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Physicians' Perceptions of Facilitators and Barriers in Electronic Health Record Education

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This is to certify that the doctoral study by

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Walden University
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Abstract

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MA, University of Phoenix, 2010

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Project Study Submitted in Partial Fulfillment

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Abstract

A significant focus in health care is quality documentation to lower patient safety risks. The local problem at a healthcare organization in the northeastern United States is that some physicians are falling short with quality documentation of patient care in *athenaNet*, a cloud-based electronic health record (EHR). This qualitative case study was conducted to explore physicians' perceptions of the facilitators and barriers that impact the educational process for quality documentation in EHRs. Attention also focused on identifying physicians' recommendations for enhancing the educational process for quality documentation. Knowles' adult learning theory served as the conceptual framework. Purposeful sampling was used to select participants who had a minimum of 5 years' experience as a physician and had worked with multiple EHRs in the past. Individual interviews with 11 physicians were supplemented with review of documents in *athenaNet* on milestones in physician documentation. Data analysis included coding of interview transcripts and information from documents to identify common themes: (a) preparation for implementation, (b) specialty-specific training, (c) hands-on practice, (d) time limitations on completing training, (e) preparedness for EHR go-live, and (f) additional training resources. Findings of the study were used to develop a white paper to increase the quality of the documentation entered into an EHR, and to lower patient safety risks through more effective continuing education. The study contributes to positive social change through modifications to the current training methodology for the EHR as a solution to assisting physicians to complete quality documentation.

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Dedication

This project is dedicated to my wonderful husband Ty, daughter, Alexis, son, Tyree, bonus daughter, Nadia, and my beautiful mother, Diane. "You may not always have a comfortable life, and you will not always be able to solve all of the world's problems at once, but don't ever underestimate the importance you can have because history has shown us that courage can be contagious, and hope can take on a life of its own." - Michelle Obama

Acknowledgments

The journey of completing the requirements to obtain my doctorate in adult education has been by far one of my most challenging but yet rewarding events in my life! I was constantly reminded that I can do all things through Christ who strengthens me (Philippians 4:13). Thank you, King Jesus for the path in which you have created for me. I would like to take a moment to thank my husband Ty, for being my rock when I needed you the most! My Lexi and Tyree, I thank you for your continuous support throughout this journey and knowing when to serve as a positive distraction for me to ensure I wouldn't lose my mind! Mommy, thank you for loving on me and jumping in to take care of my family when I couldn't due to school obligations. I would like to acknowledge my family and my friends for reminding me that quitting was never an option, no matter what the circumstances were. I would like to acknowledge my committee members for helping me to complete this journey. Dr. Sorrell, there are not enough words to display my gratitude to you, you have served as an amazing dissertation chair and supporter! I thank you for your guidance and encouragement throughout this journey, we finally did it!

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Section 1: The Problem

The healthcare industry is continuously looking at ways in which safe care can be provided consistently to patients, from clinician to clinician. Ajami and Bagheri-Tadi (2013) determined that 58% of patient safety risk was due to preventable errors. Ajami and Bagheri-Tadi's claimed that electronic health records (EHRs), if adopted and used efficiently, help to ensure safe patient care by capturing clear and concise clinical information. To prepare physicians to document quality patient documentation and thus decrease errors that could impact patient safety, training is vital.

The Local Problem

Alpha Health (AH, a pseudonym), a healthcare organization in the western region of the United States, was identified as needing help with physician documentation of patient care within *athenaNet*, a cloud-based EHR. AH is the parent company for over 80 healthcare organizations in their network, including Beta Health (BH, a pseudonym) in the northeastern region of the United States. BH is responsible for both establishing and leading its day-to-day oversight of documentation in *athenaNet*.

The problem explored in this study was that some physicians at BH failed to use *athenaNet* to accurately document information in a patient's medical record, information that is essential to safe patient care, as evidenced by the *athenaNet* Dashboard content that was shared at the AH leadership meeting (*athenaNet* Dashboard, 2017). This lack of quality documentation may include errors such as delayed entries, failure to note possible medication interaction risk, and placement of duplicate orders (Meaningful Use Report, 2016). A gap was evident in the physician community at BH regarding expected

outcomes of the *athenaNet* training program, a program that was designed to ensure quality treatment plans for patients. This gap was based on comments made during informal discussions with the director of the informatics team. Comments include physicians lacking the ability to give full details of a patient visit in *athenaNet* (BH Director of Informatics; personal communication, February 18, 2016).

The focus of this study was on physicians within the BH organization. Depending on the specialty, before accessing *athenaNet*, physicians were scheduled for approximately 16 hours of training. The education curricula used a blended method that consisted of eLearning modules, instructor-led courses, and self-paced practice scenarios that were completed in a mock-up of *athenaNet*. However, during various leadership meetings held with AH, inadequate healthcare education has been discussed as a continuous barrier, as there was consistent resistance from physicians to fulfill the education requirements (*athenaNet* Training and Support Meeting, 2016). Examples of such resistance included failure to complete the eLearning modules prior to attending the instructor-led course or foregoing the full instructor-led course. Informal discussions with senior physician leadership at BH suggested two perceived barriers in the education process: the time needed to treat patients and the lack of compensation for completing training outside of office hours.

Physicians at BH were required to complete training in *athenaNet* which would allow them to document treatment plans and provide patient care teams with the ability to view patient health records. Reports provided by *athenaNet* demonstrated specific issues that have occurred related to patient documentation entered by clinicians. For example,

one of the recommended milestones was to complete patient documentation within 2 days or less; as of December 15, 2016, BH was averaging 5.96 days (BH Meaningful Use Coordinator; personal communication, March 2, 2016). Failure to complete quality documentation in the recommended timeframe could result in a delay in patient care, which, in turn, could impact patient safety. Failure to appropriately document information in the EHR, for example, patient treatment plans, can increase patient safety risk, affect financial incentives and standard quality documentation (BH Director of Operations; personal communication, January 15, 2015).

Ajami and Bagheri-Tadi (2013) noted the need to identify barriers that prevented successful adoption and use of EHRs. The authors suggested that further research was needed to determine the specific facilitators and barriers that health care providers experienced when attempting to adopt an EHR. Additional support related to barriers indicated that physicians were challenged by workflows that were not intuitive with existing processes that allowed for easy tracking of patient care (Doberne et al., 2015). Though many organizations have physicians who fail to document appropriately, this study focused on the facilitators and barriers that physicians at BH faced in the EHR education.

Rationale

Training physicians to enter patient data in an EHR in a way that demonstrates the importance of documenting quality health care can have a positive critical impact on patients that could decrease patient safety risks. The process of teaching physicians how to effectively use EHRs is continuously evolving, which has led to studies such as that of

Clynch and Kellett (2015), who focused on the importance of quality documentation in an EHR, and Varpio et al. (2015), who suggested that physicians create the patient's story by documenting the care provided.

The overall goal of the EHR, according to AH, was to ensure that organizations, such as BH, are fulfilling both the government and organization mandates and policies about quality documentation within *athenaNet* (Senior Leadership Meeting, 2017). Kuhn, Basch, Barr, and Yackel (2015) explored the concept of clinical documentation and found that EHRs have proven to increase the validity of a patient's health record if the treatment plans are documented accurately. Failure to document quality data could have a negative impact on patients that may include patient safety risks. An evidence-based training program for physicians is needed to help ensure quality documentation in the EHR.

The purpose of this study was to identify physicians' perceptions of the facilitators and barriers in the education process for quality documentation using *athenaNet*. Understanding the impact that these facilitators and barriers had on physicians' learning led to identifying the need to modify the training process for using EHRs, thus helping the leadership team at BH, as well as the health care industry, improve the training methodology for delivering EHR education to physicians.

Definition of Terms

The terms included in this study are defined as follows:

CMS: Centers for Medicare and Medicaid Services: An organization that creates and maintains the guidelines that physicians are strongly encouraged to follow when providing and documenting quality patient care (Snyder & Oliver, 2014).

Electronic Health Record (EHR): An electronic version of patient charts that includes medical treatment and history (Stacy, 2017).

Meaningful Use: A term that describes scribing patient information into an EHR, primarily focusing on improving and enhancing patient safety in addition to documenting quality care (Snyder & Oliver, 2014).

Physicians: A person trained and licensed to practice medicine that has a Doctor of Medicine or Doctor of Osteopathic Medicine degree (Webster's new world college dictionary, 2014). For this study, physicians will include residents, fellows, and supervising physicians.

Quality Documentation: Data entered into an EHR that supports the care that the patient received in addition to displaying evidence-based decisions used to treat the patient (Holden, 2011).

Physician Quality Reporting System (PQRS): Serves as an evaluation mechanism that is managed by CMS to monitor the improvement of quality care (Lundy, D. W., 2014).

Significance of the Study

This project study addressed a local problem: facilitators and barriers in the education process for physicians to enter quality documentation in *athenaNet*. This study is significant due to the critical state of the ongoing provisions that continue to change and align with government mandates. Such changes require physicians to stay abreast of, and adhere to, the principles of sufficient documentation of patient care. The term, meaningful use,

within the healthcare industry identifies the guidelines that healthcare clinicians are to adhere to in documenting patient care.

According to Rabius, Karam-Hage, Blalock, and Cinciripini (2014), meaningful use guides physicians with the regulations that require consideration when treating patients. If physicians complete accurate patient documentation while following the appropriate guidelines, the patient care teams could provide patients with a comprehensive patient treatment plan. The patient plan would be very useful, from a patient's perspective, if all physicians who were part of the care teams, were fully aware of all medical instances that have occurred.

By having a complete quality patient plan, patients could have confidence in understanding the treatment plan assigned to them based on their diagnoses. Additionally, the risk associated with the patient's safety that is attached to delivering a quality patient plan would be lessened. The overall patient experience would improve; additionally, a quality patient plan could decrease the number of claims that are rejected by health insurance companies. Failure to comply with the government-managed mandates could place both physicians and patients at risk (Love et al., 2012).

Increasing patient safety goes beyond the local need. Continuous research is needed to improve the ways in which physicians can consistently maintain accurate patient records by entering quality documentation in the EHR. This study sought to contribute to positive social change by understanding facilitators and barriers that

encouraged the modifications needed to the current training methodology for the EHR as a solution to assisting physicians to complete the recommended training events.

Research Questions

The research questions for this project study were as follows:

RQ1: What are physicians' perceptions of facilitators and barriers that impact the training received in preparation for quality documentation in EHR?

RQ2: What are physicians' recommendations for enhancing the educational process for quality documentation in EHR?

Review of the Literature

To gain a better understanding of physicians' perceptions of facilitators and barriers in EHR education, a review of existing research was conducted. These studies were identified in one or more of the following databases: ERIC, SAGE, ProQuest, EBSCO, MEDLINE, and CINAHL Plus. The following keywords were used: *electronic health records - physicians, electronic medical records - physicians, meaningful use, quality documentation, physicians' facilitators and barriers, physicians – adopting electronic health records, patient safety EHR, EHR impact on patients, physician resistance to EHR training, health information technology (HIT), CMS physicians,* and *Physician Quality Reporting System (PQRS).* The results of searching by the terms mentioned above guided the grouping of the following categories: (a) conceptual framework, (b) health information technology for economic and clinical health (HITECH)/health information technology (HIT)/EHR adoption, (c) meaningful use, (d) training, (e) facilitators and barriers, and (f) quality documentation/quality care.

Conceptual Framework

The need to understand and educate adult learners is a concept related to Malcolm Knowles' (1984) adult learning theory. In Knowles' adult learning theory, there was discussion surrounding the andragogy concept of adult learners spread out in six principles to explain the learning characteristics of adult learners (Knowles, Holton, & Swanson, 2005):

- Need to Know – Adult learners need to understand the why associated with the new concepts that are being educated.
- Self-Concept – Adult learners are self-sufficient and believe they are successful at being self-directed.
- Experience – There is a need to relate relevant examples for adult learners.
- Readiness to Learn – Adults are prepared to receive the education if it is believed to be information that is needed to perform in work/life circumstances.
- Orientation to Learning – Incorporating problem-centered information that will support resolutions.
- Motivation – Internal motivators encourage adult learners to be engaged in learning new things.

According to Ota, DiCarlo, Burts, Laird, and Gioe (2006), training should be more aligned with Knowles' principles in the adult learning theory. Adult learners, such as physicians, would appear to be more successful with learning new material when the

motivational factors (familiar social experiences, hands-on practice, what is in it for me, etc.) are more evident.

Additionally, when the content allows for active engagement, adult learners appeared to be more invested in learning (Lin & McDonough, 2014). Thus, Knowles' adult learning theory, which reflects the need for adult learners to understand the purpose of the content, provides a helpful framework for understanding the perceptions of physicians about facilitators and barriers in the educational process of learning EHR documentation. Additionally, taking into account physicians' experiences, their perception of readiness, and incorporating a problem-focused education curriculum were all considered during this study. Physicians may be more inclined to complete the required education if principles of andragogy and adult learning theory are followed. Reviewing previously completed research studies ensured alignment with both local and social standards related to physicians and EHRs.

HITECH/HIT/EHR Adoption

In 2009, Congress passed the HITECH Act, which focuses on patient privacy, security, health information exchanges, education, incentive payments, and proper health care for patients (Burde, 2011). Due to the HITECH act, healthcare organizations have government-led mandates to document patient care in an approved EHR application. Within the approved EHR, providers are prompted with recommendations to consider when caring for patients. In essence, the EHR assists the providers with recommended levels of care based on content entered into the EHR. With this global mandate comes the initiative to meet what is referred to as meaningful use (MU) core measures. Such core

measures serve as a guide to assist providers with proficiently documenting patient care. Failure to comply with HITECH by 2015 resulted in physicians being subjected to reduced payments and/or reimbursements for services (Burde, 2011).

The concept in which the birth of HITECH/HIT was conceived caused physicians to be motivated to adopt EHRs. Mennemeyer, Menachemi, Rahurkar, and Ford (2015) conducted a study to demonstrate the impact of the HITECH Act. The results of this study suggested that the HITECH act proved to be a small motivator for some physicians to meet meaningful use measures. However, it was not without incident as physicians wanted to see proof of the added value by adopting the recommended processes attached to EHRs. As such, subsequent studies focused on social and personal influences that impact clinicians' adoption levels of EHRs and determined that social and cultural factors must be considered when developing a training strategy for clinicians (Holden, 2012; McAlearney, Robbins, Kowalczyk, Chisolm, & Song, 2012). Physicians' adoption of EHRs continued to be questioned, which prompted researchers to focus their research on physicians' hesitation to adopt the concept of EHRs (Ajami & Bagheri-Tadi, 2013; Greenwood, Ganju, & Angst, 2017; Hochron, & Goldberg, 2014). Such hesitation is currently present at BH to the extent that training is, at times, the component that is overlooked. Cohen (2016) conducted a study about HITECH that supports and demonstrates the value that HITECH has added to physicians' willingness to adopt the concept of EHRs. Gold and McLaughlin (2016) identified the progression physicians have made with their willingness to adopt an EHR in more recent years despite challenges that continue to surface. Overall, the results suggested that HITECH does, in

fact, prove to be an influential accelerator for EHR adoption by the physician population (Cohen, 2016).

Meaningful Use

Physicians' ability to follow guidelines to ensure constant improvements and quality patient care derive from the concept of meaningful use. Snyder and Oliver (2014) explored the significance of education related to EHRs and the impact that it has on clinicians to what is referred to as "attesting to meaningful use." Included in the exploration were 13 articles whose primary focus was meaningful use, of which, one was of the qualitative structure – who's results demonstrated a favorable impact with a correlation of training to increased meaningful use success (Snyder & Oliver, 2014). Additional research was conducted to understand the effect of EHRs as it relates to meaningful use in a clinical setting. These studies also provided details on the relationship between meaningful use and patient care as it relates to providing quality care and documentation (Heisey-Grove, Danehy, Consolazio, Lynch, & Mostashari, 2014; Rabius, Karam-Hage, Blalock, & Cinciripini, 2014).

Attached to the concept of meaningful use is PQRS, which is used to measure physician's outcomes with monetary and adjusted fee incentives attached (Harrington, Coffin, & Chauhan, 2013). Knowing this information helped with clarifying physician's perceptions of meaningful use and the adoption of the EHR. The content of the article suggested ways in which physicians can get a clear understanding of what is needed to meet PQRS goals. Hasson (2015) provided information that supported the penalty initiatives that were in place in 2015 related to meaningful use and PQRS. Physician sites

that failed to meet PQRS goals were subjected to a 1.5% financial penalty; such penalty would lead one to believe the significance of reaching the measures should be kept as a high priority item within the physician site (Hasson, 2015). This article had an impact on the current research due to the necessity to understand the impact of not following the guidelines that were currently in place. Kruse, Hays, Orav, Palan, and Sequist (2017) conducted a study on meaningful use to understand the logistics surrounding the number of times physicians used all of the available features within the EHR when documenting patient care. The results demonstrated that there were opportunities to increase the usage of functions within the EHRs by physicians.

Training in EHR

The goal of this study was to improve the training opportunities and success for the physicians at BH. The importance of the training component when implementing EHRs to document patient treatment plans and care have proven to be required to obtain success (Yang et al., 2012; Goveia et al., 2013). Bredfeldt, Awad, Joseph, and Snyder (2013) provided details on the importance of training physicians with a continuous strategy in mind. In other words, training, when provided beyond the initial basics proved to be more beneficial to clinicians according to the study. Clarke, Belden, and Kim (2014) did a study on physician performance in EHR; they followed up with another study in 2016 to identify the learnability after seven months; this supported the need to fully execute a training program that would encourage high performance from physicians (Clarke, Belden, & Kim, 2016).

Silow-Carroll, Edwards, and Rodin (2012) focused on researching the methods in which EHR education was provided. The study presented results on whether blended learning proved to be the most efficient way to provide EHR education. The results showed that training logistics was a challenge for completing the required education. However, the blended approach appeared to help lessen the gap for training (Silow-Carroll, Edwards, & Rodin, 2012). Further research facilitated by Nechyporenko and McKibbon (2015) discussed the various training approaches that potentially led to the success of physicians fully adopting EHR systems. A sampling of the training approaches used as noted in the study are as follows: engagement, thorough planning, identifying qualified instructors/facilitators, realistic time allotments for the training tasks to be completed along with adding a variety of delivery modalities, e.g., web-based, instructor led, etc. (Nechyporenko & McKibbon, 2015).

Facilitators and Barriers

The literature suggested that facilitators and barriers can include training, communication, safety, and change management components. McMains (2016) demonstrated that medical errors were accounted for the third leading cause of deaths in the United States. Kim, Clarke, Belden, and Hinton's (2014) study on usability challenges and barriers of an EHR showed that physicians with below-average productivity exposed themselves to potential medical errors. Street et al. (2014) focused on the impact of physicians' interactions with patients during the visit while attempting to document that patient's visit in an EHR. Kreimer (2015) described physicians feeling the need to protect their medical license by focusing more on the patient and less on the EHR.

Exploring the facilitators and barriers related to prescribing medications within an EHR was vital for physicians (Hogan-Murphy, Tonna, Strath, & Cunningham, 2015). On the other hand, McAlearney, Hefner, Sieck, Rizer, and Huerta (2015) explored communication as one of the primary issues with EHRs which also led to physicians believing communication was a leading barrier for EHRs. The communication barrier was related to the interactions or lack thereof with the patients. According to one of the interviewee's responses, there's more focus on the computer and what is on it as opposed to concentrating on and conversing with the patient during the visit (McAlearney, Hefner, Sieck, Rizer, & Huerta, 2015). Ommaya et al. (2018) conducted a study that showed clinical burnout as a potential barrier for physicians. Burnout as a result of entering quality documentation along with electronic order entry requirements appeared to be a significant factor for this study, as it provided additional evidence for the need to explore the local problem at BH further.

In addition to physicians being a significant part of quality care and documentation, patients also have a certain level of accountability that cannot be forced. For example, a patient displaying an unwillingness to consent to data sharing of their personal health record poses a legal barrier for physicians (Mello, Adler-Milstein, Ding, & Savage, 2018; Tieu et al., 2015).

Quality Documentation/Quality Care

According to HITECH, EHRs will increase the quality of care presented to patients if adopted (Cohen, 2016). Clynch and Kellett (2015) supplied information on providing quality patient care along with the value of documenting quality information in

a patient's electronic chart. Daniel, Reider, and Posnack (2013) expressed the importance of having the tools in place to support quality documentation with an EHR. Additional studies focused on physicians' perceptions of healthcare quality and practice; included in the studies were the idea that using an EHR correctly can improve a patient's safety and quality care (Lakbala, & Dindarloo, 2014; Love et al., 2012; Noblin et al., 2013). The studies also showed that using the EHR ordering functionality for medications reduced the rate of medical errors and created cost savings. Encinosa and Bae (2015) explored the impact that medication management had on meaningful use; the results of the study identified a 35% decrease in adverse drug events. This was key for this study as it shows the significance that quality documentation of medications within an EHR can increase patient safety measures. Additional focus on the progression of EHRs over the last eight years showed that there is still a need to improve the level of quality documentation that is available to support a cohesive and safe patient record within an EHR (Washington, DeSalvo, Mostashari, & Blumenthal, 2017). Cohen et al. (2018) explored the challenges of quality documentation and found some instances where the quality of the information may be slightly insufficient due to the federal payment attached to government mandates.

Embi et al. (2013) studied the impact that quality patient documentation can have on practitioners and physicians as they develop treatment plans for patient care. The ability to monitor a patient's progress through a chronic condition such as diabetes, in addition to providing a cohesive treatment plan, is possible by way of a smartphone, if the data exist in the patient's EHR with quality documentation (Beaty & Quirk, 2015).

The ability to correlate the needs and benefits for physicians while using EHRs to enhance quality patient care was significant to this study, for it assisted with understanding the gaps that currently exist within the training component of the EHR (Holden, 2011; King, Patel, Jamoom, & Furukawa, 2014). Middleton et al. (2013) conducted a study that showed evidence of the importance of following best practices in EHR documentation to promote safe and effective care. Having a standard in place for documentation could potentially close the training gap and increase physicians' perspectives in a positive manner.

Implications for Positive Social Change

Providing safe patient care starts with keeping an accurate patient record. Failure to follow this process could lead to adverse outcomes for the patient under the physician's care. Focusing the study on physicians' perceptions led to an opportunity to discover the gaps in training, which assisted with developing a strategy to support the physicians as they move forward with EHR training. The study highlighted what currently works well with the current training strategy in addition to exposing the opportunity areas that required adjustments.

Based on the results of the study, there could be a potential follow up study to explore in greater detail training methodologies that can be used to support the physicians' training programs for EHR education. It is also believed that a potential positive impact would be the inclusion of physicians during the planning process of future implementations that require physician training. The inclusion of physicians from

the beginning could possibly increase the success level of the training due to the physicians' expertise and experiences with EHR training.

The results of the study may lead to future projects that would continue to decrease the gaps that were identified from a training perspective for physicians. For example, a white paper project that offered solutions to the facilitators and barriers that were revealed from the study could have a positive impact on how physicians document patient data in the future. Another potential solution to the problem would be to offer in-service training that focuses on tips and tricks that can be used within *athenaNet* to increase the adoption level of the application by the physicians.

Summary

The purpose of Section 1 was to introduce the issue of facilitators and barriers related to EHR training for physicians. Included in Section 1 was discussion about the following: (a) the problem; (b) rationale for the study; (c) definitions; (d) significance of the study; (e) research questions; (f) literature review, and (g) implications. The problem at BH was a practice gap in the physician community; physicians failed to enter quality documentation in patients' records in *athenaNet*. After consideration of the local problem and review of literature, I formulated research questions to conduct a study that would enlighten the leadership team at BH on the cause of the practice gap, coupled with recommendations that could close the gap.

Section 2 will focus on the methodology of the study. There will be discussion about the following topics: (a) qualitative research approach and design; (b) participants; (c) data collection; (d) data analysis, and (e) limitations.

Section 2: Methodology

Qualitative Research Approach and Design

Introduction

Approach and Design

When exploring the method that would best support the study, I found that taking a qualitative approach would be most appropriate. Both quantitative and qualitative methods were considered initially. The quantitative approach would provide more details based on scientific realism, that is, numbers are the primary source for determining the relevance of cause-effect relationships (Lodico, Spaulding, & Voegtle, 2010). The qualitative approach would focus on interpretations and real-life experiences, which would align with Knowles' adult learning theory (Lodico, Spaulding, & Voegtle, 2010). Therefore, using the qualitative approach would allow for a more in-depth understanding of the participants' perceptions and thus a discussion of recommendations on enhancing support for healthcare standards and patient safety.

Baxter and Jack (2008) identified qualitative research as the method that best supports research in health science. It allows an issue to be explored through multiple valuable lenses that support the topics being researched (Baxter & Jack, 2008). Once the qualitative approach was decided, I explored various qualitative designs to identify the qualitative method that best suited this research.

According to Polit and Beck (2017), ethnography is best suited for research that is focused on a participant's world view; phenomenology has roots in both philosophy and psychology, focusing on the meanings of human life experiences; grounded theory is

centralized with sociological theories surrounding world observations; case studies seek an in-depth understanding of an individual or unit's views and perceptions . Yin (2003) suggested that case studies be used when the researcher is interested in learning the how and why of a topic as it relates to a specific group of individuals.

After careful exploration of five qualitative methods, I decided that the case study best supported the research questions that were identified for this study. Thus, a qualitative case study was used to understand physicians' perceptions of facilitators and barriers in EHR education. According to Lodico, Spaulding, and Voegtle (2010), qualitative research typically follows the semi-structured or unstructured interview process as an opportunity to allow for flexibility in gathering the data. A semi-structured interview protocol was used to encourage flexible in-depth responses from physicians to address the research questions. Additionally, using the semi-structured interview approach allowed for modifications as needed. For example, if the tone of the interview led to the need to skip a question, the semi-structured interview approach allowed for this slight modification.

Pope, Royen, and Baker (2002) suggested that qualitative research methods tend to work best in the healthcare industry due to the need to understand perspectives, attitudes and behaviors associated with identifying obstacles that prevent ultimate patient care. Harrison, Birks, Franklin, and Mills (2017) noted that case study research provides a more in-depth understanding of issues that are being explored. Baxter and Jack (2008) suggested that case studies support the idea of exploring an issue through more than one lens to allow for multiple facets to be identified throughout the research being conducted.

As such, the case study methodology was used to provide the parameters and guidelines for exploring BH physicians' perceptions of facilitators and barriers related to training. Findings enhanced understanding of teaching strategies and recommendations, which were integrated into a project option for this study. Taking this approach allowed the findings to serve as a resource to enhance training programs for quality EHR documentation within the *athenaNet* application.

Participants

Identifying the participants for this study was based on Merriam's (2009) commonly suggested method of nonprobability sampling. Also known as purposeful sampling, it is mainly used by researchers who are interested in gaining understanding and insight on a specific topic from participants that can provide the most valuable knowledge and understanding surrounding the topic (Merriam, 2009). Using the nonprobability method to select participants supported this study. Etikan, Musa, and Alkassim (2016) suggested that nonprobability purposive sampling supports research projects that are faced with limited resources, time, and workforce. Purposive sampling also identifies participants that have a specific quality or knowledge to help identify gaps, facilitators, and/or barriers for a specified topic that will support collecting data to address the research questions for the project study. As such, this research project pursued the nonprobability purposive sampling concept. The goal was to use this method to discover physicians' perceptions of facilitators and barriers related to EHR education. Participants in this study included physicians who provided helpful information about how training for quality documentation in the EHR related to varying practicing

specialties such as cardiology, gastroenterology, internal medicine, family medicine, and pediatrics.

The procedures for accessing the participants of this study initially started with the Director of Operations and Practice Managers at BH. Coordination with the director and managers served as the primary resource for explaining the purpose of the study, in addition to the access process for the participants. The director and managers were selected as the primary contact, as they had the most access to the participants. Access included knowledge of physicians' schedules and contact information, as well as identifying physicians that would have knowledge of facilitators and barriers that impacted the training received in preparation for quality documentation in the EHR. As such, the directors and managers were asked to provide a list of all the physicians who met the criteria for participating in the study. In order to protect the participants, the directors and managers were not privy to know which physicians from the list that was provided, participated in the project study.

The process for accessing the participants included contacting the physicians via email. Included in the initial email was an introduction to the project study's purpose, the process of the study, and a consent form. Once the consent form was returned, I moved forward with scheduling interview appointments with the willing participants. Participation selection was based on the consent forms returned with a maximum of 15 returned to within 14 business days of the original date the consent form was sent.

Merriam (2009) suggested that the successful selection of participants is completed by developing specific criteria that would allow the researcher to learn the

most from the participants included in the study. As such, a selection criteria methodology was used for this study that focused on the following requirements for the participants: (a) must be a physician; (b) must have experience with using multiple EHRs, with *athenaNet* being one of them, as this experience provided physicians with the opportunity to make recommendations based on proven methods that have worked in the past with a different EHR; (c) must care for patients in one of the specialties mentioned above; (d) must have completed some form of *athenaNet* training; (e) must have experience documenting patient care both on paper and in an EHR; and (f) must have 5–15 years of experience as a physician.

The sampling size was a crucial component to the success of the research. Sandelowski (1995) suggested that too few participants could result in a lack of theoretical saturation, whereas too many participants could eliminate the depth of the study results. Based on Sandelowski's research, the goal was to have a sample size maximum of 15 physicians. The projected maximum sample size was used to ensure support existed in having a balance with saturation and depth of inquiry.

In addition to understanding the sample size, it was wise to establish a researcher-participant working relationship. Evans and Baum-Combs (2008) suggested that there are three primary methods that must be established when working with study participants: they include respect, beneficence, and justice. As such, with the background that I have as a manager of EHR training, I was able to empathize with the participants as needed. I was also in a position to share my credentials of being in healthcare training for over 13

years, with the intention of recommending a positive change in the local health care organization that both support the physicians' and patients' needs.

I implemented specific measures for protection of participants. Pseudonyms were used to ensure protection for all participants; this also provided a sense of comfort to the participants knowing that it would be challenging to identify the source of the information that was provided (Taylor, Bogdan, & DeVault 2016). Informed consents were required, in addition to ensuring that confidentiality was maintained throughout the study. The informed consents required a signature by each physician who participated in the study. Additional precautions to protect the privacy of the patients, participants, and the organization was achieved due to the HIPAA forms that were previously signed by all employees working at BH. Such HIPAA forms served as a requirement for all employees due to government mandates; these forms ensure that all employees both acknowledge and agree to using discretion related to patient information.

Data Collection

The data collection of this study focused on semi-structured interviews in addition to reviewing data from reports obtained from *athenaNet*. Demographic data were also collected. According to Al-Busaidi (2008), qualitative research in the healthcare industry strongly benefits from using the observation and interviewing methodology. As previously mentioned, semi-structured interviews primarily support qualitative studies in healthcare due to the benefit of revealing issues and/or concerns that will provide more informed data to the researcher (Al-Busaidi, 2008). Novick (2008) suggested that telephone interviews allow for some participants to feel more relaxed, which leads to

offering more transparency due to the comfort of being on the telephone as opposed to in person. The data collected for this research took place with a two-phased approach. Those phases included interviews with physicians along with using the reports feature from *athenaNet* to support the triangulation approach for the data collected. According to Bernard and Ryan (2000), a positivist tradition of text analysis focuses on turning text into codes that can be represented by themes to assist with finding patterns as it relates to the coding of the text.

Data from Interviews

The primary data collection included both onsite and remote (telephone) interviews with physicians. Prior to conducting the interview, the interview protocol (See Appendix B) was shared via email with all participants who agreed to participate in the study. This action was taken to prepare each participant to ensure the interview time of 45 minutes was maximized to its fullness. Interviews with physicians who practiced in different specialties assisted with gathering perceptions from a small but diverse sample. For example, perceptions of facilitators and barriers to the educational process were different between a cardiologist and pediatrician, due to differences in their patient population, which also had an impact on differences in their needs.

Interview protocols with prompting when needed, was used to help ensure the data were not exposed to biases (See Appendix B). The interviews were arranged to meet the participants' availability. There were some limitations to 4 of the participants schedule to allow for onsite interviews, thus telephone interviews were conducted to counteract this barrier. Having the schedules for participants assisted with proposing interview times

for the participants. However, an email communication with each participant defined and finalized the interview. For example, for participants that were not available in person, a telephone interview was scheduled and conducted to collect the data from the participant. During those times when meeting with the participant in person, the location was based on his/her place of comfort to ensure the location was not adding a barrier to the interview process. During the data collection process, transparency of my experience as a trainer and manager of EHR applications, along with my resume was disclosed to ensure they were aware of my experience, skill set and intentions to increase their usability from a quality perspective.

Rahman and Majumder (2014) suggested that qualitative research can offer transparency to problems that include both clinical and social impacts, in addition to using quantitative data elements to further support research. Thurmond (2001) suggested that triangulation helps to decrease the possibility of deficiencies related to an individual strategy. Implementing the triangulation strategy increased the transparency and credibility of the findings from the study. Therefore, in addition to the interviews, I as the researcher, used the reports functionality within the *athenaNet* application that displayed physicians' milestones within *athenaNet*. The goal was to obtain system access via *athenaNet* specific to the organization which provided the reports to be reviewed within the *athenaNet* database. Participants' demographic information was also collected as a method to describe the sample used for the study (See Appendix C). During the interviews, the data were captured as field notes in a dedicated journal. The decision to take field notes in a journal was to ensure each participant had my full attention,

including full eye contact during the interview and was not distracted by the sound of typing on a keyboard attached to a laptop as the data were captured.

Although the thought going into this study was that participants would be open to having the interview recorded, there were only two participants who welcomed the idea of being recorded. Most feared and/or worried about retribution potentially occurring once the results of the study were published. According to Taylor, Bogdan, and DeVault (2016), using recording devices during the interview process can, at times, cause the interviewee to be somewhat reserved in the answers that are provided to the questions that are asked during the interview. In an effort to avoid reservations from the interviewees who requested not to be recorded, data were recorded by pen and paper as field notes in a dedicated journal to reflect the responses of the participants. The interviews took place in strategic places to ensure the identity remained confidential.

For the two participants who welcomed the recording during the interview, the dictated transcript was used to ensure the data captured reflected their thoughts. In the spirit of transparency, data collected from the interview and the study as a whole were maintained in a journal dedicated to this research. The contents of the journal will be kept for a minimum of five years in support of Walden University's research policy. The interview protocols were explicitly designed for this research study to address the two research questions. The two data collection procedures identified for this study provided

the required depth and breadth of the data to answer the two research questions proposed for this study.

Data from Documents

The report titled *athenaNet* Clinicals Utilization was used as the second form of data collection. This report was accessible through the *athenaNet* application under the report's functionality by anyone with *athenaNet* access. Permission to use this functionality was granted to all *athenaNet* users to access such reports at the time of training. Accessing the clinicals report allowed review of random specialty departments which produced the data of how physicians were using *athenaNet* for documenting quality patient care. The time frame in which the search criteria for the report consisted of was from January 1, 2018 to March 31, 2018. A second report was run that included September 1 to December 31, 2018.

The data found within these reports were exposed only to the researcher to ensure confidentiality was maintained. The reports were stored with the remaining data collected throughout this research by way of an electronic file. The data were based on selecting random offices to ensure there were no biases related to the participants who were interviewed during Phase 1. Included in the report were randomly selected physicians who were identified as not using the full functionality of *athenaNet*. Lack of full utilization ranged from not identifying patient safety issues to missed capital/revenue opportunities (internal resource, *athenaNet* Clinicals Utilization Report). The data elements of the utilization report focused on the following: (a) total number of encounters (office visits); (b) number of closed encounters (office visits); and (c) the number of days

encounters remained opened (See Appendix D). Analyzing the data retrieved from the *athenaNet* Clinicals Utilization report for physicians displayed either effective or non-effective utilization of *athenaNet* based on the targeted goals within the report.

As the training manager at AH, I have no authority, control, or any direct connections with any of the physicians who were a part of this study at BH. Furthermore, this research was being conducted in an attempt to identify a possible solution that could have an impact on the social community of the healthcare industry. Encouraged by Love et al. (2012), findings that indicate a decrease in medical errors related to quality use of electronic medical order entry in EHRs, I would be remiss if I did not complete my due diligence as an educator to provide recommendations based on the findings of the study. Upon completion of the research, the intent was to share the findings with local healthcare organizations as a guide to assist with developing a cohesive education program that will help both the physicians and their patient community.

Data Analysis

The data served as a significant contributing component to developing a cohesive continuing education white paper to enhance physicians' education with *athenaNet*. According to Merriam (2009), completing data analysis while in the collection process is recommended for a novice researcher.

Field notes taken during the interview were transcribed from the journal to electronic text in a Microsoft word document. These transcripts, along with transcripts from the Dragon Naturally Speaking software used with the two participants who agreed

to being recorded during the interview, were analyzed in relation to research questions for the study.

Coding was the primary source for organizing data collected during the study. Coding helps the researcher identify patterns and themes that exist in the data (Lodico, Spaulding, & Voegtle, 2010). For example, documenting the physicians' additional comments outside of the questions that were asked during the interview could potentially be a contributing factor in identifying physicians' perceptions of a barrier.

Neale (2016) suggested that iterative categorization (IC) is used to provide researchers with standardized guidelines to analyze data thoroughly. As such, IC served as the primary method for analyzing the data collected for this research. Fusch and Ness (2015) suggested that a lack of data saturation can jeopardize the quality of the research that was conducted. Based on this concept, to help ensure accuracy with the coding, electronic software was used to assist with determining the total number of categories and themes to be used to analyze the data. Bradley, Curry, and Devers (2007) stated that inductive reasoning accompanied by coding themes, e.g., conceptual, relationship, perspective, etc., serve as a reliable assistant to analyzing data. Triangulation also serves as a resource to identify the themes/categories to enhance the data credibility.

QDA Miner, a qualitative data analysis software, was used to identify and assign a color to each code that was created. As codes were defined, the software program assisted with keeping the data focused on the problem that was being studied. Once the codes were created, QDA Miner was used to start the process for developing themes.

Accuracy and Credibility

Upon completion of the transcription, the transcript was sent to each participant to ensure nothing was misconstrued during the transcription process from the dedicated journal into electronic text. For the two participants who welcomed the recording during the interview, the dictated transcript was used to ensure the data captured reflected their thoughts. The member checking process took place within two days of capturing the data from each participant. More specifically, once the interview was completed, the participant received the transcribed notes in a Microsoft word document within two days of the interview. This approach was designed to help keep the integrity of the data collected.

I implemented various procedures to assure accuracy and credibility of the findings. The member checking methodology was used to ensure that integrity of the data was maintained throughout the collection process. The member checking process took place within two days of capturing the data from each participant. More specifically, once the interview was completed, the participant received the transcribed notes in a Microsoft word document within two days of the interview. Additionally, transcribing the field notes into an electronic format, matched with the member checking, provided assistance with analyzing the data efficiently.

Discrepant Cases

To confront discrepant data along with solidifying the accuracy of the data collected, the following was completed: (a) selection criteria methodology, (b) semi-structured interview protocols (Al-Busaidi, 2008), (c) triangulation methodology to

increase credibility (Thurmond, 2001), and (d) providing transcripts to participants to ensure accuracy of data collected. Such methods were used to support a transparent process during the data-gathering phase.

During the interview process, there were a few occasions when physicians attempted to discuss areas related to office operations that were out of scope for the study. In those events, that data were not included in the overall data collection of the study. The data collected were in alignment with the themes that were identified in the QDA Miner software. Discrepant data that counteracted the identified themes/categories were identified in the project study report. Discrepant data will be communicated to the leadership at BH, as it may be used to have additional projects developed based on the potential outcomes. Although additional information surfaced during the research that could be used at a later time, it was in the best interest of this particular study to focus only on those categories that helped with determining physicians' perceptions of facilitators and barriers related to EHR training.

Data Analysis Results

The data collected for this research took place with a two-phased approach. Those phases included interviews with physicians along with using the reports feature from *athenaNet* to support the triangulation approach for the data collected. According to Bernard and Ryan (2000), a positivist tradition of text analysis focuses on turning text into codes that can be represented by themes to assist with finding patterns as it relates to the coding of the text. Six themes were identified: (a) preparation for implementations, (b) specialty-specific training, (c) hands-on practice, (d) time limitations on completing

training, (e) preparedness for EHR go-live, and (f) additional training resources. Demographic data were also analyzed to describe the sample for the study.

Demographic Analysis of the Sample

The sample for the study included 11 physicians from multiple backgrounds and specialties (see Table 1). Physicians represented nine different specialties. Experience with using EHRs ranged from 5 to 11 years.

Table 1

Participant Demographics

Participant	No. of years as a physician	Specialty	Names of EHRs with past experience	No. of years using EHRs	athenaNet training previously completed	No. of years using paper charts
Participant 1	15	Orthopedics	Cerner, Epic, NextGen, athenaNet	11	Y	4
Participant 2	9	Orthopedics	NextGen, athenaNet	9	Y	0
Participant 3	5	Cardiology	ARIA, Meditech, athenaNet	5	Y	0
Participant 4	11	Gastroenterology	Epic, Sunrise, athenaNet	9	Y	2
Participant 5	14	Family Medicine	Meditech, CureMD NextGen, athenaNet	8	Y	6
Participant 6	9	OB/GYN	eClinicalWorks, NextGen, athenaNet	8	Y	1
Participant 7	5	Pediatrics	NextGen, athenaNet	5	Y	0
Participant 8	12	Surgery	Meditech, Cerner, Epic, NextGen, athenaNet	9	Y	3
Participant 9	5	Surgery	Meditech, NextGen, athenaNet	5	Y	0
Participant 10	7	Family Medicine	Epic, athenaNet	5	Y	2

Participant 11	10	Internal Medicine	Cerner, Epic, athenaNet	7	Y	3

Phase I: Interview Results

I initially scheduled the interview for 45 minutes, as that was the only time frame available for the first participant. However, during the interview the discussion proved to be extensive and lasted beyond the anticipated initial 45 minutes. As such, the interviews scheduled after that were extended from 45 to 60 minutes.

Research Question 1. Three themes supported the first research question: What are physicians' perceptions of facilitators and barriers that impact the training received in preparation for quality documentation in EHR? The themes that supported RQ1 were: (a) preparation for implementation, (b) specialty-specific training, and (c) hands-on practice.

Preparation for implementation. Participants described the process that took place to prepare for the implementation of the EHR and described several barriers to the overall process. Participant 1 stated that one of the barriers was that adequate time to plan for an effective implementation was not present – having more time would have helped to minimize the frustration level.

Some participants believed that different staff members were needed to ensure a smooth process for implementation of the education:

Participant 3: The change management was not widely accepted as it was communicated in a webinar to introduce the change from paper charts to EHR, however, I didn’t feel it was a sufficient process

Participant 5: Found the amount of information to learn was overwhelming and the lack of a quiet environment was not conducive to learning. He stated:

> The presentation itself to introduce the change to *athenaNet* was very thorough; however, it was also overwhelming. The amount of information given at one time was overwhelming, causing me to feel lost at times. The other issue was that there was a lot of talking and demonstrating related to the workflows.

Participant 7: The office manager attempted to provide additional education (e.g., history of EHR transitions from paper to EHR world) but that did not appear to be enough to fully prepare me for the overall changes that I experienced once we were live with *athenaNet.*

Participant 11: The correct people were not consulted to fully understand the training required to support a smooth transition from NextGen to *athenaNet*.

Specialty-specific training. Participants found the lack of specific specialty training frustrating and felt they needed more assistance with how to efficiently document information related to their specialty.

Participant 4: More time was needed to work out the kinks in the program. The training I received was not specific to my specialty of GI, but rather family medicine which did not fully help me to feel prepared for go-live.

Participant 7: The training was not specific to pediatrics; it wasn't until I was in *athenaNet* for some time before I realized I could create pediatric specific shortcuts to help me with documentation.

Participant 8: I have had exposure to multiple EHRs. I was perplexed to see that the training that I attended for *athenaNet* was not specific to surgery. This was a huge disadvantage for surgeons like myself.

Participant 9: Reviewing generic internal medicine examples does not help me when it is time to document on a patient that is in the operating room for a procedure.

Hands-on practice. The consensus amongst the participants was that additional hands-on opportunities would have been more beneficial prior to the start of the go-live implementation of *athenaNet*:

Participant 5: Additional hands-on were requested for future sessions but we were told there was no room in the timeline to approve the request.

Participant 6: I believed the training for the time allotted was somewhat beneficial. However, it wasn't until I was actually working in *athenaNet*, that I realized additional hands-on experiences would have made me feel more prepared; you don't know what you don't know until you are faced with the reality with a patient present.

Participant 8: I have used multiple EHR's but *athenaNet* is pretty intuitive which helped considerably. However, I think it also helped to have experience with other EHR's and I was able to compare the amount of hands-on scenarios – *athenaNet* provided far more less than others in my experience.

Participant 10: We needed more facilitated hands-on sessions. I don't think enough consideration was placed on this area for the physicians.

Research Question 2. There was a total of three themes that aligned with RQ2: What are physicians' recommendations for enhancing the educational process for quality documentation in EHR? The themes that supported RQ2 were: (a) Time Limitations on Completing Training, (b) Preparedness for EHR go-live, and (c) Additional Training Resources.

Time limitations on completing training. The physicians identified the time to complete the education as both a facilitator and a barrier. Though they were offered a total of 16 hours of training that required completion prior to the go-live; everyone did not complete all of the training, which itself is a contributing gap in the training. The training was delivered in a blended methodology that included prerequisite eLearning and classroom training.

> Participant 2: The eLearning modules were very glitchy which prevented me from completing the modules before my classroom training.
>
> Participant 5: I tend to focus more on patient care vs the training –
>
> Therefore, when the training is offered during patient hours, I tend to forego training and attempt to learn in an on-the-job training environment. There should be a more flexible training schedule to meet non-peak patient hours.
>
> Participant 8: Though I was scheduled for classroom training, I was not able to attend due to a patient emergency presented in my office. Make up sessions were very limited, I completed only the first part of the classroom training.

Participant 9: I received a call regarding one of my patients that required my immediate attention, I was not able to finish the in-class training, and there were no additional sessions available to attend training at a later date.

Participant 10: There was no time to complete the eLearning in my office; I would have had to complete it at home during off-hours.

When asked if there was a different platform in which training was offered, would training have been more realistic to complete,

Participant 9 responded: Yes – if there were more makeup sessions offered, it would have supported the reschedule process. Also – if the sessions were online that would have allowed me to complete the training at my own pace.

Preparedness for EHR go-live. Multiple participants discussed the state in which they believed a barrier was the lack of focus on ensuring the physicians were prepared to transition to the EHR before go-live.

Participant 1: The communication strategy from my office was not well thought out, I was finding out new workflows on the day of go-live that would have been helpful if I knew about them prior to go-live.

Participant 3: Demonstrated their discomfort with the preparation of the workflows and stated:

The representative selected to speak on behalf of my office, a multi-specialty division, did not have experience with the cardiology specialty. There should have been at least one representative for each specialty to represent our office effectively.

Additional training resources. Having access to additional training resources was the third theme that surfaced during the interviews.

> Participant 4: The procedures book that was located at the front desk within the office included multiple "how-to" documents. These documents were helpful, they showed only the steps needed to complete a process in *athenaNet*.
>
> Participant 11: Indicated that the Continuing Medical Education (CME) courses were a huge benefit; "the CME session on physician billing was a double bonus, I was able to receive credits to meet some of my CME requirements, and I learned some short cuts that can be used during the billing process."

When asked if there were opportunities to work with peer physicians to learn more about *athenaNet*, Participant 6 responded:

> I was impressed with the ability to create shortcuts. Seeing Dr. X [pseudonym] demonstrate shortcuts to me, helped me realize that I could jump around the system to meet my needs depending on the patient, I was able to get through an office visit a little better. For example, spending time creating the shortcut templates allowed me to finish my visits in the office instead of completing them at home as I was doing in the beginning of the implementation. The trial and error and the assistants of my peers helped me to get through the process.

When asked what opportunities, if any, would be recommended to enhance the education, Participant 7 stated:

> As a physician the key components of a patient visit require extensive notes at times or the orders are the same for the patients depending on the diagnoses.

Creating the shortcuts would be a great topic to offer as a prep and advanced course.

The participants were also asked what types of additional education modifications they would recommend now that they have been working in *athenaNet* for a while. The responses were as follows:

Participant 1: Offering the training at different times, in different methods at multiple locations would be helpful. The hands-on with an instructor available would seem to be the best way to train new content at it becomes available.

Participant 3: Online would be ideal as it makes it easily accessible, however, having a trainer walk you through helps when questions or uncertainty arise.

Participant 10: I think as new releases become available, having the option to do eLearning and/or having in-person sessions depending on the topic is the best way to approach additional training.

Phase 2: *athenaNet* Report

Phase 2 of the data collection focused on the reports retrieved from *athenaNet.* The focal points of the reports included the following: (a) total number of encounters (office visits) that were created within the first and last ninety (90) days of 2018; (b) number of closed encounters (office visits that were in a "closed" status in *athenaNet)* ; and (c) the number of days encounters remain open. The results of these reports demonstrated that more encounters were closed the same day during the last ninety days of the report timeframe. However, the encounters did not include as many meaningful use data elements in the patient charts that could have been completed. The evidence of this

report demonstrates that physicians were possibly more focused on increasing the number of office visits that could be closed on the same day as a patient's visit as opposed to ensuring that all of the meaningful data areas were completed with quality documentation. As such, offering advance courses to educate physicians on various tips and tricks to use within *athenaNet* to maximize quality data would prove to be beneficial for all involved, the patient, the primary care team, the organization, and any additional physicians that may access the patient's chart.

Overall, the report findings provided evidence that supported what the participants mentioned during their interview. For example, failure to learn quality documentation shortcuts caused some of the physicians to forego some of the data entry areas within a patient's chart, causing the chart to remain open beyond the recommended goal. The report also displayed evidence that those in specialties tended to have higher opened encounters compared to those in family medicine. This provided evidence that BH would more than likely benefit from offering additional specialty-specific training opportunities to close this gap. The report also provided evidence that supported the lack of preparation – for example, patient charts that were not fully complete with medications and previous diagnoses had more open encounters compared to those charts that were prepared prior to the *athenaNet* go-live. This evidence proves that more coordination on the front end is required to create a more cohesive patient record from the beginning.

Summary of Findings

Overall, the data collected from both Phases 1 and 2 provided evidence that BH is in need of some additional training to address barriers in the educational program for

EHR documentation. Barriers included: (a) lack of time to complete the training offered within the timeframe it was offered, (b) not enough hands-on scenarios to practice the new workflows within the EHR, (c) limited communication and/or engagement with the appropriate stakeholders during the preparation phase of the conversion, and (d) the want for additional training beyond the training that was provided during the implementation phase of the conversion. Additionally, the data provided evidential support for the need to create a strategy for the physicians at BH moving forward.

The findings of this study identified the physicians' perceptions of facilitators and barriers that affected how quality documentation was captured in *athenaNet*. Physicians' perceptions of barriers that impacted the training received in preparation for quality documentation in EHR included limited preparedness for the implementation, limited to almost nonexistent specialty-specific training, and minimal opportunities to put into practice what was learned with hands-on practice scenarios. The study also involved capturing physicians' recommendations on strategies they believed could be adopted to enhance the education protocols associated with quality documentation. These recommendations included offering a more diverse course catalog of training opportunities that would allow physicians to obtain CME credits, more eLearning with some sessions including a proctor or trainer to enable questions to be answered, and more diverse time slots during off-peak patient hours to accommodate physicians.

Findings from this study led to creating a project/initiative to effectively support the healthcare industry's ongoing changes. Additionally, physicians should now have a clearer vision of the expectations associated with the training required for evidence-based

success. These two elements will help to increase quality documentation within *athenaNet* and may help increase patient safety.

Evidence of Quality

The guidelines set in place in the methodology section of this research remained the focal point of gathering the data. The procedure of interviewing physicians based on the search criteria provided ample data that allowed for the data to be categorized into themes. As the data were collected from the interview, the transcription took place shortly thereafter. Upon completion of the transcription, the electronic file was sent to each participant to ensure the data were a true reflection of their responses during the interview. Dragon Naturally Speaking was a second resource used during the interviews for those who were willing to be recorded during the interview process. As physicians confirmed the accuracy of the transcribed data, the data were entered into a data analysis software that allowed for coding and the creation of themes. The triangulation methodology was also used during this study to ensure alignment with the data collected during the interview process (Thurmond, 2001). Multiple themes discovered during the analysis were in alignment with the data report within *athenaNet* which suggests that physicians are not using the software to the fullest quality.

Findings Related to Literature and Conceptual Framework

Based on the data collected from the physicians for this study, some, if not all, of the themes coincidentally were in alignment with some of the resources discussed during the literature review. Some of those themes that displayed support were as follows: Time Limitations on Completing Training, Preparedness for EHR go-live and Additional

Training Resources. For example, the concept of having a continuous training strategy, as suggested by Bredfeldt, Awad, Joseph, and Snyder (2013) is in alignment with the results of this study. Clarke, Belden, and Kim (2016) revealed that following up with physicians after some time for additional training encouraged a higher performance from physicians.

Additionally, Daniel, Reider, and Posnack (2013) suggested that ensuring the appropriate tools/resources are in place would display alignment with quality documentation in the EHR. Washington, DeSalvo, Mostashari, and Blumenthal (2017) provided evidence of the need to improve documentation within an EHR; providing additional training to physicians would be vital to supporting this concept.

In addition to the literature review, the conceptual framework for this study came from the vision of Knowles, Holton, and Swanson (2005), which noted the importance of adult learning and how it aligns with the theory and perceptions of adult learners. Knowles' adult learning theory that focuses on the andragogy concept was the conceptual framework for this study (Knowles, Holton, & Swanson, 2005): The data results supported four of the six principles that were outlined. Those principles consisted of the following:

- Need to Know – Adult learners need to understand the why associated with the new concepts that are being educated.
- Self-Concept – Adult learners are self-sufficient and believe they are successful at being self-directed.
- Experience – There is a need to relate relevant examples for adult learners.
- Orientation to Learning – Incorporating problem-centered information that will support resolutions.

Summary

The participants in this study appeared eager to speak with me about their diverse experiences. The thought of possibly having someone put an education resolution in place appeared to be a high priority topic that almost all participants were interested in seeing in the near future. Using the qualitative case study methodology in the form of semi-structured interviews, I was able to collect data that identified facilitators and barriers as seen by physicians related to education for EHRs.

The outcomes demonstrated that facilitators in the eyes of the physicians were job aids and education resources, and previous experiences in EHRs. The barriers included lack of detailed specialty-specific training, limited time to complete the recommended education, and limited engagement with the appropriate resources during the preparation of the implementation planning process.

There was also evidence of barriers that were revealed in the reports that were obtained through *athenaNet*. For example, although more office visit encounters were closed in the last 90 days of 2018, they lacked quality documentation. However, it is

believed that if physicians completed all training that focused on their respected specialties, in addition to receiving additional supporting education resources, that the office visit encounters would have included quality documentation.

Based on the results of the data collected, I believe that the creation of a policy project would assist with the gaps in the educational process exposed during this study. Gaps included the lack of a robust course offering, the methodology in which the education is being offered, and the time in which the training opportunities are offered.

As such, my goal was to create a continuing education white paper as the main deliverable in response to the outcome of the research analysis. Upon completion of the creation of the white paper, the intent will be to distribute the document to the senior leadership at BH for consideration and inclusion in future EHR training.

Section 3: The Project

Introduction

In a world where technology is steadily growing, users must learn to adapt and adjust to technological changes to remain steadfast in their professions. In the case of this study of EHRs, providers and supporting staff must be willing to acquire the education and training needed to meet healthcare-related industry standards. Maintaining an accurate electronic patient record is just one of many examples of the evolution of technology and the training needed to execute such a task. To assist BH with its current training gap for physicians, a white paper was needed to present the evidence obtained during the research project. The goals of the white paper were to

- Present evidence from the study that supported the need to create a robust course catalog with advance course offerings
- Provide stakeholders with a recommendation on the learning resources required to carry out the suggested education methodologies
- Identify a communication and support plan recommended for senior leadership at BH to successfully implement the proposed education for the physician community.

The white paper will provide BH with detailed to incorporate into the existing training strategy. For example, physicians will be able to participate in an effective hands-on education session, with a facilitator, while practicing specialty-specific scenarios in the EHR. There will also be an opportunity to earn CME credits by participating in the advanced training offerings provided by BH. Thus, the white paper

would benefit the physicians, the rest of the care team (nurse, medical assistant, and any additional clinician), and the patients themselves.

Rationale for the White Paper

A curriculum project was considered for this research; however, due to the limited availability of the physicians, a curriculum project was not feasible or realistic for this environment. Thus, a position paper, in the form of a white paper, was chosen as the most suitable and realistic project choice. This genre allowed the leadership team and stakeholders to make decisions quickly about how to implement changes for the better of the physicians.

The white paper is supportive of the results documented for this project, specifically, RQ2. When participants were asked what could help them be more successful, the following responses were common: hands-on workshops, advanced training sessions, and live webinars (to share the latest tips for effective use of the software). Such tips would increase the level of quality documentation entered into the EHR by the physicians. The details surrounding the planning and execution of offering hands-on workshops, advanced training sessions, and live webinars have been identified in the white paper. The existing training team with a potential of adding a part-time resource would be leveraged to carry out the tasks recommended in the white paper. These solutions addressed the barriers identified by the physician community for this study. Patients' charts would include comprehensive and inclusive documentation leading to all-around quality care regardless of the physician's office that he/she is seen. The

offering of CME courses was also a common theme amongst the participants that would prove to be a resourceful tool with multi-purpose benefits.

Review of the Literature

In an effort to fully understand the impact of a policy project recommendation, which from this point forward will be referenced as a white paper, I researched multiple studies that used a white paper to support a strong position and/or recommendations. Such recommendations are intended to serve as a potential solution to the social issues that were discovered during the course of this study. The following databases were used: ERIC, SAGE, ProQuest, EBSCO, MEDLINE and CINAHL Plus. Key terms that revealed the literature review research for a white paper were as follows: *white paper , definition of a white paper, purpose of white paper, benefits of a white paper*, *evaluation process with a white paper, policy projects – qualitative research, training, electronic health records – training policy physicians, physicians' facilitators and barriers with policies, physicians – policy for advanced training, policy effectiveness in electronic health record training, EHR policy impact on patients, and physician resistance to EHR training policy.* Themes were developed to support a clean and concise method for understanding the results of the research conducted. The themes are as follows: (a) White Paper Purpose (b) White Paper Benefits, (c) Physicians' Perceptions Related to Training, and (d) Training Opportunities to Enhance EHR Productivity.

White Paper Purpose

White papers are leveraged to market a new solution and recommendations to a problem that has been identified, in which a gap exists (Beger et al., 2016). They are also

used as a way of disseminating a new technological process to combat a new or improved process documented thoroughly by way of a white paper (Malone & Wright, 2018). The purpose of a whiter paper is to present a definition of a topic to include components such as the scope, purpose, training, etc., that support the identified topic (Chyu et al., 2015). Parsi and Darling-Hammond (2015) subscribed to the concept that a white paper is used to address thorny issues with sustainable and reliable solutions. Hassel et al. (2015) believed that a white paper can serve in the capacity of providing an overview of issues married with recommendations to address the issues presented.

White Paper Benefits

The use of a white paper provides a path forward to address an industry-wide change that has a positive outcome (Kuhn, Basch, Barr, & Yackel, 2015). Tisherman et al. (2018) revealed that making changes to the training pattern will benefit both the clinician and the patient. A benefit of the white paper is that it provides clinicians a template to support patient care (Dening, Sampson, & Vries, 2019; Heart, Ben-Assuli, & Shabtai, 2017). A key benefit of leveraging a white paper is the introduction to new concepts that can assist with increasing "workplace cohesion" (Zhu, 2017). A white paper provides a platform to allow for multiple concepts to be explored in a sequential and series-phased approach. For example, Roth, Lannum, and Persons (2016) introduced Enterprise Imagining to augment the EHR with the goal in mind to create additional white papers to support the expansion of the concept. Hanen, Kechaou, and Ayed (2016) introduced and promoted the concept of mobile cloud computing (MCC) in healthcare using the white paper approach; the engagement level was increased due to having the

white paper as opposed to a detailed dissertation. Creating a policy to address issues related to implementations of EHRs turned into resources that were leveraged to support the policies to address performance gaps (Liou, Lu, Hu, Cheng, & Chuang, 2017). The common theme amongst all of the studies that used white papers was that people were more inclined to engage in a shorter document that provided the details as opposed to a full dissertation report.

Physicians' Perceptions of Training

Aldridge et al. (2015) conducted a study to determine physicians' barriers related to EHR training; the conclusion exposed inadequate training with a perception of requiring a greater need for additional education. A study conducted by physicians demonstrated their perceptions on the best way to train clinicians, which includes web-based and class-room education (Dastagir et al., 2012). McGuire (2019), doctor at Johns Hopkins, determined that offering additional education beyond the standard pre-implementation training increases engagement from physicians and enhances the quality of documentation in EHR systems. Physicians reported a considerable improvement in navigating through EHRs and increased knowledge due to additional EHR training opportunities (DiAngi, Stevens, Halpern-Felsher, Pageler, & Lee, 2019). Increasing the sustainability of physicians in support of caring for patients and placing that documentation into an EHR requires high quality advanced training (Stammen, Stalmeijer, & Paternotte, 2015). Physicians experience burnout when they lack the knowledge to thoroughly navigate through an EHR; thus, having auspicious training to

support the needs of the physicians has established evidence of a breakthrough amongst the physician community (Ehrenfeld & Wanderer, 2018; Shanafelt et al., 2016).

Training Opportunities to Enhance EHR Productivity

Stroup, Sanders, Bernstein, Scherzer, and Pachter (2017) justified the hands-on training methodology along with support as a significant benefit to physicians documenting patient care within an EHR. Investing in quality EHR training proves to be beneficial to all parties involved; however, the health care organization must be open to investing the time, resources, and financial requirements to support an enhanced education strategy (Longhurst et al., 2019). James et al. (2018) created a solution based on study results that warranted enhanced training whose goals were to "increase skills, knowledge and confidence" amongst the physician population. Stevens et al. (2017) realized the gaps and physician dissatisfaction related to EHR training; a study provided results that encouraged a redesign of the education to enhance physician efficiency. Va Galen et al. (2018) investigated the need for critical training to support the expansion of telehealth patient care, and the results demonstrated the need to continuously offer education to support the growing needs of health care. While Baker, Charlebois, Lopatka, Moineau, & Zelmer (2016) acknowledged that heath care education does not require educators to start from ground zero. It would, however, benefit from considering creative ideas to improve the efficiency of the education that is delivered.

Literature Review Summary

The results of the data, along with the literary review, served as the driving forces that birthed the concept of developing a white paper as a solution for BH's physician

community. Burn out, lack of knowledge, limited and inadequate training all denote barriers that need to be addressed by developing a training solution to close the gaps in those areas. Ehrenfeld and Wanderer (2018) emphasized that having adequate training leads to a productive physician community when it comes to EHRs.

Project Description

The purpose of developing a continuing education white paper for BH is to address the concerns that physicians presented during the data gathering phase of this study. Training concerns identified were as follows: lack of specialty-specific training, limited hands-on exercises, time constraints to complete training, and additional training resources that expanded beyond the initial training received during the implementation phase. As such, this white paper will serve as a guide to support physicians as they have access to obtain additional training in the future. The education will be provided in multiple platforms to embody all learning styles that may be present within BH. These platforms will consist of the following: a) WebEx sessions, b) independent workshops, c) eLearning modules, and d) training resource materials. As such, specific resources are recommended to bring the white paper to fruition.

Optimal Resources

There are several resources recommended to ensure a successful implementation of the continuing education white paper policy for BH. Included in such resources would be as follows: *(a) facilitator or preceptor*, *(b) classroom, (c) instructional designer, (d) training resource materials, and (e) learning management* system. Below are the definitions for each resource listed above:

- Facilitator/Preceptor – A knowledgeable resource that has at least two years' experience working intimately with *athenaNet*, in addition to being knowledgeable about the physician workflows used to document quality patient care.
- Classroom – Environment and/or location that can be used to provide instructional lessons to all participants. This space would also be used for independent study.
- Instructional Designer – A resource that can create and/or modify eLearning modules for the physician community.
- Training Resource Materials – Education products used to assist physicians with fulfilling documentation requirements within *athenaNet*.
- Learning Management System (LMS)– Software used to track, evaluate, and manage all learning outputs in addition to listing all course offerings for all participants.

Multiple Learning Styles

Galbraith (2004) is one of many that subscribes to the concept of offering multiple learning methods to address the diverse learning styles within the adult population. Given this, it would be a massive service to BH to offer multiple platforms of learning opportunities to show both the support and the flexibility to provide the physician community what is needed. To support the resources above, it is recommended that BH offer the following methods of continuing education; (a) live WebEx sessions,

(b) independent workshops, (c) eLearning modules and (d) training resource materials (e.g., job aids, cue cards, etc.). All methods should incur a regular cadence of offerings.

WebEx Sessions*:* It is recommended that the WebEx sessions are offered on a monthly base to include topics that require a live facilitator to explain/demonstrate the nuances of the topic at hand. These sessions should be offered in the existing LMS, HealthStream, as most if not all physicians have access to HealthStream. Included in the course offering would be the description of the course, in addition to the scheduled date of the course offering(s). Physicians would be required to enroll in each course that he/she plans to attend. This allows for senior leadership to manage their resources appropriately – if there are not participants enrolled in the course, the session may be canceled. It is also recommended that each live WebEx session is recorded to allow physicians to access the course after the live offering. This approach ensures that the course is readily available for any physician seeking to complete the education.

Independent Workshops: It is recommended that an independent workshop is offered during times when new functionality within *athenaNet* becomes available, that does not qualify for a full training session. The sessions should be inclusive of a facilitator/preceptor that would serve as a resource; in the event, physicians have questions regarding the new functionality. Such sessions should be offered at a minimum of one week during the implementation of the new functionality. The hours should not exceed four per day to support maximizing the resources that would manage such sessions. During these sessions, physicians will have the opportunity to have interactive, hands-on experiences with the new functionality outside of the exam rooms. Having

limited distractions would allow the physicians to capitalize on the time spent learning the new functionality.

eLearning Modules: Having the ability to complete a course during the times that coincide with a schedule as a physician would be beneficial. It is recommended that the eLearning modules are created by instructional designers to fortify the content as intuitive and interactive. It is required to maintain the interest of the physicians, in addition to providing a fruitful and meaningful education session. Offering eLearning modules on the LMS provides the flexibility to the physicians to start and stop the modules as needed until completion.

Training Resource Materials: Evidence shows that creating job aids, cue cards, etc., to display new functionality, policies, procedures, and best practices for EHRs are beneficial. It is recommended that these types of materials are offered to support live WebEx sessions, independent workshops, eLearning modules, and miscellaneous functionality that is implemented in *athenaNet*. Taking this course of action will provide a supplement to the training methodologies used in addition to offering a robust list of continuing education.

Roles and Responsibilities of Senior Leadership: The leadership at BH serve as the most intrinsic element of the continuing education white paper. Leadership would need to be in a position to communicate the new initiative to the physician society, support staff and operations, the concept of the white paper. Furthermore, leadership would need to create/provide the resources needed to source the various elements of the proposed white paper. This may include creating a new budget for a part-time resource to

provide the education, expanding the roles of the existing training team, potentially soliciting additional current employee volunteers that have the experiences, and possibly providing an incentive of some sort to show the commitment and appreciation of the program and resources.

Fruition of the Continuing Education White Paper

I have designed the white paper to help ensure that it is used to its maximum potential to ensure that recommendations come to fruition. As such, it should be noteworthy that roles and responsibilities outside of leadership were identified, the financial resources required, potential barriers matched with recommended solutions to counteract such barriers were identified, along with the suggested time line to carry out the white paper. Identifying the above provided BH with all of the required information to ensure successful implementation of the continuing education white paper.

Additional Roles and Responsibilities

BH has an established training team that consists of 4 trainers that are managed by operations leadership. These trainers provided the education for the implementation courses that were previously offered. As such, they are familiar with the product that is being delivered and will serve as good candidates to provide the continuing education associated with the white paper. Leveraging the current training team allows BH to move quickly with the installation of the white paper due to their current experiences.

The Office Manager (OM), would be an essential stakeholder for the white paper, as he/she would need to ensure transparent communication is delivered to his/her staff. The OM would also be an important candidate to show support of the white paper by

marketing the optional education resources that are being offered. Additionally, the OM would be in a position to manage the physician schedule to allow time to complete the advanced education that is being offered as a result of the continuing education white paper. Lastly, the OM currently meets with the leadership and operations at BH – this avenue allows the OM to bring any feedback or suggestions to the group for potential implementation or modifications as needed.

Successfully implementing the continuing education white paper will support the physician community and the patients in which they are treating. As a source to ensure success, I would plan to be present during the initial phase of the implementation of the continuing education white paper. I would serve as a consulting resource to assist when needed to clarify how to carry out tasks as noted in the white paper. My services will be available to BH for a total of 2 weeks. Upon completion of the 2 weeks, BH's leadership team would have the ability to contact me via email and/or phone should additional clarity regarding the continuing education white paper be needed.

Financial Resources

During the creation of the white paper, finances were strongly considered to limit the strain that may come with new initiatives. Considering that BH was already in position with an established training team, curriculum and foundation, it was beneficial to leverage the current resources. Using existing resources limits the need for an abundant amount of financial resources. However, if BH were to consider the recommendation of adding a part-time employee, there would be the need to consider the financial impact that this resource could have to the operations budget of BH. In the event that finances do

not support hiring a part-time resource, BH would be able to move forward with the existing staff in place, the sessions offered would need to be scaled back; however, it would still prove to be a positive solution to support the physician community.

Potential Barriers for the Continuing Education White Paper

Identifying potential barriers in advance allows one to streamline the process to avoid negative impacts to the project (Scantlebury et al., 2017). The white paper requires attention from all stakeholders, which includes the Director of Operations, Office Managers, Training Team, and the President of Physician Services. Without the approval of the stakeholders, the solution will fail. However, it is believed that the stakeholders will welcome the majority if not all of the white paper proposal due to their knowledge of the current gaps that exists in the physician community related to quality documentation in the EHR. In instances where the stakeholders are not in agreement with areas of the white paper, a discussion followed by voting will take place to ensure all are in agreement with how to move forward with the white paper and its implementation.

Providing the physicians with open office hours to complete the advance training could be a potential barrier. Keeping this in mind, the offering of the education in multiple platforms will address this barrier. Physicians will have the ability to access eLearning and recorded WebEx sessions during times that agree with their schedule. The barrier attached to independent workshops would be the cadence in which the sessions are offered. The number of sessions and the sequence of these course offerings are dependent upon having a facilitator in the session, readily available to answer questions as they arise. To counteract this potential barrier, it is suggested that a minimal, one

session is offered quarterly; as this would allow for leadership to plan accordingly to ensure a facilitator is present during the independent work sessions.

Implementation of White Paper Timeline

As with any implementation, there comes the concept of the time required to carry out the tasks. The goal is to begin implementation of the white paper within 30-90 days of gaining Walden University's approval of the overall project. Once approval is received, a meeting will be scheduled with the stakeholders at BH to discuss the project. The white paper will be sent to the stakeholders for review as a prerequisite to the meeting, to ensure all questions/concerns are formulated and addressed during the meeting. The purpose of the meeting which will take place within the 30-90-day timeframe is to present the focal points of the white paper to allow for discussion about the topics that raise concern for BH. There will be a subsequent meeting that will take place between 90-180 days of the initial meeting which will provide a platform for the stakeholders to discuss the progress of the white paper with potential modifications if needed. All of the timeframes are estimates based on the reality of the schedules of the stakeholders.

Project Evaluation Plan

As with any education/training, comes the need to incorporate an evaluation process. The evaluation will take on a multi-facet approach that is inclusive of goal-oriented, formative, and summative evaluation methodologies. Evaluating the program goals will provide a benchmark of success and allow the project to be measured based on the outcomes of the white paper (Caffarella & Daffron, 2013). Nieveen and Folmer

(2013) encouraged using the targeted group to perform the formative evaluation, as opposed to the researcher, to fully understand their experiences. This approach also limits the researcher from providing a bias objective toward the outcome of the evaluations. As such, the stakeholders will be leveraged to perform the evaluation of the white paper followed by providing the researcher with the results.

The use of the summative evaluation (See Appendix E) approach will be submitted to the stakeholders at BH upon completion of presenting the white paper. The purpose of the summative evaluation is to ensure all components of the white paper are carefully reviewed to evaluate the success of BH's physician community.

Project Implications

The purpose of the white paper is to provide an introductory solution to the gaps that currently exist within the physician community as it relates to *athenaNet*. The common theme that surfaced throughout the data gathering was the lack of education and support post-implementation. The white paper will serve as a resource to address the concerns and provide the start to future discussions that will occur that focuses on the impact of the physician community.

The results of the continuing education methodologies have the potential to expose the need for additional resources. Identifying additional resources would come about through the evaluation of the various methods offered. As such, it is recommended that BH begin a traditional cadence of meeting at a minimum, quarterly, to keep training at the forefront of the physician community. This approach will promote a decreased amount of patient safety risks and increased physician support.

The results of the white paper will provide a platform to have continual focus and conversations related to the success of *athenaNet* or any other EHR that may be used in the future. The stakeholders at BH, along with the senior leadership will have ample opportunities to expand on the continuing education white paper to benefit the organization as a whole. There may be a need for a future study to determine the best way to enhance the productivity of quality documentation.

Social Change Implications

Successful implementation of the white paper will set a standard and provide the groundwork for changes to come. The impact of this white paper has the potential to show steady improvement amongst the physician community as it relates to entering quality documentation in an EHR. This would be sure to demonstrate the positive impact on all parties involved. As the stakeholders are armed with the background and the results of the study, they will be positioned to support the physicians as they are providing and documenting quality patient care. Physicians will be armed with the appropriate training required to successfully document quality patient treatment plans; providing the physician community with a platform to support the ability to focus on delivering patient care. The impact on the patient would be extremely significant as they will have an intuitive quality patient record that can be used by any physician and his/her support staff.

Section 4: Reflections and Conclusions

Project Strengths and Limitations

The continuing education white paper for physicians will embody the request for additional learning opportunities. Galbraith (2004) suggested that adults tend to be super learners during times when problem-centered orientation is presented during the learning. Such opportunities will be sure to increase the level of quality documentation that is entered into *athenaNet* by physicians. Physicians will have more resources readily available to support the work that they are completing in *athenaNet* while seeing patients at BH.

Additionally, BH will be able to meet both minimum and advanced expectations that are both mandated and regulated by CMS. Lastly, patient safety issues and risk attached to the lack of quality documentation will be sure to decrease. This white paper would serve as a positive solution for all parties involved.

However, the continuing education white paper will come with limitations, for example, the ability to identify resources such as facilitators/preceptors, instructional designers, and a resource to manage the LMS may develop slight barriers. Currently, BH has resources onsite in all three capacities mentioned above; however, they may not be available to take on additional tasks to offer such training resources for the physician community. It would be in the best interest of BH to consider dedicating half of a resource to ensure that continuing education is available.

Another limitation that may surface would be the topics that are covered during continuing education sessions. Failure to offer topics that support the latest trends in

athenaNet amongst the physician community could result in limited participation. However, to counteract this limitation, senior leadership, along with appointed staff, would be encouraged to continuously communicate with the physician community to identify key topics to be discussed during the continuing education sessions. A robust course catalog could increase participation and welcome the additional training resources.

In an effort to support a robust course offering and a high participation rate, physicians will be offered Continuing Medical Education (CME) credits for the completion of courses where applicable. The CME incentive is exceptionally beneficial to physicians due to their need to complete a certain number of CME hours per year in support of their medical licenses. In some states, the CME requirement is as high as 100 hours (boardvitals.com). Thus, having a robust physician course catalog will assist with obtaining the mandated education for physicians.

Recommendations for Alternative Approaches

As part of a larger organization, BH has access to a networking community that may be contacted to potentially use a portion of the training resources that have been previously created. This alternative, while not perfect, will provide some relief for the physician community and allow them to receive the continuing education requested. *athenaNet* is yet another avenue that could be used for the training materials that were developed by the vendor. This would allow BH to start with a product base that could be tailored to meet their needs. Taking either or both approaches would lessen the number of hours needed to develop the content for the continuing education courses.

Understanding that limitations may present a barrier, one of the alternative approaches would be to lessen the cadence in which the additional resources are offered to the physician community. While having the education opportunities more frequently would be ideal, the physicians would continuously be in a position to capitalize on the continuing education as there is currently no policy or procedure in place to support the physician's concerns related to education.

Scholarship, Project Development and Evaluation, and Leadership and Change

The concept of scholarship, development, leadership, and change were all defined throughout the doctoral process. Thoroughly understanding the impact of scholarly peer-reviewed articles set the tone for the study. Having access to scholarly databases that included but were not limited to ERIC, SAGE, ProQuest, EBSCO, MEDLINE and CINAHL Plus, provided direct support to the problem at hand. The evidence of this social problem was clear to me by way of reviewing the available scholarly articles.

Ensuring personal biases were not included in the study, a scholarly approach to validate things such as the research questions, the social impact, and the literature review. Additionally, the assigned doctoral committee has been extremely instrumental in guiding me in the right direction to create a robust and cohesive scholarly study. It is with great belief that their guidance, input, and recommendations have made this study both intuitive and scholarly based on Walden University's standards.

The development of the project was generated based on the results of the data collected. There were real concerns that were discussed during the data-gathering phase

that required a proposal of a solution. Caffarella and Daffron (2013) suggested that program goals and objectives shape the foci of a training program. Taking this approach to develop the continuing education white paper served as a guide to promote a focus that meets the needs of BH. The project that was developed was based on the time limitations of BH's physicians and the research of physician training programs and policies that have displayed evidence of success. Considering that EHRs are widely used throughout the world, the evidence of policies and programs that were successful post-implementation served as an introduction to the continuing education white paper designed for BH.

As with any education and training, the evaluation component is critical. The defined program goals and objectives will be extremely crucial during the evaluation component when the time is presented (Caffarella & Daffron, 2013). The program goals will provide answers as to the purpose of the development of the white paper, the training methodologies, and the projected outcome. An understanding of the transfer of knowledge that has occurred assists senior leadership and educators in making the appropriate adjustments as needed. The adjustments will promote constant growth in the continuing education program for BH.

Being in education leadership in the healthcare industry has provided me with experiences beyond measure that were challenged throughout this study. Developing a white paper to support the needs of the physicians at BH was presented with some challenges due to the time restrictions related to the availability and resources. However, it is with great belief that continuing education will promote a strong introduction to training that can support the physicians at BH in a positive manner. The effectiveness of

this white paper is based on the senior leadership's ability to communicate and market the resources that were developed to support the physicians. Though this is an introduction, it has the potential to serve as a strong foundation for so long as the leadership and stakeholders hones in on the success of the outcomes that are warranted based on the education methodologies that were selected. Such methodologies are diverse in their offerings in an effort to accommodate all learning styles along with supporting flexibility of the availability of the physician community.

Though I am not an employee at BH, I have been a practitioner in health care education for over 10 years; extensive research of any sort has never been a requirement of any of my positions throughout the duration of my career. However, this project has challenged me to think beyond the unknowns in a way that would increase my knowledge of the foundation of education and all of its components. In my current role and based on my experiences/level of expertise, I am in constant discussions surrounding my thoughts on the best approach to address a training initiative to support organization wide initiatives and goals. Understanding physicians' frustrations related to training has helped me to be more strategic and thoughtful regarding the education recommendations that I have provided since the beginning of the research and continue to provide in the future. I look forward to embarking on additional research in the future to continuously support the focused groups in which I am supporting.

Reflection on Importance of the Work

As I begin to reflect on the study, the outcome, and the continuing education white paper as the solution, I am ecstatic at the possibility of bringing in a positive

solution to BH. Multiple components are at risk by doing nothing based on the results of the study. For example, physicians will not have a full clear quality patient record in *athenaNet*, and most importantly, patient safety risks will continue to grow which could lead to severe devastation. By creating the white paper, BH will have a strategy that can evolve tremendously with the correct support and effort. As the healthcare industry continuously evolves with state-of-the-art technology and policies, BH will be placed in a position that will allow them to embrace the changes head-on

Implications, Applications, and Directions for Future Research

As BH implements the proposed white paper, there will be opportunities to broaden the scope of continuing education to allow for additional solutions. For example, the white paper could serve as a model for EHR systems that may be used to replace *athenaNet* in the future. Upon completion of Phase 1 of the continuing education white paper, BH is to be encouraged to conduct a supplementary study to see how additional training resources can be used to support the efforts and success of the physician population. There may also be an opportunity to expand the research to gain a better understanding of the support staff of the physicians. Though the purposes of this study focused on the physician community, there is a need to provide the same level of support to the medical care teams such as the medical assistant, nurse, therapist etc., that are involved in providing and documenting quality patient care.

BH is strongly encouraged to, at a minimum, conduct a survey after the implementation of the continuing education white paper. It is also recommended that once the physician community is solid with the continuing education supported, the focus

expands to the nursing community as the next phase. This is recommended due to nurses having the ability to have nurse only visits with patients. In these cases, patients are not required to be evaluated by a physician. In these cases, it would strongly benefit BH to ensure the nursing community has all of the required training and support needed to mirror the physicians in quality EHR documentation.

Conclusion

Due to my experiences with the constant changes that occur in the healthcare industry, I am in the firm belief that there is always going to be an opportunity to increase the functionality and usage of EHRs. The evolution of patient care will be at an all-time high and will require consistent flexibility to welcome and embody the changes. Such changes will prove to be monumental for BH as they would have already begun to strategize various processes to support the social changes that will come in the future. The overall goal was to conduct a study to address the gaps that were identified in the physician population as it relates to quality documentation at BH. The results of this study demonstrated the need to provide additional education and support for the physicians. As such, the continuing education white paper was defined and created to anchor the solution to support the physician community. This support expands to the BH as a whole in addition to its patients, as it will increase the level of quality documentation entered into *athenaNet*, as well as decrease patients from being exposed to potential patient safety risks related to the lack of quality documentation.

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Appendix A: The Project

Physicians' Continuing Education for Electronic Health Record Training

A White Paper

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Executive Summary

The local problem that has been identified at BH focused on the gap that is present in the physician community at it relates to entering quality documentation in the EHR. A study was conducted to determine the facilitators and barriers related to the education received in preparation of transitioning from one EHR application to a new EHR application. The study also focused on understanding physicians' perceptions of what support would include to increase the level of quality documentation that is entered into the EHR. Results of the study demonstrated that physicians felt the training was not fully adequate to prepare for the transition in the timeframe offered. Physicians provided recommendations on what support could be offered to assist the physician community. With the physicians 'recommendations in mind, a white paper was developed to provide training recommendations that would potentially meet the needs of the physician community.

Physicians' Continuing Education for Electronic Health Record Training

A White Paper

Background of Existing Problem

Alpha Health (AH; pseudonym), a healthcare organization located in the western region of the United States, has been identified as needing a solution to problems with physician documentation of patient care within *athenaNet*, a cloud-based Electronic Health Record (EHR). AH serves as the parent company for over 80 healthcare organizations that are within their network. Beta Health (BH; pseudonym), located in the northeastern region of the United States, is one of the healthcare organizations that is affiliated with AH. BH is responsible for both establishing and leading its day-to-day oversight of documentation in *athenaNet*.

BH demonstrated gaps in their physician training that resulted in errors such as delayed entries, office visits delayed from being completed in *athenaNet*, failure to note possible medication interaction risk, and placement of duplicate orders (Meaningful Use Report, 2016). Evidence of these gaps were also supported by comments made during informal discussions with the director of the informatics team. Comments include but are not limited to physicians lacking the ability to demonstrate in *athenaNet* the details of a full patient visit (BH Director of Informatics; personal communication, February 18, 2016).

The Research Study

A study was conducted in an effort to manage the training gap previously mentioned. The goal of the study was to identify the gaps in the training for physicians

with hopes of providing a recommendation to minimize such gaps. The research used a case study methodology to analyze data from semi-structured interviews and data reports from *athenaNet*. Upon receiving approval to move forward with the research study, a total of 11 physicians participated in a qualitative research study that focused on "Physicians' Perceptions of Facilitators and Barriers in Electronic Health Record Education."

The research questions that served as the focal point of the study were as follows:

RQ1: What are physicians' perceptions of facilitators and barriers that impact the training received in preparation for quality documentation in EHR?

RQ2: What are physicians' recommendations for enhancing the educational process for quality documentation in EHR?

Research Study Results

Upon completion of gathering the data followed by organizing it in a data analysis software (QDA Miner), the results presented evidence of the training gaps for physicians which included: (a) lack of time to complete the training offered within the timeframe it was offered, (b) not enough hands-on scenarios to practice the new workflows within the EHR, (c) limited communication and/or engagement with the appropriate stakeholders during the preparation phase of the conversion, and (d) the want for additional training beyond the training that was provided during the implementation phase of the conversion. Additionally, the findings from the data provided evidential support of the need to create a more advanced and cohesive training strategy for the physicians at BH. Based on the

outcome of the results, a literature review was conducted to get a better understanding of the best recommendation to offer BH to counteract the concerns that were exposed during the research.

Literature Review

White papers are leveraged to market a new solution and recommendations to a problem that has been identified, in which a gap exists (Beger et al., 2016). They are also used as a way of disseminating a new technological process to combat a new or improved process documented thoroughly by way of a white paper (Malone & Wright, 2018). The purpose of a whiter paper is to present a definition of a topic to include components such as the scope, purpose, training, etc., that support the identified topic (Chyu. et al., 2015). Parsi and Darling-Hammond (2015) subscribed to the concept that a white paper is used to address thorny issues with sustainable and reliable solutions. Hassel et al. (2015) believed that a white paper can serve in the capacity of providing an overview of issues married with recommendations to address the issues presented.

White Paper Benefits

The use of a white paper provides a path forward to address an industry-wide change that has a positive outcome (Kuhn, Basch, Barr, & Yackel, 2015). Tisherman et al. (2018) revealed that making changes to the training pattern will benefit both the clinician and the patient. A benefit of the white paper is that it provides clinicians a template to support patient care (Dening, Sampson, & Vries, 2019; Heart, Ben-Assuli, & Shabtai, 2017). A key benefit of leveraging a white paper is the introduction to new concepts that can assist with increasing “workplace cohesion” (Zhu, 2017).

A white paper provides a platform to allow for multiple concepts to be explored in a sequential and series- phased approach. For example, Roth, Lannum, and Persons (2016) introduced Enterprise Imagining to augment the EHR with the goal in mind to create additional white papers to support the expansion of the concept. Hanen, Kechaou, and Ayed (2016) introduced and promoted the concept of mobile cloud computing (MCC) in healthcare using the white paper approach; the engagement level was increased due to having the white paper as opposed to a detailed dissertation. Creating a policy to address issues related to implementations of EHRs turned into resources that were leveraged to support the policies to address performance gaps (Liou, Lu, Hu, Cheng, & Chuang, 2017). The common theme amongst all of the studies that used white papers was that people were more inclined to engage in a shorter document that provided the details as opposed to a full dissertation report.

Physicians' Perceptions Related to Training

Aldridge et al. (2015) conducted a study to determine physicians' barriers related to EHR training; the conclusion exposed inadequate training with a perception of requiring a greater need for additional education. A study conducted by physicians demonstrated their perceptions on the best way to train clinicians, which includes web-based and class-room education (Dastagir et al., 2012). McGuire (2019), doctor at Johns Hopkins, determined that offering additional education beyond the standard pre-implementation training increases engagement from physicians and enhances the quality of documentation in EHR systems. Physicians reported a considerable improvement in navigating through EHRs and increased knowledge due to additional EHR training

opportunities (DiAngi, Stevens, Halpern-Felsher, Pageler, & Lee, 2019).

Increasing the sustainability of physicians in support of caring for patients and placing that documentation into an EHR requires high quality advanced training (Stammen, Stalmeijer, & Paternotte, 2015). Physicians experience burnout when they lack the knowledge to thoroughly navigate through an EHR; thus, having auspicious training to support the needs of the physicians has established evidence of a breakthrough amongst the physician community (Ehrenfeld & Wanderer, 2018; Shanafelt et al., 2016).

Training Opportunities to Enhance EHR Productivity

Stroup, Sanders, Bernstein, Scherzer, and Pachter (2017) justified the hands-on training methodology along with support as a significant benefit to physicians documenting patient care within an EHR. Investing in quality EHR training proves to be beneficial to all parties involved; however, the health care organization must be open to investing the time, resources, and financial requirements to support an enhanced education strategy (Longhurst et al., 2019). James et al. (2018) created a solution based on study results that warranted enhanced training whose goals were to "increase skills, knowledge and confidence" amongst the physician population. Stevens et al. (2017) realized the gaps and physician dissatisfaction related to EHR training; a study provided results that encouraged a redesign of the education to enhance physician efficiency. Van Galen et al. (2018) investigated the need for critical training to support the expansion of telehealth patient care, and the results demonstrated the need to continuously offer education to support the growing needs of health care. While Baker, Charlebois, Lopatka, Moineau, & Zelmer (2016) acknowledged that heath care education does not require

educators to start from ground zero, it would, however, benefit from considering creative ideas to improve the efficiency of the education that is delivered.

Recommended Solutions

While exploring physicians' percepctions of facilatators and barriers related to EHR education, physcians demonstrated their willingness to complete patient charts more effectively in an EHR if the training is accessable. Maintaining an accurate electronic patient record is just one of many solutions to address the evolution of technology and the training needed to execute such a task. To ensure alignment with the evidence presented during the research study related to the training gap for physicians, a continuing education white paper was created. The white paper will be supportive of the physician community in a way that would prove to be beneficial to the physicians, the entire care team for a patient and the patients themselves.

Continuing Education for Physicians

The continuing education for physicians described in this white paper will serve as a guide to support physicians as they have access to obtain additional training in the future. The education will be provided in multiple platforms to embody all learning styles that may be present within BH. These platforms will consist of the following: a) WebEx sessions, b) independent workshops, c) eLearning modules, and d) training resource materials. As such, specific resources are recommended to bring such policy to fruition. There will also be barriers along with roles and responsibilities that are attached to the white paper.

With the support of senior leadership matched with the willingness and participation of the physicians at BH, the education gap that identified the lack of continuing education will be addressed. The results of the study guided the focus of the white paper in addition to generating the goals.

Upon completion of the execution of this white paper, the goals to be met are as follows:

- Present evidence from the study that support the need to create a robust course catalog with advance course offerings
- Provide stakeholders a recommendation on the learning resources required to carry out the suggested education methodologies
- Identify the communication and support plan recommended for senior leadership at BH to successfully implement the proposed education for the physician community.

Elements of the Continuing Education for Physicians' White Paper

Optimal Resources

There are several resources recommended to ensure a successful implementation of the continuing education for physicians' white paper. Included in such resources would be as follows: (a) facilitator or preceptor, (b) classroom, (c) instructional designer, (d) training resource materials, and (e) learning management system. Below are the definitions for each resource listed above:

- *Facilitator/Preceptor* – A knowledgeable resource that has at least two years' experience working intimately with *athenaNet*, in addition to being

knowledgeable about the physician workflows used to document quality patient care.

- *Classroom* – Environment and/or location that can be used to provide instructional lessons to all participants. This space would also be used for independent study.
- *Instructional Designer* – a resource that can create and/or modify eLearning modules for the physician community.
- *Training Resource Materials* – Education products used to assist physicians with fulfilling documentation requirements within *athenaNet*.
- *Learning Management System* – software used to track, evaluate, and manage all learning outputs in addition to listing all course offerings for all participants.

Galbraith is one of many that subscribes to the concept of offering multiple learning methods to address the diverse learning styles within the adult population. Given this, it would be a massive service to BH to offer multiple platforms of learning opportunities to show both the support and the flexibility to provide the physician community what is needed. To support the resources above, it is recommended that BH offer the following methods of continuing education; (a) live WebEx sessions, (b) independent workshops, (c) eLearning modules and (d) training resource materials (e.g., job aids, cue cards, etc.). All methods should incur a regular cadence of offerings.

WebEx Sessions: It is recommended that the WebEx sessions are offered on a monthly base to include topics that require a live facilitator to explain/demonstrate the

nuances of the topic at hand. These sessions should be offered in the existing LMS, HealthStream, as most if not all physicians have access to HealthStream. Included in the course offering would be the description of the course, in addition to the scheduled date of the course offering(s). Physicians would be required to enroll in each course that he/she plans to attend. This allows for senior leadership to manage their resources appropriate – if there are not participants enrolled in the course, the session may be canceled. It is also recommended that each live WebEx session is recorded to allow physicians to access the course after the live offering. This approach ensures that the course is readily available for any physician seeking to complete the education.

Independent Workshops: It is recommended that an independent workshop is offered during times when new functionality within *athenaNet* becomes available, that does not qualify for a full training session. The sessions should be inclusive of a facilitator/preceptor that would serve as a resource; in the event, physicians have questions regarding the new functionality. Such sessions should be offered at a minimum of one week during the implementation of the new functionality. The hours should not exceed four per day to support maximizing the resources that would manage such sessions. During these sessions, physicians will have the opportunity to have interactive, hands-on experiences with the new functionality outside of the exam rooms. Having limited distractions would allow the physicians to capitalize on the time spent learning the new functionality.

eLearning Modules: Having the ability to complete a course during the times that coincide with a schedule as a physician would be beneficial. It is recommended that the

eLearning modules are created by instructional designers to fortify the content as intuitive and interactive. It is required to maintain the interest of the physicians, in addition to providing a fruitful and meaningful education session. Offering eLearning modules on the LMS provides the flexibility to the physicians to start and stop the modules as needed until completion.

Training Resource Materials: Evidence shows that creating job aids, cue cards, etc., to display new functionality, policies, procedures, and best practices for EHRs are beneficial. It is recommended that these types of materials are offered to support live WebEx sessions, independent workshops, eLearning modules, and miscellaneous functionality that is implemented in *athenaNet*. Taking this course of action will provide a supplement to the training methodologies used in addition to offering a robust list of continuing education.

Roles and Responsibilities of Senior Leadership: The leadership at BH serve as the most intrinsic element of the continuing education white paper. Leadership would need to be in a position to communicate the new initiative out to the physician society, the concept of the white paper. Furthermore, leadership would need to create/provide the resources needed to source the various elements of the proposed white paper. This may include creating a new budget for a part-time resource to provide the education, soliciting current employees that have the experiences, and possibly providing an incentive of some sort to show the commitment and appreciation of the program and resources.

Recommended Implementation Timeline

As with any implementation, there comes the concept of the time required to carry out the tasks. Owens (2008) suggested that there are two approaches to consider when implementing a project – big bang and phased approach. The big bang approach has the potential to increase the anxiety level of those that will be impacted by the changes whereas the phased approach allows for small successes and lessens anxiety levels (Owens, 2008). Based on Owen's study, matched with the results of the study that demonstrated physicians' discomfort with the training process, I believe it is best to move forward with a phased approach to implementing the continuing education white paper.

It is recommended that BH starts with offering additional training resource materials. Upon completion of developing the training materials, it would be wise to develop the eLearning modules. The modules can be accessed at any time from the physicians which allows the most flexibility for all parties involved. Once the modules have been created, it is recommended to move forward with offering live WebEx sessions and the independent workshops simultaneously. The thought is that once physicians complete the WebEx session, he/she may be inclined to put into practice what was learned in the WebEx session.

The timing of the roll out of each phase should be at the discretion of BH leadership. The phased approach allows BH to make adjustments as needed while supporting the education opportunities of the physician community. Based on the solutions recommended in the white paper, the entire initiative has the potential to be implemented in full within 6 months.

White Paper Evaluation Plan

As with any education/training, comes the need to incorporate an evaluation process. Shepherd (1999) suggests that failure to evaluate training with a formal evaluation process only leads to subjective results. In an effort to avoid subjective results, a survey will be sent to BH leadership and its stakeholders after 90-180 days to get a sense of the achievements that have occurred since the implementation of the white paper. Jones (2017) believed that there is an advantage to using online surveys to collect data to validate the effectiveness of a program. The survey will be conducted using survey software such as survey monkey to evaluate the effectiveness of the white paper. The results of the survey will determine if additional modifications are needed to meet the needs of BH.

Presentation of Recommendations

The stakeholders at BH which includes the Direction of Operations, Office Managers, Training Team and the President of Physician Services; appear to be invested in the hope of receiving a solution to counteract the training gaps that physicians have experienced with the implementation of *athenaNet*. As the researcher, I plan to schedule a meeting with the stakeholders at BH, at which time the results of the study will be provided. Additionally, a PowerPoint presentation that outlines the components of the white paper will be demonstrated during the meeting. At which time, if the stakeholders feel the need to discuss modifications, it will be done during this time. Upon approval of the white paper, the implementation of the tasks discussed above will begin.

Successfully implementing the continuing education white paper will support the physician community and the patients in which they are treating. As a source to ensure success, I would serve as a consulting resource to assist when needed to clarify how to carry out tasks as noted in the white paper as needed. My services will be available to BH for a total of 2 weeks. Upon completion of the 2 weeks, BH's leadership team would have the ability to contact me via email and/or phone should additional clarity regarding the continuing education white paper is needed.

Conclusion

BH has determined that there are training gaps that exists amongst the physician community. Conducting a research study with the physicians at BH exposed the training gaps in addition to providing insight on possible solutions to mitigate such challenges in the future. Based on the results, a continuing education for physicians' white paper was created. The white paper includes methodologies and solutions to lead the change needed in the physician community as it relates to address the gaps that were exposed during the study. It is recommended that the stakeholders at BH continuously monitor the progression of implementation and the successes that the white paper may offer.

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Appendix B: Interview Protocol

Interview Questions to address RQ1: What are physicians' perceptions of facilitators and barriers that impact the training received in preparation for quality documentation in EHR?

1. Think back to a time when you were learning about quality documentation in EHR. Can you think of a specific situation that you found frustrating that discouraged you or prevented you from participating in the learning program as planned? Try to describe it to me in detail --- how you felt, what you would have liked to happen, etc. In this situation or another that you experienced, what would have been helpful to facilitate your learning?
2. As you recall the implementation process of *athenaNet*, what was your perception of the types of barriers and facilitators that existed related to preparing to document patient care in *athenaNet* for physicians as you prepared to move from either paper to *athenaNet* or from another EHR to *athenaNet*? How were those barriers and/or facilitators addressed, if at all? Having had some time in *athenaNet*, if you think back to the time you just described, how could the barriers/facilitators have been addressed differently?
3. When you think about the training that you received prior to using *athenaNet* with your patients, what do you feel worked really well to help you prepare for the first day of seeing patients while documenting in *athenaNet*? Were there any training activities that you believed prepared you better than others? If so, what were they?

What made them better? Were you able to complete all of the required education? Why or why not?

4. Now that you are working in *athenaNet* and have experienced the reality of entering quality documentation, what parts of documenting the patient's care plan appears to be frustrating at times? What about it makes it frustrating? Does the frustration lead you to forego information that you would have typically written in a paper chart?
5. As you were preparing for the implementation of *athenaNet*, and as you recall the process for accessing the overall education for *athenaNet*; was the process for the education easily accessible? Did you have assistance to make you aware of what your education requirements were as a physician? Once the training was completed, can you think of a time when you benefitted from accessing any learning resources after the completion of training that helped you with becoming more knowledgeable about documenting quality patient care in *athenaNet*? What training resource did you access?

Interview Questions to address RQ2: What are physicians' recommendations for enhancing the educational process for quality documentation in EHR?

1. Based on the time you have spent using *athenaNet* to document care for your patients, can you tell me about a time when you had the opportunity to inform another physician of some features you discovered in *athenaNet* that he/she could use to increase the value of their quality documentation? With that experience in mind, would you recommend those topics to be used to formulate advance training that could potentially increase the level of quality documentation that is entered into *athenaNet*?
2. Thinking back to the initial coordination of the *athenaNet* training, what were the frustrating elements attached to getting the registration and the prerequisite training completed? Can you think of ways in which you would have benefited from a different process?
3. As a physician, you have experienced first-hand the need to balance patient care and attending training; as such, can you think of a time when you were forced to make a decision between completing training as opposed to continuing on with providing patient care? What about that situation do you think could have been different? If the training were offered in a different platform, do you believe it would have made it more realistic to complete the training in addition to continuing patient care? Based on this experience what would be the ideal platform in which education is offered to physicians to encourage a higher participation rate? What time of the day would you recommend courses being offered to physicians?

4. HealthStream is the current application used to manage course offerings, registrations, and classroom management; what elements of HealthStream would you consider fairly easy to navigate? What areas are not so easy? Compared to other learning management systems that you've used in the past, how does HealthStream rank? Would you continue to use HealthStream as the modality to manage physician education for additional *athenaNet* education?
5. Thinking back to all of your experience with multiple EHRs, were there training sessions offered with any type of incentives attached to successful completion? If so, what were they? In comparison to what you experienced with the EHR training that offered incentives vs the *athenaNet* training that was received, do you believe there was a noticeable difference in completions amongst the physician population?

Appendix C: Demographic Form

Please complete the following information in preparation of the interview for the research study:

Number of years as a physician:	Specialty:
List the names of the EHRs you have experience with:	Number of years with using EHRs
Number of years using paper charts:	List any *athenaNet* training previously completed

Appendix D: *athenaNet* Utilization Report Data Collection Form

Physicians Utilization Report Data		
Total Number of Encounters (Office Visits)	Total Number of Closed/Completed Encounters (Office Visits)	Total Number of Days Encounters Remained Opened in *athenaNet*
e.g., 20 encounters	e.g., 15 encounters	e.g., 10 days

Appendix E: White Paper Evaluation Forms

White Paper Initial Meeting Survey					
Date:	Presenter:				
Evaluation Statements:	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The objectives of the white paper were clearly defined.					
The content in the presentation was organized and easy to follow.					
The presenter was prepared and knowledgeable about the white paper.					
I am confident I have what is needed to carry out the tasks of the white paper.					
I understand the research evidence that supports the need to create a robust course catalog.					
I understand the recommendations on the learning resources required to support the success of the suggested education methodologies.					
I am able to identify the communication and support plan to implement the proposed education plan for the physician community.					
The location of the meeting was adequate.					
The facilities met my standard.					
I know who to contact should I have questions regarding the white paper.					
Optional: Please document additional feedback here.					

White Paper Post Implementation Survey					
Date:					
Evaluation Statements:	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The physician community is receptive to the proposed training.					
The courses offered are meeting the needs of the physician community.					
Quality documentation goals have been met.					
There was a decrease in the lack of quality documentation entered into the EHR.					
The resources required is in alignment with the initial training recommendation. assigned to provide the training.					
The facilities in which the training is offered met my standard.					
I know who to contact should I have questions regarding resources/reference materials.					
Optional: Please document additional feedback here.					