a high likelihood for positive change strategies in the years to come. The data did reveal the willingness of employees to abide by the strategies enacted by health organizations while continuing their efforts to offer an increase in their service and quality of care for patients.

Application to Professional Practice

The results of this study did not provide arbitrary information regarding HIS/EHR technology. Respondents were candid with their feedback and imparted beneficial information that medical organizations can use to implement within their current operations and future endeavors. Throughout this section, the researcher will discuss general business practices and the various ways of improving them based on the analysis conducted. The researcher will also show how medical facilities can restructure and apply new strategies based on the same data.

Improving General Business Practice

The meaning of general business practices is described as the operations and strategies organizations use to accomplish their goals. In essence, the medical industry is a business designed to provide quality services for patients in exchange for payment. Many organizations have adopted and are using HIS/EHR technology as a method of achieving their goal of increased quality of service and care for patients. This study has examined how operations have been affected by their acquisition of the technology and what elements can be used for future renditions. Moreover, this section explains how organizations can use the information gleaned throughout this study to better serve their general business practices.

The analysis of this study shows that health organizations and their employees are making an earnest effort to use HIS/EHR technology but are hindered in their attempts when they must transfer medical data or need to review the data recorded by another facility. These obstacles affect their daily business operations because they are not capable of providing accurate, expeditious service. Considering the nature of non-profit organizations, it is considerably important for their services to be superior to their for-profit competitors because their tax-exempt status depends on their ability to best serve the community. Should a patient become disgruntled with the services they receive, they can choose a different location. For non-profit organizations, this is a devastating loss; therefore, the information presented in this study helps strengthen their business structures, practices, and objectives.

Through further study of this research, organizations can see how medical professionals have changed their methods of providing healthcare to accommodate the challenges presented by HIS/EHR technology. While many respondents noted a decrease in the amount of administrative paperwork, their level towards patient assessments had increased exponentially. Additionally, it

was noted that the complexity of these documents had escalated. The researcher discovered that medical care providers do not want to be stifled when conducting or annotating their patient assessments. These documents are supposed to be comprehensive evaluations of their observations while working with patients. As the study concluded, HIS/EHR technology has standardized many of these questions and reduced the responses to checkboxes; however, organizations can glean from this study that there are extenuating circumstances that make the checkboxes insufficient for assessments. Increasing the efficiency of organizational operation can be achieved by restructuring the patient assessments provided by HIS/EHR technology to include narrative boxes. It is thought that standardization decreases the time spent on paperwork, and while that may be the case for some evaluations, it does not hold true for all. This study proves that considerable time and effort is spent trying to pigeonhole unique analyses into the constraints of checkboxes. By doing this, providers are causing a negative rippling effect throughout the remainder of these patients' care. As continuing care providers attempt to decipher the ambiguous information, erroneous tests or misdiagnoses are potentially viable results.

Finally, this study asked respondents to provide detailed accounts of their experiences with policies and procedures and daily routines. Organizations can use the negative remarks from respondents as a catalyst for change in their future operations. The pessimistic behaviors of the medical professionals within this study stemmed from a lack of inclusion and feeling their inputs were not being considered. Many had novel ideas for enhancing current operations and numerous innovative suggestions for future endeavors. By including suggestion boxes or placing department-level employees in charge of disseminating information from management, front-line workers will experience increased inclusion and strengthened communication. These simple acts

can lead to more trust being instilled into the efforts presented by management and give employees a sense of purpose and pride in the operation.

Potential Application Strategies

There are pressures from multiple outlets, including but not limited to lawmakers, insurance companies, and patients to increase efficiency and quality without compromise to safety and costs. The adage, “Do more with less” is a proponent of this ideology, but without the proper tools, it is an unattainable goal. Literature suggests that healthcare organizations are working to meet these expectations by adopting HIS/EHR technology. While this is one facet to alleviating the problem, it does not rectify the entire situation. The responses garnered from this study denoted medical facilities utilizing HIS/EHR technologies that are suited for their specific purposes and goals, which means each facility is using a different manufacturer or varying functions of the same program. The researcher believes that the information gathered throughout this project will help bring awareness to the issues plaguing the medical community and perhaps provide beneficial information towards leveraging change strategies for future healthcare operations.

Healthcare organizations can see how the information collected in this study depicts a meaningful use of the latest and most advocated HIS/EHR technology currently on the market. Overall, the responses indicated that organizations are vested in aiding employees to better understand the technology and having access to any helpful tools which may enhance their ability to employ the technology to its maximum potential. The information also shows that employees, whether they believe in the reasoning or not, are complying with the strategies of organizations. This shows reasonable proof that the implementation efforts of organizations have been successful, and future endeavors can be structured similarly.

Furthermore, the data shows that no matter the commitment is given to use HIS/EHR technology, decentralized EHRs are still hindering medical facilities' ability to provide optimal service for patients. The assortment of systems being used is perpetuating the issue of decentralized EHRs. The researcher believes that the only resolution for this problem is for HIS/EHR manufacturers to work together to make their systems compatible for information exchange. Medical organizations are a consumer of HIS/EHR technology and have the power to demand particular functions of the services they receive. The results of this study prove that there is a need for diversifying current technology into something more transferable. Using their employee's responses throughout this study, medical organizations can petition the increased functionality of their technologies and work with HIS/EHR companies to produce systems that are more relative to current medical needs.

Moreover, there were many notable ideas for future endeavors that can be presented to these manufacturers. Just as the medical industry demands services from HIS/EHR providers, these technological companies are competing to be the source of those services and act as the most innovative and exclusive providers. Using the ideas presented in this research will provide longevity of HIS/EHR technology and allow these companies to continue advancing the technology to meet the future needs of the medical community.

Not only is this a desire of medical professionals, but more importantly, patients will equally benefit from these resolutions. As medical records and data become transferrable, patients will experience an improvement in the services they receive. The three main components discussed in this study: affordability, accessibility, and quality of care, are the most affected by increased technological compatibility. The reduction of redundant and unwarranted testing will positively affect the costs associated with treatments. By limiting patients to one source for

access to their medical data, confusion is decreased while satisfaction and confidence in managing their health are increased. By coupling the positive effects of these elements, the quality of care is emphatically impacted for the better. Using these projections in conjunction with the data of this study, medical organizations can set new organizational goals and strategies that demand better service from their providers.

Summary of Application to Professional Practice

Throughout this section, the researcher explained how general business practices within the healthcare industry are to provide affordable, expeditious, and quality care for patients without sacrificing costs and innovation. Efforts to uphold this standard show many facilities adopting and utilizing the beneficial functions found in HIS/EHR technology. It is discussed how current employees and operations are committed to purposefully using the technology but are still met with daily challenges in their attempts to exchange data. The researcher explains how this hinders their ability to provide quality care and leads to a potential loss of clients. Furthermore, it is discussed how the technology has changed patient assessments for the worse and caused them to be more complicated and less accurate, and efficient. Lastly, this discussion identified how certain respondents of this study felt detached from the operation in that their voices were not heard or their efforts were not acknowledged. The researcher hopes that this discussion will help improve overall business practices.

Also detailed within this section were potential application strategies organizations could use based on the information presented in this study. The researcher identifies the pressures imposed on health organizations and acknowledges their efforts of HIS/EHR technology implementation. It is also discussed how users of HIS/EHR technology, both medical professionals and patients, have the power to demand better functionality of the system. Using

this study can provide healthcare organizations with justification for their desires and aid them in developing new operational goals and strategies that cater towards better serving patient needs.

Recommendations for Further Study

Analysis of the data found within this study led the researcher to believe there were two areas that could have been explored more thoroughly. It is unknown whether they would have provided key components to resolving the problem being researched, but the researcher believes their contribution would have been helpful. The first topic for further study is an in-depth analysis of privacy and security concerns. The literature presented at the beginning of this study briefly mentioned these aspects when describing the elements of a fully functioning HIS/EHR and then provided an in-depth association of its role within the current HIS/EHR. The survey questions used to analyze policies and procedures were derived from a study examining employees' compliance to information security policies; however, respondents did not specifically comment on the topic of security. While these questions provided valuable input regarding employee compliance, they failed to address any privacy or security concerns.

Another area warranting further study based on the conclusions of this research is a respondent's level of experience in the career field. The researcher believed that the different characteristics among workers would have stemmed from a participant's generational grouping, but this study has proven this assumption false and leads one to believe that the differences are rather determined by experience and knowledge. Presented earlier as a missing theme of wisdom, the researcher believes that there may be a correlation between a respondent's experience within the field of healthcare and what differentiates them among their peers. Some participants indicated using HIS/EHR technology for 15 to 20 years, which has the researcher questioning if this was the entirety of their career or were they privy to rudimentary paper

charting techniques pre-HIS/EHR implementation. The researcher also feels it is important to distinguish if younger generations have experience with operations before HIS/EHR implementation, if they have ever worked at a facility that did not offer HIS/EHR technology, or if they have only experienced the career field with exclusively using HIS/EHR technology. Further study of this aspect should focus on gathering more information about their previous experience and identifying their knowledge of the healthcare environment pre- and post-HIS/EHR.

Reflections

This section of the study will identify several focal points that allowed the researcher to take a moment and consider the lessons learned throughout the process of the dissertation program. The researcher will elaborate first on the personal growth that took place and then offers a discussion about one's professional growth. Lastly, this section will provide a biblical correlation of the four major business functions and how they were present throughout this analysis.

Personal and Professional Growth

The amount of growth that has stemmed from embarking on this project is incomprehensible. Before the study, the researcher felt assignments were busywork, and the anxiousness to finally be working on a project that meant something personally was overwhelming. It was not until after the dissertation journey began that the researcher realized all previous assignments were preparing one for the elements of this project. The researcher specifically remembers developing a mock qualitative study in BUSI 715, Qualitative and Case Study Methods for Business Research, and wondering why this was relevant. It is now that the researcher understands the premise of this class was to prepare one for analyzing and processing

qualitative data. Multiple times, the researcher referred back to the material from previous classes throughout the dissertation process for reminders and better comprehension of the tasks required for this study.

The processes of the dissertation classes have taught the researcher how to investigate and be inquisitive, methodical, and organized. The researcher has garnered a new understanding of patience, strength, and perseverance. So many challenges and roadblocks were encountered, especially in the first attempt of BUSI 989, Dissertation III, which caused the researcher to delve deep into one's soul to complete the final classes. Looking back, these tests of the researcher's intrinsic characteristics built confidence and self-esteem that left a lasting impression for success in future endeavors. Moreover, these enlightenments have carried over into the researcher's professional growth. Although the researcher has no affiliation with healthcare management or education, one's profession of air traffic control greatly benefited from the lessons learned throughout this process. Simultaneous with this project, the researcher was engrossed in upgrade training, which was very arduous. Without the defining moments experienced throughout this program, the researcher believes that progression within one's career would have been stifled and much more difficult. Although the process has been more than trying, the researcher is grateful for all the experiences and lessons learned.

Biblical Perspective

The functions of business are categorized as the individual processes of an organization collectively working together to not only initiate and sustain change but also aid organizations in achieving operational goals. Many studies have deduced that the four major functions of business include planning, organizing, leading, and controlling (Dolechek et al., 2019). Analysis of the data in this study shows management encompassing skills resonating within each business

function. Throughout this section, the researcher will show how these elements were presented in the study and provide a correlation of these functions with reference to a Christian worldview.

While organizations are capable of restructuring functions of their business, the Christian mindset calls for counsel with God first, "Without counsel plans fail, but with many advisers, they succeed" (*English Standard Version Bible*, 2001, Proverbs 15:22). Additionally, Christian minded leaders must place their faith in the works God lays out before them, "Trust in the Lord with all your heart, and do not lean on your own understanding. In all your ways acknowledge him, and he will make straight your paths" (*English Standard Version Bible*, 2001, Proverbs 3:5-6). After this vital step of reflection and consult with God, organizations can progress towards the planning function. This type of business function expects an organization's efforts to be directed at diversifying operations into a more efficient, innovative manner. The Bible explains in Proverbs 21:5 how this step requires Christians to be methodical and purposeful in their decisions, "The plans of the diligent lead surely to abundance, but everyone who is hasty comes only to poverty" (*English Standard Version Bible*, 2001). This portion of the divine integration shows how organizational leaders should heavily prepare before taking an executive step forward. This type of careful planning was evident throughout this study, as the administrative respondents indicated that thorough research and pilot tests were conducted before the full implementation of new policies, procedures, and technologies.

The next key feature of the four listed business functions is identified as an organization. While the Bible supports organized methods in 1 Corinthians 14:40, "But all things should be done decently and in order," it also provides many instances where the organization was vital in the successful completion of a task (*English Standard Version Bible*, 2001). God exemplifies this ideology when He lists in Genesis the structure He followed when creating the Earth. A specific

task was allocated and accomplished each day, thereby exemplifying the organization necessary to achieve the ultimate goal of creation. Another example can be seen when Moses built the ark as described in Genesis 6. He had to be organized to achieve the significant task God had bestowed upon him. The researcher has provided ample evidence throughout this study to show organizations collecting data about new technologies and processes and then organizing it for research, implementation, and observation.

Next, organizations must provide influential leadership to motivate employees towards achieving organizational goals. The Bible provides numerous examples of notable leaders exhibiting this quality, in addition to listing out the characteristics of an effective leader. Any Christian seeking to become a leader of the church is guided by the qualities listed in 1 Timothy 3:2, "Therefore an overseer must be above reproach, the husband of one wife, sober-minded, self-controlled, respectable, hospitable, able to teach, not a drunkard, not violent but gentle, not quarrelsome, not a lover of money" (*English Standard Version Bible*, 2001). Moreover, Philippians 2:3 explains the selflessness leaders must have, "Do nothing from rivalry or conceit, but in humility count others more significant than yourselves" (*English Standard Version Bible*, 2001). Many of these same traits can be expected of a good leader within organizations, thereby making their leadership effective. While this study does not specifically reference leadership, it did study employee compliance which is a result of effective leadership. It was noted throughout several responses that, while participants were frustrated and hindered by the use of particular policies and procedures, they were compliant and tried their best to be as efficient as possible.

Organizations are said to be controlling when they exhibit the final aspect of the four major business functions. This is not used in a negative connotation. Instead, upper management observes and audits the operation to ensure that organizational goals are being accomplished.

Constant evaluation is demanded of Christians in 2 Corinthians 13:5, “Examine yourselves, to see whether you are in the faith. Test yourselves. Or do you not realize this about yourselves, that Jesus Christ is in you?—unless indeed you fail to meet the test!” (*English Standard Version Bible*, 2001). These appraisals were evident throughout the data collected within this study as both administrators, and all other medical professionals noted evaluations and audits occurring at their facilities.

Summary

The level of enlightenment that was achieved throughout this process is evident as time progressed throughout the dissertation classes. It was discussed how the researcher learned to appreciate the fundamental classes which ultimately prepared one to more accurately research, collect, process, and analyze data. Moreover, the researcher explains how the lessons garnered throughout this journey have contributed to strengthening one’s character and provided valuable tools that can be used within one’s profession. This portion of the discussion also provided a biblical association of the business functions found within this study. As the researcher discussed the parameters of each function, both a biblical citation and a reference from the gathered data were provided. Readers can comprehend how planning, organizing, leading, and controlling are viable subjects within scripture, and the inclusion of God can give Christian organizations confidence in their decisions towards achieving organizational goals.

Summary of Section 3

This final section of the study detailed the many facets working together to compose the findings of this research. As it begins, the researcher provides an overview of the analysis and details one’s position throughout the entirety of this process. Validation of the use of qualitative methods is provided in the following section, where the researcher also includes a justification of

the use of the flexible design. The discussion progresses to detail how data saturation was achieved and the exact areas and personnel that volunteered to participate. The researcher not only identified these elements as part of the targeted population and sampling but also validated their participation. This discussion continues to elaborate on the methods used for data collection and organization while also explaining how these tactics followed the principles dictated by Creswell and Poth's *Qualitative Inquiry and Research Design.* The analysis of data explained that tools such as Survey Monkey and NVivo aided the researcher in interpreting the copious amounts of collected data.

Moving on from the preparatory functions of the analysis process, the researcher progresses the discussion towards specific features of the data and how they relate to the problem being studied. To begin, the researcher reduced the raw data into a lucid form showing the underlying themes and feelings of respondents. It was determined that the overall tone of responses was positive with the presentation of the themes ambition, assurance, and satisfaction, but responses also offered a negative connotation with the theme of discontent. To extend further explanation, an interpretation of these themes was provided, which also presented numerous subset themes. The researcher sought to incorporate a visual depiction of the data and included a word cloud to aid those with visual learning preferences. Finally, a relationship of the findings of previous information presented within the foundation of the study is provided. This section continues by comparing the collected data with the research questions, conceptual framework, anticipated themes, the academic review of literature, and the problem. An overall summary of the results showed that some elements were expected and confirmed by the outcomes of this study, while other portions proved to be inconclusive.

Because this material is designed to benefit the researcher's cognate, applicability to the professional practice is provided. This included elements of improving general business practices and potential application strategies. Moreover, the researcher sought to provide recommendations for future studies. Although many aspects were considered for this study, the results identified other areas of research that could have been examined. As part of this reflection process, the researcher provided a discussion of the personal and professional growth that was experienced throughout this study. Finally, a biblical perspective of the topic is discussed to show how a Christian lens can be applied.

Summary and Study Conclusions

This comprehensive study originated from the researcher's personal frustrations with the exchange of medical data. While not much information was known about the healthcare industry and its intricately intertwined systems, the researcher embarked on formally addressing the problems residing with the current HIS/EHR structure. The foundation of the study presented the background of the technology, the purpose of this study, and what to expect throughout the research process. It was discussed how the study would utilize the benefits found within a qualitative research approach whilst capitalizing on the flexible design and multiple case studies. To keep research appropriately focused, research questions were established while also detailing the parameters of the study by using the conceptual framework. Other aspects such as the elaboration of key terms, assumptions, limitations, and delimitations were identified in addition to the relation of this material to gaps within current literature, Christian beliefs, and healthcare management. A final presentation of the review of current literature provided readers with an exhaustive comprehension of the topic to justify the purpose of this study.

The study progresses to present the project and how it was conducted. Elements of the foundation of the study are reiterated, but the information is introduced to elaborate on the research process. Readers gained an explicit understanding of the researcher's role in the study while also learning about specific aspects of the project. These areas included the targeted actors, population, sampling method, frame, desired sample, and sample size. Moreover, this area of the study annotated the plans for data collection, organization, and analysis. Lastly, it is explained how the material would be considered credible through the explanation of reliability, validity, and bracketing.

The final segment of this study presented the findings of the research. While the previous section introduced the research process, this portion of the study explicitly detailed the actions that took place. In-depth discussions regarding the researcher's role and validity of the qualitative methods are provided before elaborating on the actual participants, population, and sampling that was used. Moreover, details concerning the collection, organization and analysis of data are explained prior to providing a thorough analysis of that data. Throughout this portion of the material, the researcher presented the findings to show the themes discovered and how they were interpreted with respect to excerpts from respondents. Further associations of the material are compared with other elements identified within the foundation of the study to include: the research questions, conceptual framework, anticipated and missing themes, and the problem statement. To provide relevance, the researcher also offers a synopsis of how this material can be beneficial to professional practices and further studies. The final portion offers an area of personal contemplation. The researcher reflects on the personal and professional growth that occurred throughout this endeavor and a true biblical association of the material.

The overall concluding thoughts regarding this study leave the researcher to understand that the true delays for a nationally accessible healthcare exchange system lie with the manufacturers of HIS/EHR technology. Until these organizations work together to make their systems more compatible, the chances of progressive change happening are greatly decreased. As the data shows, there is an overall yearning for this type of technology; one that is more mobile, accessible, and uninhibited. Respondents of this study see the close proximity of this possibility and have not only expressed their desires for this revolutionary technology, but they have also shown their willingness to commit and submit to any training or regulation necessary to achieve this regardless of their stature within the organization.

When thinking back to the problem statement, decentralization is a prevalent issue and a direct result of current HIS/EHR operations. The idea of increased costs was a concern by all organizations studied, but they equally agreed that provided the upfront costs helped to reduce daily organizational costs, it was a worthy enough investment. The results of this study concluded that quality of care within the targeted organizations is not an issue. The majority of respondents declared their dedication to improving the quality of care even when they were presented with the challenges of intermittent or deficient HIS/EHR operations. This study determined that it is not healthcare organizations that are delaying in adopting HIS/EHR technology. It is the inability of HIS/EHR technology manufacturers to provide organizations with a product that accommodates their desires and daily functions. This technology is on the cusp of meeting all the needs of the healthcare industry and patients alike, but the lack of universal accessibility and unimpeded exchange is further delaying progress and innovation. The results of this study concluded that vital improvements reside with HIS/EHR technology

manufacturers overcoming incompatibility issues and developing a platform capable of harmonious exchange.

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Appendix A: Administrative Qualitative Survey

1. How would you describe your willingness to try new technologies? (Al-Jundi et al., 2019)
2. How do you value the opinions of others you trust when they describe their experiences in trying new technologies? (Al-Jundi et al., 2019)
3. What persuades you to choose one brand technology over another? (Al-Jundi et al., 2019)
4. How likely are you to buy an unknown brand technology? (Al-Jundi et al., 2019)
5. How much research do you accomplish before selecting a technology? (Al-Jundi et al., 2019)
6. In what ways does this increase or decrease the perceived risks of new technology? (Al-Jundi et al., 2019)
7. For what reasons do you typically purchase a product? (Al-Jundi et al., 2019)
8. What is the most important factor to consider when selecting a new product? (Al-Jundi et al., 2019)
9. At what price would a new product begin to be too expensive that you would never consider buying it? (Vinh & Huy, 2016)
10. Does a cheaper price point dissuade you from purchasing a product? (Vinh & Huy, 2016)
11. How likely are you to buy an unfamiliar product if it were available in the stores where you normally shop? (Vinh & Huy, 2016)
12. What actions are taken to ensure that policies and procedures are enforced? (Chen et al., 2018)
13. Where do you store your organization’s policies and procedures to facilitate quick access by employees? (Chen et al., 2018)

14. How do you take responsibility for implementing and following policies and procedures? (Chen et al., 2018)
15. Should some policies be removed? If so, please explain. (Chen et al., 2018)
16. Should some policies be added? If so, please explain. (Chen et al., 2018)
17. Do you believe the policies and procedures are easily understood by all employees? (Chen et al., 2018)
18. What impacts to operations have been documented due to following the policies and procedures? (Chen et al., 2018)
19. What is the brand of your current health information system (HIS)/electronic health record (EHR)? (Sahin et al., 2011)
20. How long have you been using your current HIS/EHR system? (Sahin et al., 2011)
21. Does the current HIS/EHR system meet your expectations? (Sahin et al., 2011)
22. What is the reliability of the HIS/EHR system? (Sahin et al., 2011)
23. Would you describe the functionality of the HIS/EHR system equaling the cost of the system? (Sahin et al., 2011)
24. Have you ever used a different brand of this type of HIS/EHR system? (Sahin et al., 2011)
25. If so, what functions do you value the most (or more) between the various HIS/EHR systems? (Sahin et al., 2011)
26. What reservations do you have with switching to a different HIS/EHR vendor? (Sahin et al., 2011)
27. What functions would you like to see in future HIS/EHR systems? (Sahin et al., 2011)
28. Describe your level of energy throughout the work shift. (“The Big Five,” 2017)

29. How would you describe your organization skills? (“The Big Five,” 2017)
30. How would you characterize your ability to make plans and follow through with them? (“The Big Five,” 2017)
31. What actions do you take to begin and remain on task? (“The Big Five,” 2017)
32. In what ways do you ensure a job is completed thoroughly? (“The Big Five,” 2017)
33. How do you prevent careless behaviors? (“The Big Five,” 2017)

Appendix B: Employee Qualitative Survey

1. How would you describe your willingness to try new technologies? (Al-Jundi et al., 2019)
2. How do you value the opinions of others you trust when they describe their experiences in trying new technologies? (Al-Jundi et al., 2019)
3. Describe how their opinions either encourage or discourage you from trying new technologies. (Al-Jundi et al., 2019)
4. In what ways does management provide support of innovative technologies. (Al-Jundi et al., 2019)
5. Describe your experiences with using new technologies. (Al-Jundi et al., 2019)
6. How has the use of HIS/EHR technology increased or decreased your amount of paperwork? (Al-Jundi et al., 2019)
7. How does new HIS/EHR technology increase or decrease the level of documentation required for patient assessments? (Al-Jundi et al., 2019)
8. In what ways do you overcome any increased workload due to new HIS/EHR technology. (Al-Jundi et al., 2019)
9. How and where do you access or reference your organization's policies and procedures? (Chen et al., 2018)
10. How does management take responsibility for implementing and following policies and procedures? (Chen et al., 2018)
11. Should some policies be removed? If so, please explain. (Chen et al., 2018)
12. Should some policies be added? If so, please explain. (Chen et al., 2018)

13. Explain how the policies and procedures impact your job and whether they make it easier or complicate your routine? (Chen et al., 2018)
14. What is the brand of your current HIS/EHR system? (Sahin et al., 2011)
15. How long have you been using your current HIS/EHR system? (Sahin et al., 2011)
16. Does the current HIS/EHR system meet your expectations?
17. What is the reliability of this system? (Sahin et al., 2011)
18. Have you ever used a different brand of this type of HIS/EHR system? (Sahin et al., 2011)
19. If so, what functions do you value the most (or more) between the various HIS/EHR systems? (Sahin et al., 2011)
20. What reservations do you have with switching to a different HIS/EHR vendor? (Sahin et al., 2011)
21. What functions would you like to see in future HIS/EHR systems? (Sahin et al., 2011)
22. Describe your level of energy throughout the work shift. (“The Big Five,” 2017)
23. How would you describe your organization skills? (“The Big Five,” 2017)
24. How would you characterize your ability to make plans and follow through with them? (“The Big Five,” 2017)
25. What actions do you take to begin and remain on task? (“The Big Five,” 2017)
26. In what ways do you ensure a job is completed thoroughly? (“The Big Five,” 2017)
27. How do you prevent careless behaviors? (“The Big Five,” 2017)

Appendix C: Administrative Semi-Structured Interview Guide

RQ1/RQ1a/RQb/RQ1c

1. How would you describe your willingness to try new technologies? (Al-Jundi et al., 2019)
    a. Consult others? (Al-Jundi et al., 2019)
    b. Do these consultations persuade the final decision? (Al-Jundi et al., 2019)
2. What do you look for when deciding between new technologies? (Al-Jundi et al., 2019)
    a. How much research? (Al-Jundi et al., 2019)
    b. Abate fears? (Al-Jundi et al., 2019)
    c. Comfortability with unknown brands. (Al-Jundi et al., 2019)
3. At varying points, you are responsible for considering new technologies; therefore, what is the most important factor to consider when selecting a new product? (Al-Jundi et al., 2019)
    a. From a personal perspective. (Al-Jundi et al., 2019)
    b. From an organizational perspective. (Al-Jundi et al., 2019)
4. At what point does a product become too expensive for consideration? (Vinh & Huy, 2016)
    a. Does a cheaper price point dissuade you?
5. Would you characterize your purchases as being based on familiarity of a product or purchasing platform? (Vinh & Huy, 2016)
6. How are policies and procedures enforced? (Chen et al., 2018)
    a. Readily accessible? (Chen et al., 2018)
    b. Accountability? (Chen et al., 2018)

7. Do you recommend any policies and procedure be added/removed? (Chen et al., 2018)
8. How would you describe the understandability of the policies and procedures? (Chen et al., 2018)
9. Based on current policies and procedures, have there been any notable positive/negative impacts to operations? (Chen et al., 2018)

RQ2

1. I understand from your website that your organization is using a(an) _____ HIS/EHR.
    a. How long? (Sahin et al., 2011)
    b. Expectations? (Sahin et al., 2011)
    c. Reliability? (Sahin et al., 2011)
    d. Functionality equal value? (Sahin et al., 2011)
2. Have you ever used a different brand of system prior to _____? (Sahin et al., 2011)
    a. If so, compare. (Sahin et al., 2011)
3. What reservations do you have with switching to a new vendor? (Sahin et al., 2011)
    a. Cost/time/training/restructuring operations? (Sahin et al., 2011)
4. What functions would you like to see included in newer versions of HIS/EHR? (Sahin et al., 2011)

RQ3/RQ3a

1. Describe your level of energy throughout the work shift. (“The Big Five,” 2017)
2. How would you describe your organization skills? (“The Big Five,” 2017)
3. How would you characterize your ability to make plans and follow through with them? (“The Big Five,” 2017)
    a. Ability to remain on task. (“The Big Five,” 2017)

4. Describe how you ensure a job is thoroughly completed. (“The Big Five,” 2017)
5. What type of actions do you take to prevent carelessness? (“The Big Five,” 2017)

Appendix D: Employee Semi-Structured Interview Guide

RQ1/RQ1a/RQb/RQ1c

1. How would you describe your willingness to try new technologies? (Al-Jundi et al., 2019)
    a. Consult others? (Al-Jundi et al., 2019)
    b. Do these consultations persuade the final decision? (Al-Jundi et al., 2019)
2. How does management provide support of new technologies? (Al-Jundi et al., 2019)
3. Describe your experiences with using new technologies. (Al-Jundi et al., 2019)
    a. Increased workload? (Al-Jundi et al., 2019)
    b. Increased required documentation/time for patient assessments? (Al-Jundi et al., 2019)
        1) How overcome? (Al-Jundi et al., 2019)
    c. Decreased workload? (Al-Jundi et al., 2019)
    d. Decreased required documentation/time for patient assessments? (Al-Jundi et al., 2019)
4. How and where can you access your organization's policies and procedures? (Chen et al., 2018)
    a. In what ways does management take responsibility for implementing and following policies and procedures? (Chen et al., 2018)
5. Do you recommend any policies and procedure be added/removed? (Chen et al., 2018)
6. How does following the policies and procedures help or hinder your ability to effectively perform your required tasks? (Chen et al., 2018)

RQ2

1. I understand from the organization's website that you are currently using a(an) _____ HIS/EHR.
    a. How long? (Sahin et al., 2011)
    b. Expectations? (Sahin et al., 2011)
    c. Reliability? (Sahin et al., 2011)
2. Have you ever used a different brand of system prior to _____? (Sahin et al., 2011)
    a. If so, compare. (Sahin et al., 2011)
3. What reservations do you have with switching to a new vendor? (Sahin et al., 2011)
4. What functions would you like to see included in newer versions of HIS/EHR? (Sahin et al., 2011)

RQ3/RQ3a

1. Describe your level of energy throughout the work shift. ("The Big Five," 2017)
2. How would you describe your organization skills? ("The Big Five," 2017)
3. How would you characterize your ability to make plans and follow through with them? ("The Big Five," 2017)
    a. Ability to remain on task. ("The Big Five," 2017)
4. Describe how you ensure a job is thoroughly completed. ("The Big Five," 2017)
5. What type of actions do you take to prevent carelessness? ("The Big Five," 2017)