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Development and Content Validation of an Emergency Department EHR Safety Educational Program

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
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Walden University
2016

Abstract

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MS, Walden University, 2014

BS, Virginia Commonwealth University, 2010

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

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Abstract

Emergency Department (ED) providers and staff experience challenges with using electronic health record (EHR) software to document and communicate about patient care. These difficulties are often caused by inadequate training in the use of the organization's EHR system. Challenges with EHR use have been linked to increased ED patient wait times, which impacts patient safety by delaying care and increasing the potential for medication errors. Providing education that addresses EHR software; EHR usability; and collaboration among staff, providers, and EHR system managers has been shown to reduce ED wait times and decrease the risk of medication errors. The purpose of this project was to evaluate a new ED Safety EHR educational module and to identify provider and staff difficulties when operating ED EHR software. The goal of this project was to provide relevant education to ED providers and staff, which could minimize the impact of EHR use on patient safety in the emergency setting. Relational coordination theory and Kolcaba's theory of comfort framed this project. Five local ED staff and providers considered experts in EHR software utilization were chosen to review and validate the content of the educational module using a ten question, 4-point Likert scale survey. All five experts agreed that the content of the ED Safety EHR educational module was easy to read, comprehensible, and relevant. One noted area of weakness involved the technical language used in the educational module. Participants requested language simplification prior to implementation. This project promotes social change by addressing the need for ED EHR education as a strategy to reduce ED patient wait times and minimize the risk of medication errors in the emergency setting.

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Dedication

I would like to dedicate this project in memory of my great grandmother Sallie Vinson, my grandmother Josephine Evans, Aunt Maggie, and Aunt Pauline for taking part in raising me and showing me how to stand strong in diversity. I could not have done this without all of my family support.

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Section 1: Evidenced-Based Practice Overview

Introduction

While electronic health records (EHRs) originated in the U.S. health care system in 1967, their rates of adoption have not yet been evaluated in-depth (Sittig, Ash, & Singh, 2014). Further research is required to improve the effectiveness of "EHR" interfaces, increase access to software across institutions, and minimize hardware bottlenecks that can cause increased wait times (Sittig et al., 2014). Given that attention and time required for clinicians to provide direct care to the patient and "EHR" software interfaces could be related to increased wait times, it is important to ensure that clinicians are not spending too much time at the computer and, consequently, less time at the bedside providing care to the patient. "Institutional requirements for nurses to use EHRs may lead the nurse paying more attention to the computer than the patient may also increase wait times." It is important to identify existing problems within the system to improve the quality of patient care and outcomes (Vartak, Crandall, Brokel, Wakefield, & Ward, 2009). Obtaining insight from healthcare providers and identifying existing problems will promote a safe work environment for clinicians and patients alike. I designed my project on the assumption that "EHR" software interfaces are causing preventable safety concerns such as increased wait times in health care organizations. In addition, I sought to identify existing problems in the patient safety educational module content by having health care providers who work in emergency departments in Virginia visit the local library and provide input on a paper questionnaire in this project.

Background and Context

Safety issues stemming from the use of "EHR" software interfaces have been addressed in past articles by many authors, and have included not enough or too many alerts, excess clicks needed to complete a task, and slow interfaces that unnecessarily prolong tasks (Sittig et al., 2014). When there is a lack of alerts in the "EHR" software interfaces, the clinician has to monitor system updates repeatedly, which can be both time consuming and create more opportunities for mistakes. Reducing medical errors is essential to decrease morbidity, mortality, and disability rates that all have a direct link to the poor implementation of "EHR" interfaces. Critical factors that contribute to the successful implementation of "EHR" interfaces include proper training and adequate financial resources (Houston-Raasikh, 2014). Proper training is necessary to ensure users can operate the "EHR" interfaces correctly. Gathering information from individuals who use "EHR" interfaces every day provided me insight into the problems that exist with the software in relation to increased wait times. Liebovitz (2013) suggested that a problem exists with the transparency in the process of decision-making by evaluating the current HIT system. Participants in the project used real-time data that allowed changes to be made based on the latest information. Using a framework similar to Banning (2008), I applied the following reasoning strategies to inform my approach to this project. These included:

- Dialectic reasoning, to allow a holistic view of patient safety and user-related issues with "EHR" interface implementation.

- Operational reasoning, to help identify different views.

- Inductive reasoning, to validate clinical decisions in a generalized manner.

- Problematic reasoning, to identify resolutions to the problem.

- Theoretical reasoning, to create a hypothesis (i.e., when surveyed, health care providers will verbalize that EHRs software interfaces pose preventable patient safety concerns).

Collecting qualitative data from participants directly from a questionnaire regarding the strengths and weaknesses of the patient safety module assisted me in understanding participant feelings regarding the content in the patient safety module. Users who operated the system on a daily basis assisted the organization with creating ways to improve the system. However, implementing "EHR" interfaces without evaluating their effectiveness can lead to unexpected failures (Houston-Raasikh, 2014). It is essential to review the implementation of "EHR" interfaces processes annually because doing so can indicate emergent problems. A problem-oriented focus is essential for correcting issues that arise in "EHR" interfaces applications (Terry, 2013).

Problem Statement

"EHR" interfaces application that involves the documentation process pose safety issues for nurses and patients such as delays in care and increased wait times. Nurses who pay less attention to their patients because of focusing on the technology may increase safety concerns within the organization. In addition, usability features of "EHR" interfaces continue to be a problem that impedes workflow in the clinical setting (Sittig et al., 2014). Use of "EHR" interfaces is causing increased wait times in the emergency department (ED) and increased dissatisfaction among nursing personnel (Melon, White,

& Rankin, 2013). Dividing attention between charting records and spending time with the patient can affect patient health outcomes (Terry, 2013). It is important to know if lengthy documentation or imperfections in the "EHR" interfaces pose safety concerns, such as increased wait times. By using a nondirectional hypothesis, I addressed the issues of lengthy documentation and slow applications in "EHR" interfaces which cause safety concerns in clinical practice. This nondirectional hypothesis showed the relationship between the time it takes a nurse to chart and increased wait times (Terry, 2013).

Purpose Statement

The purpose of this project was to evaluate a patient safety educational module to identify user difficulties when operating "EHR" interfaces currently used in a VA hospital in the state of Virginia. This project also aimed to improve "EHR" interfaces' effectiveness by streamlining the documentation process and reducing wait times. Addressing the flaws in the system may lead to policy changes that improve work production in the organization. "EHR" interfaces are an important way to improve the quality, safety, and efficiency of hospitals (Vartak et al., 2009). It is important to examine the outcomes and process of the "EHR" interfaces that impact health care, particularly in the domain of fast-paced, critical care (Vartak et al., 2009). Identifying bottlenecks and barriers to patient care is necessary for organizations to ensure safety and quality for the patients.

Project Objectives

The objectives of this project were:

- To develop a patient safety module for health care providers. Making staff aware of concerns will improve the quality of care that is provided to the patient. The better educated the staff are, the more likely a reduction in falls, infections, and wait times will occur.

- To reduce hospital, wait times by better educating the staff. The more knowledgeable the staff, the more productive the nurses will be when providing care.

- To improve safety in health care. Reducing wait times will reduce patient safety risks regarding health concerns.

Guiding, Practice, and Research Questions

Usability and technological limitations are major concerns in small and large organizations that face impending safety concerns, quality, and interoperability (Terry, 2013). In this section I present my research questions and hypotheses, and outline my mixed-methods design rationale. It is important to both review and revise the applications within "EHR" interfaces for improved usability and greater flexibility. Revisions may improve clinical automation, administrative transactions, and the financial impact of "EHR" interfaces for organizations (Terry, 2013). Additionally, corrections to patient safety educational modules have been found to lead to improvements in quality, consumer confidence, efficiency, error prevention, and the decrease in health disparities (Terry, 2013). Improvements in "EHR" interfaces will require management to look

further into imperfections in "EHR" interfaces, elicit staff input, and implement revisions (Walden University, 2011b). Nursing staff can provide valuable information to management regarding the effectiveness of the system and the impact "EHR" interfaces have on daily operations (Walden University, 2011a). Taking the nurse away from the bedside can pose a safety risk to patients—a risk that needs to be addressed in order to minimize safety problems. For example, the triage process is supposed to take three to five minutes. If improvements in the documentation process are not made in the future, it will lead to delays in care, as well as an increase in safety risks, and reduced staff compliance with national standards by staying on top of technology trends (Melon et al., 2013).

Researchers found critical gaps in measuring and counting valuable evidence aimed at treatment and patient care improvements (Melon et al., 2013). In my analysis, I considered how numerical data management depends on front-line reports (Melon et al., 2013). My project may assist management in determining what goes wrong in the work environment in the future. To identify user difficulties in order to improve "EHR" interface effectiveness, I developed the following quantitative research questions:

1. What is the nature of the relationship of health care providers' knowledge and competency after the review of an EHR-specific educational module?

2. Is there a significant relationship between an increase in wait times and implementation of EHR software interfaces?

3. How frequent are health care providers using the competency skills/knowledge from the EHR curriculum?

4. How would the use of the educational module reduce wait times?

Significance of the Project

"EHR" interfaces are an important part of the future of health care because they allow providers to access a patient's complete health record across different treatment centers in real time. Faster access to relevant data has the potential to significantly improve outcomes for many individuals. Dependent variables are building blocks that need assistance to prove an existing problem as indicated by health care providers in a related field (Polit, 2010). Independent variables support the health care providers' question in the related field to validate the dependent variable (Polit, 2010). The independent variable in my study was the evaluation of "EHR" interfaces' information (Polit, 2010). The dependent variables consisted of the quality of nursing documentation, the time of patient arrival to patient disposition, and paper questionnaire evaluations (Polit, 2010).

Reduction of Gaps

Streamlining the documentation process is essential to improving the quality of clinician care. The process requires abbreviating or eliminating the standard practices in regards to a complete physical assessment, as well as the surveillance and monitoring of work obligations. Reducing gaps in the documentation process in "EHR" interfaces will reduce concerns regarding timely patient access to care. Poor access is highly politicized, and publicly visible concerns—which have a great deal of media and political coverage— require attention from health care administrators. It is evident that counting and measuring health care provider opinions produces valuable evidence to minimize delays

in care and patient flow. The implementation of "EHR" interfaces has disrupted the workflow in health care, and has affected how nurses maintain patient safety in the clinical practice. In my project, I found that "EHR" interfaces improve quality of care when used appropriately. In addition, the project analysis supported the notion that "EHR" interfaces pose safety issues by increasing wait times in health care.

Implications for Social Change

The implementation of a rapid assessment zone and the development of a speedier process of waiting room care allows for a fast-tracked intake flow for acute patients in the ED (Melon et al., 2013). Health care clinicians have experienced work redesigns as a substantial disruption that negatively affects their patients' wellbeing and their professional obligations. The emphasis on the lengthy documentation of "EHR" interfaces poses a safety risk—a fact corroborated by data from my project's questionnaire.

Nurses who participated in my project agreed that prolonged wait times are a problem, and expressed different understandings regarding efficient quality care. Nurses have clear ideas about how to redesign "EHR" interfaces to improve care (Walden University, 2011a), but my project revealed that upper management often underestimates the workload of the nurse during documentation processes. Activities essential to competent and safe treatments are often eliminated or curtailed to expedite or streamline documentation and other technology requirements. Participants' questionnaire answers provided convincing evidence that the current approaches to the redesign of "EHR" interfaces pose a severe risk to increased wait times. The fixation on the benefits of

"EHR" interfaces as quality indicators in hospitals diverts attention from bigger problems within organizations that may adversely affect nurses, patients, and the whole electronic software interfaces (Walden University, 2011a). Others have identified root causes of the adverse impact of inefficient designs of "EHR" interfaces as including too many clicks, a lack of alerts, and lengthy documentation applications that adversely affect the workload. These affect the way nurses practice attentively, safely, and holistically (Sittig et al., 2014). My project is significant because it used input from health care providers to review and validate the content of the patient safety educational module.

Definitions of Terms

In this DNP project, I used the following operational definitions:

Critical gaps: Disparities between professional theories and clinical practice (Savaya & Gardner, 2012).

Documentation process: The implementation of a method of developing a functional and practical system that enhances communication, improves documentation quality, and the use of time to document findings (Bruvlands, Paans, Hedger, & Muller-Staub, 2013).

Intake: The process or act of taking the patient in the treatment area to receive care (Melon et al., 2013).

Nondirectional hypothesis: A hypothesis that assumes that the individual variable will have an impact on the dependent variable (Terry, 2013).

Performance benchmarks: The measurements of performance at specific intervals that are set in advance to ensure goals are achieved (Melon et al., 2013).

Rapid assessment zone (RAZ): A specified area for assessing less acute patients to increase patient flow in the ED (Melon et al., 2013).

Streamlining: A systematic approach to providing high-quality care in a cost-effective and timely manner (Shaw, Richards, Wood, & Calvert, 2014).

Waiting room care: Determining patient acuity will assist in determining the treatment area where the patient will receive care in the ED (Melon et al., 2013).

Theoretical Foundations

The two theories I used for this project were relational coordination theory and Kolcaba's theory of comfort. I used the first to emphasize communication among health care providers, and the latter to focus on expediting care. Both may lead to the minimization of patient discomfort (McEwen & Wills, 2011). In the ED, the triage nurse assesses the patient to determine what symptoms the patient is experiencing to expedite the process for patients in distress or discomfort. Every patient is asked about the level of pain experienced at the time of the assessment on a scale of 1-10, with 10 being the worst. The nurse will relay the information to the ED physician, and treatment is initiated within 30 minutes. In addition, reducing negative tensions will lead to improved health-seeking behaviors for patients and their families (McEwen & Wills, 2011). Kolcaba's (2003) theory of comfort is important in my project because improving the use of "EHR" interfaces will lead to patient comfort by reducing wait times. Relation theory is based on effective communication between health care providers that leads to changes in organizational policies. Using the questionnaire enhances communication by having participants provide their input regarding the effectiveness of the patient educational

module. Many patients and their families come to hospitals worried about the patient outcome or health status. In hospitals, anxieties usually run high, and reducing anxieties as fast as possible is an important task. Anxiety can be reduced by involving the patient and the patient's family in the treatment process, and by allowing the patient or family members to voice opinions and concerns. This may reduce the patient's fear of the unknown and allow the patient to make an informed decision regarding their care. Another way to reduce patient flow and impacts of "EHR" interfaces is to change health care policies. The most appropriate theory for this project is the theory of relational coordination because it addresses how staff collaboration will increase communication, assisting nurses in coordinating and designing interventions to improve patient outcomes (Gittell, 2011). In addition, health-seeking behaviors are identified and used to improve patient comfort (McEwen & Wills, 2011).

Nature of the Project

The purpose of this project was to evaluate a patient educational module to identify user difficulties when operating "EHR" interfaces. I investigated the validity of the content in the patient safety module by calculating the data from responses to questions on a paper questionnaire that I designed and administered to health care providers. I chose this project because of the availability, quality, and overall completeness of documentation. I utilized quantitative data extracted from paper questionnaires completed by health care providers. I also worked to identify flaws with "EHR" interfaces in hopes of improving patient flow, patient care, and the reduction of patient safety concerns.

Assumptions

Based on the findings of others regarding the shortfalls of "EHR" interfaces in the emergency department, I made several assumptions for this project. I assumed that:

- Many patients experience increased wait times, which affects patient safety risks, and these could be driven by unrealistic documentation expectations.

- Management misunderstands the challenges of transitioning from paper charts to "EHR" interfaces and the ease with which the shift in record-keeping methods will improve the documentation process.

- Lengthy documentation poses safety concerns that increase mortality rates.

- There exists minimal evidenced-based literature regarding "EHR" interfaces and how poor design, implementation, or training could lead to inefficient use, thus increasing patient safety concerns.

- The technology limitations are due to inadequate applications in the "EHR" interfaces.

Scope and Delimitations

My selection criteria limited potential participants to health care providers between the ages 24 and 64 who work directly with EHRs software and were willing to provide their opinions on a paper questionnaire. My research focused on the perceptions of "EHR" interface users and how they believe their level of empowerment impacts nurses' care provision. Furthermore, I limited the boundaries of this project to health care providers' generated data, where they had the opportunity to provide input on the questionnaire within the framework of psychological empowerment. Hence, their voices

and lived experiences were illuminated on the questionnaire. I excluded individuals above the age of 64 because it is common for the older population to have less confidence and comfort in working with newer technologies, and they may be slower to adapt to them.

Limitations

Borrowing the project constraints used by Terry (2013), my project's limitations included:

- The voluntary sample population is a potential bias of the project. This was addressed by applying the inclusion/exclusion criteria.

- The small sample size affected the importance of findings.

- The small sample size affected the number of respondents.

- Potential weakness resulted from lack of past literature available.

- Potential weakness resulted from isolating the research to one profession.

However, as I developed the project patient safety educational module content, I addressed many of these deficiencies (Terry, 2013).

Summary

"EHR" interfaces affect patient care in both positive and negative ways. Helping clinicians develop the ability to identify significant issues in the system will reduce health care concerns. The lack of attention or time the clinician has with the patient can increase morbidity, mortality, and disability rates. Participants provided valuable input that helped me develop and validate the patient safety module. Making changes in the "EHR" interfaces will be essential to improve the work environment in the future. The "EHR"

interfaces are important because they improve communication between clinicians. Collaboration with staff can help identify the problems that currently exist in "EHR" interfaces, and can increase compliance and success rates during implementation of the software after I graduate. The participant data I collected in this project helped me successfully develop and validate the patient safety educational module content. It is important to identify existing issues within "EHR" interfaces to optimize their effectiveness. Identifying bottlenecks and barriers will help to resolve existing problems. Maximizing efficiency will ensure the safety and quality of patient care, which is the responsibility of the organization. It is imperative that further research on "EHR" interfaces is done to maximize patient safety, improve staff satisfaction, and reduce wait times. To accomplish this goal, management has to make a collaborative effort to work with staff. Staff members use "EHR" interfaces daily and can assist management in identifying problems with the software to make corrections and ensure their efficiency.

Section 2: Review of Literature and Theoretical and Conceptual Framework

Introduction

The purpose of this project was to evaluate an educational module to identify user difficulties when operating "EHR" interfaces. Lack of research after the implementation of "EHR" interfaces has created a false understanding of how well the "EHR" interfaces work in organizations by upper management in hospitals. In addition, this lack of research has led to inadequate policies and the increase in morbidity, mortality, and disability rates stemming from increased wait times (Blair & Smith, 2012). Identifying the areas that need to be improved in "EHR" interfaces is essential to improving the quality of care throughout the organization (Walden University, 2011a).

Not reviewing "EHR" interfaces to determine the effects they can have on clinicians' work obligations may lead to an artificial increase in national benchmarks (Melon et al., 2013). It is important to identify problems in "EHR" interfaces to promote safety and save lives (Vartak et al., 2009). In this examination of physician and nurses' perceptions regarding the safety concerns of "EHR" interfaces, I have sought to identify practice concerns in health care.

This project is relevant to clinical practice because its findings may lead to improved communication between providers and clinicians. The project may also improve the efficiency and accuracy of the software applications in "EHR" interfaces prior to delivering care to better meet professional benchmarks (Melon et al., 2013). Further, the project's findings may support nursing by promoting a safe work environment (Vartak et al., 2009), and correcting barriers within "EHR" interfaces may

improve productivity and reduce workload burdens and wait times (Sittig et al., 2013). This section focuses on the theoretical underpinnings that shaped the project: the theory of relational coordination, and the theory of comfort. I drew on these theories because they indicated the importance of system improvements and point to how best to review the system in order to obtain the desired goals (McEwen & Wills, 2011).

Finally, the review patient safety module I created and used to evaluate the effectiveness of "EHR" interfaces provided results regarding physicians' and nurses' perceptions of the interfaces. Further research is required to inform clinicians about the safety issues of "EHR" interfaces using evidenced-based practice (EBP). The project's participants included five health care providers from five counties in Northampton, VA, who took part in an EHR software interface training at local public library sites. Excluded from this project were individuals under the age of 18 and the elderly. The research only focused on the nature of the relationship between prolonged wait time, specialized training in "EHR" interfaces, and the apprehension towards health care safety concerns among health care providers in the State of Virginia.

Library Database Search

I performed a systematic research of literature using PubMed, CINAHL, Cochrane Database of Systematic Reviews, ProQuest, and Goggle Scholar. I used the following search terms: *emergency department patient intake, emergency department wait times, electronic health record safety issues, documentation in the ED, informed consent, EHR documentation, professional benchmarks in ED, relational coordination theory, Kolcaba's theory,* and *streamlining events in ED*. These searches led me to

information supporting the review tool and theoretical foundations measured for this project. After a primary literature review, I conducted an extensive search of literature to support my proposed research question. In the process, I identified several gaps in the literature, include a gap regarding increased wait times after the implementation of EHR software interfaces in health care environments.

Scope of Literature

To confirm the relevance of my research question, I based the literature review on the full scope of the evidence-based research available. Ensuring safety in the work environment may increase a health organization's ability to provide comfort for patients who wait to receive care. I also conducted an extensive search of supplementary articles regarding comfort theory and relational coordination theory to provide additional support for my project.

Concepts, Models, and Theories

In this DNP project, I used Kolcaba's (2003) comfort theory and Thompson's (1967) relational coordination theory, both of which have highlighted the importance of staff collaboration for improving the quality of patient care. I used these theories to understand the importance of staff collaboration for improved organizational processes. Finally, the theoretical foundations and evidenced-based models provided communications, adjustments, and literature relevant to the identified problem and its application to practice.

Comfort Theory

Kolcaba's (2003) middle range theory of comfort addressed environmental, psychospiritual, physical, and sociocultural contexts (Krinsky, Murillo, & Johnson, 2014). Krinsky et al. (2014) suggested that clear applications of comfort theories may benefit nursing practice by enhancing patient comfort through improved environmental safety. Kolcaba's (2003) article illustrated how departmental processes were instrumental in expediting the delivery of care. Leaving patients in the waiting room for prolonged periods can increase patient discomfort resultant from delays in care provision.

In principle, comfort theory addresses significant characteristics related to the nursing practice, including attending to patient needs quickly, contributing to a safe work environment, and improving "EHR" interfaces efficiency (McEwen & Wills, 2011). Comfort theory holds that patient comfort is an essential part of providing care (Krinsky et al., 2014). In order to improve the quality of care provided, clinicians need to maintain comfort for the patient throughout the treatment process (Krinsky et al., 2014). This requires communication between clinicians in order to undertake initiatives focused on three contexts (i.e., transcendence, relief, and ease) to obtain the goals of comfort. Thus, communication regarding comfort causes a reaction in the health care arena that promotes discussions about ways to improve health, nursing, work environment, and patients (Krinsky et al., 2014). Finally, if a goal is agreed upon between nursing and management, a policy expediting comfort may occur (Krinsky et al., 2014).

Conceptual Framework for Comfort Theory

Figure 1. Conceptual framework for comfort theory. Reprinted with permission from *A Practical Application of Katherine Kolcaba's Comfort Theory to Cardiac Patients* by Robin Krinsky, 2014.

I used the comfort theory to examine physicians' and nurses' perceptions regarding the safety concerns of "EHR" interfaces. The theory provided the structure to assess the failure or success of planned interventions for staff education. As discussed previously, management lacks the knowledge of how to evaluate effectiveness after the implementation of "EHR" interfaces in the ED (Vartak et al., 2009). Such deficiencies foster unsafe work environments and increase work burdens. Using comfort theories to obtain the goal of providing safe care will provide structure for organizational improvements in outcomes and processes using evidence-based research resulting from the project development and validation of content (Krinsky et al., 2014). This theory further informed my project by giving it a structure with which to assess and evaluate the effectiveness of interventions via a quality assurance model (Ruxwana, Herselman, & Pottas, 2014).

Relational Coordination Theory

Thompson (1967) argued that effective coordination in a setting characterized by "common adjustments" with participants was limited in health care because common adjustments were not cost effective. Thompson argued that coordination normally occurred by managing mechanisms, including scheduling, routines, supervision, preplanning, and standardization (as cited in Gittell, 2011). Staff interdependence and collaboration contributes to the effectiveness of common adjustments and encourages staff to participate in organizational change. Organizational scholars viewed coordination processes as fundamental to initiating staff collaboration and improving communication among staff members. Relational approaches have been developed concerning

coordination built on concepts of common adjustment. Moreover, since peer collaboration appears to be a driving force of communications, health care organizations should have the awareness to motivate communication between peers in order to facilitate new policies (Gittell, 2011). When individuals do not share ideas or coordinate, it leads to inadequate policies and poor patient outcomes (Gittell, 2011). The lack of communication among staff about existing problems can lead to unsuccessful meetings (Gittell, 2011). However, staff input regarding problems that exist in organizations can lead to better policies and increased staff compliance (Walden University, 2011b).

In addition, most health care providers are motivated, eager participants and knowledgeable regarding existing problems in the "EHR" interfaces. Also, the paradigm of a health care change is promoting more insight into the imperfections of "EHR" interfaces and creation of new policies supported by relational coordination theory (Gittell, 2011). The two theories supported the project by suggesting the implementation of a project examining physician and nurses' perceptions regarding the safety concerns of "EHR" interfaces.

Literature Review Related to Methods

Existing Rationale and Scholarship

A wealth of evidence-based research exists that has used paper questionnaires to evaluate the effectiveness of "EHR" interfaces in EDs (Gittell, 2011), including research involving nurses. However, the peer-reviewed articles addressing safety concerns in the "EHR" interfaces gave little attention to the imperfections in the software (Vartak et al., 2009). After reviewing the literature, I found no articles that illustrated the effectiveness

of the "EHR" interfaces regarding work burdens in health care. In addition, no study has been found that regarded the safety of "EHR" interfaces as a function of work burdens and investigated the improvement of "EHR" interfaces applications to meet professional benchmark expectations within health care. Melon et al. (2013) discussed potential project candidates and stated that having no time and the inability to talk with others regarding health concerns were reasons for deteriorating their study.

Background and Context

Institutional Context

After I graduate, a version of this project will eventually be implemented in an emergency department at the Department of Veteran Affairs in Virginia. The U.S. government founded this program in October 17, 1870, with the aim of providing care to disabled veterans. The health care team consists of physicians, nurse practitioners, physician assistant, nurses, and social workers to accommodate the needs of our nation's veterans. In addition, the primary stakeholder is the facility director. However, the director of the emergency department, chief nurse, and chief of acute care of nursing are also key stakeholders who may assist with facilitating change in the organization after graduation.

The clinicians at the facility provide care for a wide variety of demographic groups, including all genders and races. Exclusion criteria are individuals below the age of 23 and above the age of 64. In addition, I allowed individuals who had no experience working with the "EHR" interfaces to participate. I excluded minors, facility residents, mentally or emotionally disabled individuals, pregnant women, my subordinates, my

students, my clients, non-English speakers, individuals in crisis, and elderly individuals from participating in the project. In the ED at the Department of Veteran Affairs, the focus has been on reducing patient wait times to improve the quality of care and reduce safety concerns. Recommendations from the Joint Commission, staff proposals, and the Inspection of the Attorney General (IG) established regulatory protocols at this facility. Strategic planning is disseminated through educational training to improve nursing practice.

Student Content

My affiliation with this medical facility began during my practicum experience in June 2014. I conducted the project at a local library in a private meeting room. In addition, due to safety concerns in health care, stakeholders adamantly believe changes are needed in the applications of the system to improve the effectiveness of the "EHR" interfaces in practice. During my time as a student, I developed and validated the content of a patient safety module focused on educating health care provider's about increased wait times stemming from problems with the use of "EHR" interfaces. Improving environmental safety concerns will enhance the quality of care delivered by the staff.

Wait times in health care regarding the use of "EHR" interfaces have risen significantly over the years, which pose serious patient safety concerns at the facility (Vartak et al., 2009). I undertook the current project because increased wait times that led to several instances that occurred within the facility initiated interest in environmental improvements. The development and validation of the project revealed preliminary

results that may require further research to improve professional benchmark expectations, outcomes, and staff or patient satisfaction.

Conclusion

The literature survey found numerous articles that examined "EHR" interfaces safety concerns (Vartak et al., 2009). These safety concerns affected daily operations at facilities that lacked current research regarding the effectiveness of "EHR" interfaces (Blair & Smith, 2012; Goldstein, 2014; Houston-Raasikh, 2014; McEwen & Wills, 2011; Polit, 2010; Ruxwana et al., 2014; Sittig et al., 2014; Vartak et al., 2009). Vartak et al. (2009) stated the lack of continuous evaluation of the implementation of "EHR" interfaces may cause safety concerns due to system imperfections. In addition, Walden University (2011a) argued that staff involvement is essential to identify imperfections in the "EHR" interfaces. Finally, safety concerns have affected practices that have led to negative impacts on optimal outcomes as well as staff and patient satisfaction (Goldstein, 2014).

"EHR" interfaces have recently been implemented at the Hampton Department of Veteran Affairs, and there has been a paradigm shift to identify imperfections within the "EHR" interfaces. Health care management is responsible for encouraging staff to provide input to assist in identifying key areas that require change to improve the effectiveness of the system (Walden University, 2011b). Additionally, improvements to "EHR" interfaces may produce a productive work environment. As a result, health care provider input may improve patient outcomes and work environments that ensure professional benchmarks are achieved (Melon et al., 2013). For this reason, changing the

focus to identifying major imperfections in the "EHR" interfaces by encouraging staff involvement may improve policies (Goldstein, 2014).

The literature has effectively addressed the safety concerns of "EHR" interfaces. Adoption of the quality assurance (QA) model will reduce health care cost and ensure that the information technology project is successful in the future (Ruxwana et al., 2014). Using the QA model will improve communication and assist in identifying key areas that need improvement. For example, QA is the key driver in e-health for safety, quality, efficiency, and effectiveness of the health care system (Ruxwana et al., 2014). Using the relational coordination theory creates a focus on coordination and relationships, and stresses communication as well as initiates a sense of mutual respect, shared knowledge, and goals. Relational coordination theory indicates that if goals can be attained, the successful work and coordination outcomes of codependent groups will improve (Gittell, 2011). The paper questionnaire minimized or eradicated safety hazards related to "EHR" interfaces in order to build resilience in the software. Sherman et al. (2009) defined system resilience as the "degree to which a system continuously prevents, detects, mitigates, or ameliorates hazards or incidents so that an organization can bounce back to its original ability to provide care" (p. 2).

In summary, a complete review of the literature has shown project tool feasibility results used to disseminate staff education to validate the patient safety module content. I found many limitations during the systematic review, which affected the importance of the project, such as explaining the barriers better (Terry, 2013). The literature indicated "EHR" interfaces: (a) impede workloads for many clinicians; (b) lack extensive research

on the effectiveness of the system, causing management to lack the knowledge of the imperfections; and (c) increase safety concerns in organizations that require attention (Walden University, 2011a; Vartak et al., 2009). Although there is an increased awareness of "EHR" interfaces safety issues, little research has been conducted regarding continuous evaluation processes within health care organizations (Walden University, 2011b). There continues to be a wealth of research addressing staff education and the creation of professional benchmark expectations for "EHR" interfaces in health care (Melon et al., 2013). Sittig et al.'s (2014) study was one of few that indicated a self-assessment tool that improved the "EHR" interfaces for safe use by health care providers. This facilitated the appropriate potential expectations prior to the implementation of "EHR" interfaces after graduation (Sittig et al., 2014).

I have discussed the ways nursing practice could be advanced through introducing a patient safety module into health care, which currently has limited evidenced-based literature that supports the dissemination of staff education expectations for professional benchmarks (Melon et al., 2013). Sittig et al. (2014) stated:

> SAFER guide based risk assessment that is proactive goal is to reduce or eliminate EHR-related safety concerns to build an effective system, defined as "degree to which a system continuously prevents, detects, mitigates, or ameliorates concerns or incidents so that an organization can bounce back to its original ability to provide care. (p. 419)

As discussed by Melon et al. (2013), streamlining documentation and work processes can reduce safety concerns in the organization, which prevents disasters and is essential for

sorting out who is really sick and likely to deteriorate. This project illustrates the need for

continuous evaluation of the effectiveness of "EHR" interfaces, the foundation of

appropriate expectations after the implementation of "EHR" interfaces, and recognition

of the minimal literature regarding "EHR" interfaces that supported this position and

indicated the potential need to advance nursing practice. Finally, continual observations

have exposed safety concerns in the "EHR" interfaces that affected nursing practice. In

addition, researchers noted unexpected expectations regarding the effectiveness of

"EHR" interfaces in clinical practice that required further action (Walden University,

2011b).

Section 3: Methodology

Introduction

The purpose of this project was to evaluate a patient safety educational module to identify user difficulties when operating an "EHR" interface currently used in a VA hospital in the state of Virginia. This project also aimed to improve "EHR" interfaces' effectiveness by streamlining the documentation process and reducing wait times. I sent health care providers an email invitation requesting their participation in the project, and inviting them to meet with me at a local library in a private meeting room in Virginia. Prior to initiating the project, I sought and was granted approval by Walden University's Institutional Review Board (IRB) to ensure the ethical protection of research participants. This project entitled "Development and Content Validation of an Emergency Department EHR Safety Educational Program" was approved by Walden University IRB (Reference # 12-02-15-0372334) and was overseen by Walden committee members. Lastly, the researcher gave the plan used to evaluate the hypothesis and results of the project to participants.

Project Design and Method

After evaluating the limited available evidenced-based literature that addressed the practice problem, I used a patient safety educational module tool to elicit the physician and nurses' perceptions regarding how the effects of "EHR" interfaces impact clinical practice (Goldstein, 2014). The educational module was multifaceted, and could be presented as a PowerPoint presentation or as a paper. It was based solely on the learners' needs. Moreover, I created the paper questionnaire in Excel, and the project

design ultimately supported the evaluation of the newly created and untested patient safety module. The line of quantitative questioning was geared toward determining whether participants felt the patient safety module content provided helpful information that would improve clinical practice. In addition, I asked the participants closed-ended questions focused on the effectiveness or weakness of the questionnaire. Melon et al. (2013) stated, "Another possible benefit of developing and validating a project content is to identify potential weakness that may compromise the research in the future" (p. 232).

I recruited the convenience sample population from health care providers in Virginia. The project design specified the recruitment of five participants between the ages 21 and 64 who use "EHR" interfaces on a consistent basis. Using a small sample size is defensible in a project such as this because it allows for the project's achievability (Burns & Grove, 2009). My purpose in using a convenience sample was founded on need and possible time constraints that could have affected the clinical setting by impeding patient flow (Burns & Grove, 2009; Polit & Beck, 2012).

Ethical Protection of Participants

I implemented the project in the same organization where I will conduct my practicum project after graduation. I had established a positive relationship with the organization stakeholders who were supportive of the project. The need for ethical protection was reduced because minimal identifiable information was obtained from the participants. I conducted the project in accordance with the parameters established by Walden University's IRB to ensure the ethical protection of research participants. It was unlikely that module review participants knew one another because the VA has numerous

nurses in the state of Virginia. All participants worked in EDs as staff workers. I spaced

participant appointment times by an hour to avoid participants running into each other at

the library. Each participant I selected for a module review was from a different hospital.

At the beginning of the module review, prior to asking questions, I instructed participants

to exclude all identifying information such as their names and their supervisors' names. I

kept the identity of all participants and the information they provided confidential, and I

eliminated all identifiable data from the questionnaire. I did not number or code the

questionnaires and module reviews in order to match the participant, thus protecting

participants' identities. I secured all data, which was only shared with my supervising

committee, participants, and dissertation committee. I provided consent forms (see

Appendix B) to all participants by email prior to data collection. These forms outlined

participants' protections and the ethical guidelines I followed during the research project.

I informed participants that all data would be kept in a locked file cabinet and password

protected computer at my residence for at least five years, as required by Walden

University.

After five years, I will shred and dispose of all collected data collected. I am the

only one with access to the data stored in my private office. I only shared data with the

dissertation committee chairperson and committee members. In addition, I provided

participants my contact information and the contact information for the Dissertation

Committee Chair in case they had any further questions or concerns about the research,

as well as contact information of the Walden University representative with whom they

could privately talk about their rights as participants. Finally, I emailed participants a

five-page report that contained the project feasibility report tool and explanation of findings.

Description of Data Collection Procedures and Instruments

Variables and Outcomes

The nursing documentation variables that I included in data collection addressed the nurses' and physicians' perceptions regarding the impact of the patient safety educational module on clinical practice. These variables consisted of the strategies, barriers, and purpose of the patient safety educational module. I gave the paper questionnaire to participants in order to gain valuable data that I used to determine if safety concerns were present in participants' clinical practices (Goldstein, 2014). I measured paper questionnaire scores to determine if there was any correlation between perceptions of the effectiveness of "EHR" interfaces and perceptions of safety (Goldstein, 2014).

Data Collection and Instruments

I used a paper questionnaire to collect data from health care providers who work with "EHR" software interfaces regularly. I gave the health care providers a paper questionnaire after reviewing a patient safety educational module focused on improving the nurses' knowledge regarding the use of "EHR" interfaces. The paper questionnaire consisted of 10 questions focused on the effectiveness of the patient safety educational module. Health care providers returned all questionnaires in a sealed envelope which I provided to participants. I evaluated the scores from the paper questionnaire to identify whether any statistical differences existed (Polit, 2010).

Instrument Validity and Reliability

The relevance and quality of this project's evidenced-based instrument have not been tested (Polit, 2010). Thus, implementing a newly created and adapted patient safety module will support the project by having staff provide input on ways to improve "EHR" interfaces (Burns & Grove, 2009). The initial results from the paper questionnaire on the validity of the project instrument showed health care provider perceptions regarding the effectiveness of the patient safety educational module (Polit & Beck, 2012). The educational module contained detailed educational content designed to improve health care provider knowledge (Melon et al., 2013). These project participants benefitted from the results of the project by shared information from the researcher regarding the safety educational module content of "EHR" interfaces. The shared information described the advantages and disadvantages of the patient safety educational module content (Goldstein, 2014).

Strategies to Limit Threats to the Project

Many strategies can be used to sustain scholastic vigor and increase the external and internal validity of a study (Burns & Grove, 2009). In an effort to maintain the consistency of the paper questionnaire, I was the only person to administer it and disseminate information. Because of the time it took respondents to fill out the questionnaire, I developed a strategy to increase respondent compliance by using a questionnaire that would likely take 5–7 minutes and would not exceed 15 minutes in length. Because lengthy questionnaires may lead to unanswered questions and negatively

affect the results of the project, I limited the questionnaire to 10 questions (Polit & Beck, 2012).

I recruited a small convenience sample population for the project. Unfortunately, small samples can threaten the validity of a project (Polit & Beck, 2012). I used homogeneity control to elicit information from participants (Polit & Beck, 2012). Reliability and validity threatened the project after literature evaluations, project proposal, delimitation discussions, and dialogues in the proposal identified a small target population in the project (Polit & Beck, 2012). I documented and assessed the problems I faced during the implementation of the project so that they could be addressed in the future. I modified the questionnaire from a previous questionnaire in order to improve validity and reliability (Warren, 2014). I modified questions 1-3 on the questionnaire by changing their focus to "EHR" interfaces. I modified question 8 by changing the previous topic to the patient safety module in order to evaluate the content of this project.

Detailed Data Collection Process

I recruited health care providers to participate in the project by sending an invitation to their personal email. I retrieved the participant's personal emails after attending medical conferences in the state of Virginia. After potential participants responded to the invitation, I met with them in a private meeting room of the public library in Hampton, VA, to discuss the possibility of being a part of the project. I used convenience sampling to select participants, emailed each an invitation to participate (see Appendix A), and asked them to sign the informed consent form (see Appendix B). In addition, I informed the participants that the project was on a voluntary basis, and that

there would be no consequences for nonparticipation. The protocol I used for conducting the in-depth semi-structured module review was as follows:

1. Participants were welcomed to the questionnaire session.

2. Guidelines for the interview were discussed.

3. Questionnaire questions were introduced and discussed.

4. Participants were thanked for their participation and the meeting was closed.

Then all five participants were requested to fill out a 10-question paper questionnaire regarding the effectiveness of the patient safety educational module (see Appendix C). Questions 1-8 were quantitative and consisted of closed questions using a 4-point Likert-type scale. Two questions were open-ended qualitative items that sought information from all respondents concerning the strengths and weaknesses of the module (see Appendix D). Finally, after I collected and analyzed all data, I emailed the participants a five-page report of the project results that contained the project tool feasibility results and explanation of results (see Appendix G). Project objectives were difficult to identify, but many themes consistently appeared throughout the project after assessing the evidenced-based literature. First, management had a lack of knowledge regarding how to correct "EHR" interfaces' safety concerns due to the lack of evidenced-based literature available (Goldstein, 2014). A second theme was staff collaboration to share ideas to improve organizational policy processes and the effectiveness of "EHR" interfaces (Walden University, 2011a). Finally, lengthy documentation led to increasing wait times, morbidity and mortality rates, and increased disabilities (Blair & Smith, 2012).

Systems for organizing, tracking, and analyzing. I organized and tracked the preliminary project results in an Excel spreadsheet. The convenience population contained five health care providers. I collected data using the 4-point Likert-type scale and manually evaluated the questionnaire (Polit, 2010).

Time and Resource Study Constraints

External and internal time constraints did not affect the module review process of the project. This project had minimal expenses and resources, which did not seem to be a problem for this DNP project. The budget consisted of a zero balance.

Long-Term Project Goals

The purpose of the project was to initiate discussion that was used to obtain preliminary findings. The preliminary findings helped indicate if a revision of the core hypothesis could be used in future studies. In addition, I used newly adapted and designed tools such as the patient safety module to educate staff in the future. The project's data provided insight to assess the quality and effectiveness of the questions presented in the paper questionnaire and the data provided by the patient safety educational module (Melon et al., 2013). It is for this reason that I was committed to implementing this project; however, the preliminary data ultimately directed and dictated the actual long-term goals of this project.

Plan Evaluation

This evaluation plan identified five health care providers who had experience in working with "EHR" interfaces. I planned to increase nurses' knowledge by using a patient safety educational module to teach nurses about the problem and ways to improve

how they use "EHR" interfaces to reduce wait times. In addition, I used the 4-point

Likert-type scale questionnaire to collect data to support the hypothesis that the "EHR"

interfaces have areas in need of improvements. Considering the influence that "EHR"

interfaces have on health care delivery and clinical practice, it was imperative to identify

the clinical problem. To ensure that the guides were useful for the intended audience

(e.g., leaders of quality improvement, IT professionals, developers of "EHR" interfaces,

and clinicians), participants were from a small range of diverse groups of anticipated

users from professional organizations. I undertook many patient safety module revisions

to improve interpretability and applicability by individuals with different levels of

expertise. In addition, I considered the individual "EHR" interface adoption journeys of

those working at different points within the organization. Through the project process, I

used the best health care provider's and evidenced-based practices for the patient safety

educational module review. Finally, I used an Excel spreadsheet to evaluate the data

collected from the questionnaire and then reviewed objectives. Since 100% of

participants agreed that the content of the patient safety module was valid, I considered

the objectives achieved.

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Summary

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This chapter discussed the project's rationale and methodological approach. In

addition, I also discussed the context, stakeholders, ethical protection, variables,

outcomes, instruments, validity, reliability, strategies, time and resource constraints,

long-term goals, and evaluation plan. The method of this project was quantitative,

interpreted by creating an Excel spreadsheet, and analyzed on the project tool feasibility

results table. The evaluation plan specified the feasibility of the project on Table 1 and

provided the foundation for the assessment of the impact of this project development and

validation.

Section 4: Discussion and Implications

Evaluation of Findings

This project entitled "Development and Content Validation of an Emergency Department EHR Safety Educational Program" was approved by Walden University IRB (Reference # 12-02-15-0372334) and was overseen by Walden committee members. I designed the project to provide a manageable, cost effective approach to reducing wait times in the ED. Participants agreed that the content of the educational module was helpful and that they would recommend it to other health care providers. I limited the project in scope and scale, leaving future work to be done on taking participant opinions and making corrections to the patient safety module. Expanding on this project could lead to improvements in outcomes. The outcomes and evaluation of this small project showed wait times can be reduced with a large-scale population intervention.

The findings of this quantitative project showed positive outcomes on many levels. The patient safety module worked as intended, and clearly identified that wait times increase after the implementation of "EHR" software interfaces. The patient safety educational tool may also help nurse leaders and the American Federation of Government Employees (AFGE) union president ensure that needed nursing interventions can be undertaken across organizations. This study achieved the outcomes I had expected, including the identification of high risks for wait times and the implementation of specific interventions by the AFGE union president. At the Department of Veteran Affairs, a nurse cannot conduct a research project without the permission of the AFGE president. My second outcome expectation—that there would be a significant relationship

between the patient safety module and participants' understanding of the information—was also achieved. I screened five health care providers using a questionnaire to determine if the time they spent on reviewing the patient safety module was helpful. Finally, my third outcome expectation—that the patient safety module was easy for participants to read—was achieved.

Discussion of Findings

One of the fundamental findings in this project was the importance of interdisciplinary teamwork. I found that interdisciplinary teamwork ensured a reduction in wait times, and that it led to corrections of" EHR" software applications. After I graduate, I will orient the interdisciplinary team to the project. The clinician-guided information module evaluation tool will be key to the successful implementation of crucial interventions designed to fill the gaps that many staff experience when using the "EHR" interfaces. Medication management, staff self-management, and functional "EHR" interfaces are a few things that I found needed to be addressed as health care evolves into the 21st century. It was difficult for me to correlate prolonged wait times with "EHR" interfaces until I created and administered the paper questionnaire. Once I had identified the wait time problem, the implementation of the clinical-guided information module evaluation tool and patient safety module went very well with all participants.

Project Feasibility Tool

Five registered nurses and one physician completed and evaluated the module. Directly following dissemination of the module, I asked each participant to fill out an evaluation noting their experience with this type of educational tool. There were a total of 10 questions (See Appendix D), with eight questions designed to be answered using a 4-point Likert scale, and two questions designed to elicit "narrative descriptions" (Polit & Beck, 2012, p. 53). Table 1 provides a summary of all participant project tool feasibility results. Below is the descriptive analysis of the data (Polit & Beck, 2012). The anchors on the Likert scale were as follows: 1= Poorly/Not at all; 2= Slightly/Unlikely; 3= Adequately/Most Likely and 4= Excellently/Definitely.

Table 1

Project Tool Feasibility Results

Question	Domain	Registered Nurse N=4			Physician N=1		
		"3" (%)	"4" (%)	Mean	"3" (%)	"4" (%)	Mean
1. How well did this module assist you in understanding the electronic health record process?	Content	(0)	(100)	3.8	(100)		4.0
2. How well did this module assist you in establishing strategies to improve how to operate the electronic health record?	Content	(25)	(75)	3.8		(100)	4.0
3. How helpful was the module in understanding the barriers of electronic health records?	Content	(0)	(100)	3.8	(100)		4.0
4. How helpful was this type of modular experience in guiding you through the content?	Process	(0)	(100)	4.0		(100)	4.0
5. Was the module easy to read?	Design	(0)	(100)	4.0		(100)	4.0
6. Were the images in the module helpful in understanding the content?	Design		(100)	3.8	(100)		4.0
7. Was this module time well spent?	Time		(100)	4.0		(100)	4.0
8. Would you recommend the use of this clinician-guided module to other nursing staff?	Overall		(100)	4.0		(100)	4.0

Note. Results: 3 = Adequately/Most Likely; 4 = Excellently/Definitely on a 4-point Likert Scale.

I explicitly designed Questions 1, 2, and 3 to gather information to establish if the module satisfied its intended learning objectives and purpose (Donnelly & Fitzmaurice, 2005). One hundred percent (*N = 5)* of all respondents who participated in this initial assessment found the module to be at least adequate. Question 4 assessed how helpful the respondents found the clinician-guided process. Questions 5 and 6 established design satisfaction. I intended Question 7 to measure how all participants regarded the time-benefit ratio. Question 8 measured overall satisfaction with the module. Lastly, Questions 9 and 10 were open-ended qualitative items concerning the strengths and weaknesses of the module.

Health Care Provider Evaluation Data

Content. Four out of five participants (80%) noted that Question 1, which addressed modular content, "Excellently/Definitely" assisted their understanding of the content of the educational module. One hundred percent of the respondents *(N = 5)* answering Question 2 felt that the module "Excellently/Definitely" assisted them and that the content of the educational module was beneficial for educational purposes in health care organizations. Further, all participants *(N = 5)* responded to Question 3 by noting that the module "Definitely" helped them in understanding the pros and cons of problems in health care organizations after the implementation of "EHR" software interfaces.

Process. All participants *(N = 5)* responded to Question 4 by noting that the modular experience was "Definitely" helpful in guiding them through the content.

Design. One hundred percent of the respondents *(N = 5)* answered Questions 5 and 6 by noting that the module was "Definitely" easy to read. Additionally, all

participants ($N = 5$) answered Question 7 by noting that the modular images
"Excellently/Definitely" were helpful in understanding the content.

Time. One hundred percent of the respondents ($N = 5$) believed that the modular
experience was "Definitely" time well spent. As a result, all respondents (100%) left the
area available for comment blank.

Overall. Question 10 determined an overall rating of the module and whether
respondents would recommend its usage to other providers using "EHR" systems. One
hundred percent of all participants ($N = 5$) stated that they would "Definitely"
recommend the use of the clinician-guided module to other colleagues.

Strengths. One hundred percent of the participants ($N = 5$) found the module
content to be "great," "understandable," and to have been "exhaustive of information."
All participants (100%) positively commented on the module's educational content
graphics, with no respondent (0%) specifically identifying any problems or complaints
with the graphics. Lastly, all respondents (100%) stated they found the module to be an
"excellent tool in combination with guidance from the provider."

Weaknesses. The feedback provided by the healthcare participants noted that the
module could be more mathematical-driven than technical. One respondent (20%)
suggested that the module "would benefit from adding more data" and one respondent
(20%) commented that the module "did not address other problems associated with
increased wait times." Lastly, one healthcare provider (20%) felt the language in the
module might need to be "lowered" so "health care providers would not be apprehensive
by the technical language."

In summary, all participants (100%) reported that this module was helpful, well-designed, valuable, and a positive learning experience that should be shared with others. Additionally, all health care provider participants (100%) noted that the module was "Excellently" designed and was "Definitely" helpful, valuable, and would be recommended to other providers. The information obtained from the project tool feasibility testing supports the use of the patient safety module as a viable educational tool for emergency department staff. Consequently, I may use respondents' recommendations to further strengthen and revise the patient safety module. Finally, the evaluation process afforded me an evidenced-based infrastructure to examine pertinent information regarding the eventual viability of "implementing a clinician-guided module" after my graduation.

Implications

The results of this DNP project provided important information for the nursing leaders at the Department of Veteran Affairs. This project was an attempt to evaluate formally an empowered work environment using the professional practice model through nurses' perceptions. Research has shown that the work environment characteristics affect the nurses' feelings of empowerment. Actions by nurse leaders should bring awareness to these areas using the shared governance structure of the organization to obtain additional information from nurses regarding deficits. The opinions of clinical nurses will be essential when planning future actions to strategize goals and directions. Further investigation through structured questionnaires and focus groups could elicit the reason behind nurses not feeling that they have adequate time or materials to do their job, and

could also define what guidance and feedback they feel is missing from their leaders and peers. These two areas which lack resources and support could very well be contributing to the nurses' perception that they do not possess a formal degree of power.

The future of health care has the need for increased emphasis on interprofessional collaboration by health care providers (Park, Hawkins, Hamlin, Hawkins, & Bamdas, 2014). The medication reconciliation process can be improved by the interaction between pharmacy and nursing. Interprofessional collaboration for staff with leaders can also result in improvements in the "EHR" interfaces, leading to reduced morbidity and health care costs (Park et al., 2014).

The project proved important to practice at the Department of Veteran Affairs, as the patient safety module served to focus on increased wait times problems with care being provided. Thus, my plan after graduation will be to create opportunities for the team to work on identified problems and pilot changes in process that can improve patient outcomes. The project served as an audit centered on health care providers that enabled the team to transfer resources to the greatest areas of weakness. The role of the dean of the AFGE highlighted the need for further investigation processes regarding the safety concerns with the "EHR" interfaces such as increased wait times in the ED. The project shows promise for corrections with the application intervention of "EHR" interfaces to reduce wait times, improving the quality of care provided in the organization. In the case of the Department of Veteran Affairs specifically, the project has offered insight into how processes can be both standardized to reduce variation in services provided and tailored for departmental needs.

Project Strengths and Limitations

One of the strengths of the project has been the collaboration of multiple disciplines in validating the content of the patient safety module. The paper questionnaire proved beneficial in not only identifying high risk problems with the "EHR" interfaces, but also determining if the patient safety module should be used. Also, the data gathered from participants that are built into the project feasibility tool created a standard for health care providers to share the valuable information with leaders at their organization in the future. Another benefit of the paper questionnaire was that it helped pinpoint strengths and weaknesses with the applications in the "EHR" interfaces. The health care provider's involvement in this project proved to be very strong as all participates were given a questionnaire to voice concerns and add value to the patient safety module.

I designed the project around making corrections to the patient safety module to ensure that the content of the module was beneficial. That was a strength but also a limitation. Certainly having one person following the five health care providers in the project proved beneficial. However, it is likely not a sustainable direction to use penalties for prolonged wait times that may lead to life-sustaining injuries. Based on the strength of the questionnaire, which was proven to help reduce wait times, the primary nurses' role should be further explored for participation in hospital preparation for improvements in the "EHR" interfaces.

One challenge was gathering the health care providers at the local library on the same day without seeing each other. Additionally, the Clinical-Guided Information Module tool can be made clearer with greater clarification of who handles carrying out

the interventions. Based on the interventions carried out on the health care providers, it appears that the health team would have benefited from improvements in the "EHR" interfaces based on the individual work that needed to be carried out. Revisions for remediation of limitations would begin with modifying the Clinical-Guided Information Module tool to be made clearer and color-coded to ensure the multidisciplinary team can carry out interventions promptly.

Analysis of Self

I am currently working in Department of Veteran Affairs as a staff nurse in the Emergency Department. My focus has been on leadership. My main goal in obtaining my DNP has been to advance my education in a way that would enable me to bring improvements in nursing practice to the organization and clinical practice. I have gained a great deal of respect for my fellow colleagues and classmates and their varied degree of expertise. I am grateful for their many experiences along with examples shared throughout my courses. I have completed my practicum hours in Geriatrics alongside a doctor of nursing practice who is a remarkable example of how a professional nurse can care for a community. When considering patient-centered approaches to care, this mentor has served as a wonderful example of keeping the focus on the patient. My hours have been very exciting as we experience the many changes occurring in health care.

Projects involving evidence-based practice can be very challenging with the varying personalities and disciplines involved. In my experience in this profession and from my practicum, communications and perceptions are key factors in either solving patient care issues or using evidence-based practice to make change in practice. When

considering leadership, relationships play a vital role in creating personal investment or alignment. One of the four key domains of competencies is needed by nurse leaders (Manion, 2005). In reflecting on the courses and my practicum setting, I have been in leadership positions that have enabled me to tap into resources and expertise quickly. An example was when we were planning the treatment care plan for the patients. I was already very familiar and often met with these leaders. These relationships made accomplishing some of the tasks at hand much easier.

It is a challenging time for leadership in nursing as health care changes rapidly. I had stated following nursing school that I would never lead nurses. Quite the opposite has been true. As a leader and now in establishing relationships for my practicums, social competencies have played an important role in my success. The leader must be emotionally intelligent at not only the individual level but social as well. Manion (2005) described social awareness as recognition and social competence. If there is no relationship, then the leader's ability to effect change is greatly deteriorated from the onset. I have been able to form good relationships with many at my practicum site; this has helped with the process of change. In fact, in many cases it would have been difficult if not impossible to get any idea off the ground without foundational relationships. My experience around this project with respect to changing practice based on evidence will improve from exercising these skills. This will come from leveraging upper management and using evidence-based research to improve patient care. However, being honest about where I am in the growth process and inviting others to join the journey will continue to be helpful in making organizational change.

Advanced Nursing Practice

Reducing prolonged wait times in health care can save lives and improve patient outcomes. The DNP Essentials (American Association of Colleges of Nursing [AACN], 2006) address the specific core competencies necessary for advanced practice in nursing. The practicum experience and project outlined here specifically address the following DNP essentials:

- Essential I: Scientific Underpinnings for Practice,

- Essential VI: Inter-Professional Collaboration for Improving Patient and, Population Health Outcomes, and

- Essential VII: Clinical Prevention and Population Health for Improving the Nation's Health. (AACN, 2006)

The AACN Essentials assist with articulating the level of practice that the DNP specialty nurse must practice. The work on the project has offered some great opportunities to open the eyes of others through examining the literature and my research project. Just as my perception has changed during the practicum and coursework process, so can the perception of my fellow nurses through involvement in evidence-based practice by being an active participant in making change. Walsh (2010) explained evidence-based practice as a process that enables holistic and individualized care to be developed in a way that uses best practices in caring for patients. Educating and leading from this level of nursing will ensure the next generation of nurses is prepared to provide effective and safe patient-centered care.

Implications for Health Outcomes and Policy

There are not only gaps in the implementation of new initiatives but also in the knowledge of staff in understanding these gaps. Creating tools that place emphasis on patient safety issues will help clinical practice by reducing wait times and enable links to services that currently do not exist. Hospitals are making needed adjustments in reducing the issues of "EHR" interfaces based on penalties being imposed by the Centers for Medicare and Medicaid Services. The steps being taken are long overdue, but should still be based on staff opinions rather than penalties incurred due to clinician mistakes. Patients continue to be treated more quickly, which reduces the length of stay, only inviting readmissions to occur. After I graduate, the plan is to revamp the system and other aspects of the health care curve that have not caught up. Pushing patients to be treated quicker requires health care to be operationally prepared as systems that link the continuum of care. This project has highlighted opportunities to improve health care policy around the use of "EHR" interfaces in clinical practice. Lower lengths of stay can be maintained if post-acute services are aimed at linking future care to interventions provided in acute care settings.

Summary

Walsh (2010) stated that, in order to provide services in today's health care landscape, hospitals need to be adaptable and flexible to be able to accommodate changes while ensuring that nurses provide the quality expected by those using the services. In thinking about health promotion and disease prevention in relation to prolonged wait times, there are many initiatives related to the safety concerns of "EHR" interfaces such

as increased wait times, as it is an international clinical practice issue. The advanced practice nurse (APN) is in the ideal role to provide the type of coaching and ongoing support in the weeks following the educational experience.

Any intervention that helps reduce wait times in facilities will improve patient quality of life, reduce patient safety risks, and lower healthcare costs is a step in the right direction. My fundamental understanding of evidence-based practice has evolved from the courses throughout the DNP program. While it has been stated that a DNP-prepared nurse has ethical and professional obligations related to disseminating findings, I would challenge that all registered nurses (RNs) should take up this responsibility. My perception of the "EHR" interfaces' safety issues related to an increase of wait times has changed in that it is much more complicated than previously imagined or studied. Increasing my knowledge regarding increased wait times has helped me begin and narrowed my attention to hone in on aspects in which I can effect change. In the short-term, there are no costs related to improving the application function of the "EHR" interfaces. However, the long-term results show promise in improving wait times and identifying the safety concerns of "EHR" interfaces at no cost.

Section 5: Scholarly Product

Executive Summary

This DNP project was designed to evaluate the content of a patient safety module used to identify user difficulties when operating "EHR" interfaces. To prepare this project, I examined research conducted through effective dissemination planning as a necessary step that underpinned the clinical learning required of health care providers (AACN, 2006, p. 11). For these reasons, I initiated a questionnaire evaluation at the onset of the project to provide a foundation that has allowed me to map the project's development (Stetler et al., 2006).

The first phase of this project was to initiate an evaluation of the clinician-guided information module to assess tool feasibility. I analyzed findings to evaluate data that might strengthen the patient safety module content after project approval. In what follows, I offer an executive summary to identify background information, initial project findings, and recommendations for future project study. I also outline a dissemination plan, including ultimate plans for publication.

Background

The Department of Veteran Affairs administration had scant evidence-based literature that addressed EHR safety concerns in emergency departments (Walden University, 2011a). Additionally, this specialty area was driven by staff involvement rather than standardized practice competencies. This lack of literature and limited practice competencies signaled to me the need for the creation of this project. The first phase of this project was thus to evaluate the patient safety module by securing a group of

health care providers and having them participate in this type of modular educational experience. My main objective in pursuing this type of project feasibility testing was to obtain evaluation findings that could be used to strengthen the content validity of the patient safety module prior to pilot study implementation after my graduation (Polit & Beck, 2012). I gave a group of five health care providers consisting of four registered nurses and one physician the opportunity to review the patient safety module (See Appendix C). Directly following completion of the module, I asked all participants to evaluate their experience using 10 questions that focused on content, process, design, time, and overall feelings about this type of educational experience. Eight questions were rated on a 4-point Likert scale. However, two questions were qualitative, and designed to gather narrative commentaries from the respondents (Polit & Beck, 2012).

Initial findings obtained from the feasibility testing revealed that all healthcare providers ($N = 5$) found the module to be the type of educational tool they would recommend to others. Additionally, all participants ($N = 5$) rated the various questions no less than a three (Adequately/Most Likely), with most scores tracking at a four (Excellently/Definitely). Although the sample size of stakeholders used for testing the educational tool was small, the initial results support the content validity of this module. Thackeray, Neiger, Hanson, and McKenzie (2008) suggested that when stakeholders are involved in the process and believe their needs are being met, the potential for successful evaluation outcomes improves wait times.

Proposal and Future Project Strengths

The strength of the project resided in my ability to initiate discussion and garner support for future study. Further, project feasibility testing of the module showed further project viability, as initial findings seemed to confirm the content validity of this instrument (Polit & Beck, 2012). Lastly, since emergency departments still lack standardization and are driven by staff input and recommendations rather than by competencies (Polit & Beck, 2012), a potential strength of this project would be to equip health care providers in this specialty with a valid tool that supports and facilitates improved outcomes such as reducing wait times.

Recommendations for Future Projects

My first recommendation is to apply project tool feasibility test findings to the patient safety module in order to strengthen its content validity (Polit & Beck, 2012). Further, I recommend increasing the sample size of respondents while continuing to evaluate the quality and strength of the patient safety module in order to produce outcomes that may be generalized beyond the sample population (Burns & Grove, 2009). However, my most salient recommendation would be to apply all project findings and information toward ultimate IRB submission for approval at the Department of Veteran Affairs after my graduation. Thus, I recommend to initial stakeholders that, since there is limited research focused on patients' needs and health care provider education and expectations prior to implementation of "EHR" interfaces, future study is warranted and should be pursued.

Dissemination Plan

Dissemination of information can be done in many ways so that evidence-based research may be applied effectively to clinical practice (Dudley-Brown, 2012). Ousley, Swarz, Milliken, and Ellis (2010) suggested that educational dissemination may positively affect the existing health care paradigm that guides practice, though not all methods of information distribution have been found to be effective. However, evidence-based research has indicated that "audiovisual/multimedia aids may increase comprehension and retention of educational materials" (Warren, 2013, p. 5). Thus, I am enthusiastic about the patient safety module's potential for improving wait times. I intend to apply the initial findings gathered from the project tool feasibility testing to strengthen and improve the module's content validity and hope that dissemination of this instrument may ultimately improve standardization within the emergency department subspecialty field.

PowerPoint Presentation

I will use PowerPoint as a vehicle for sharing initial project feasibility test findings because, as Dudley-Brown (2012) has suggested, the software provides a forum for presenting work that is still evolving and not yet completed. PowerPoint dissemination has the capacity to provoke increased collegial discourse and support for the beginning researcher, and thus provides a vehicle for distributing initial data findings that may not otherwise have been shared until the full implementation of a project (Forsyth, Wright, Scherb, & Gaspar, 2010).

Publication Aspirations

The peak of any evidence-based research is the successful translation of the projects findings (Dudley-Brown, 2012). I am a member of the American Nurse Association, and will seek to publish the project's initial findings within the association's professional journal. Sharing information that may improve distribution and standardization of staff education has the potential to create societal and programmatic change, while positively contributing to the ED and its patients. Finally, introducing initial findings that may provoke collegial interest and promote standardization within this subspecialty field may improve patient satisfaction and health care outcomes (Spear, 2010).

<div align="center">

Conclusion

</div>

Dissemination is an important aspect of the DNP role both in pursing evidence-based practice and peer education. I will make a PowerPoint presentation of my project to participants at the local library. My goal is to use the standard work created for the health care providers and move it to additional departments at risk for the safety concerns of "EHR" interfaces. I will track the long-term results of the project for inclusion for magnet designation and possible presentation at future professional nursing conferences. Most importantly, because nursing is evolving, helping RNs use evidence-based practice to bring the practice of nursing along ensures that patients remain the center of their care.

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Appendix A: Email Invitation to Participate

Dear Local Experts,

My name is Ursula Jernigan. You may already know me as a nurse in the Hampton, Virginia area, but I'm writing to you outside this role.

I am currently a doctoral student at Walden University, and I am investigating local expert perceptions regarding medication errors when using EHRs software interfaces. The project is being overseen by Walden University.

I would greatly appreciate your participation.

This would involve completing a questionnaire at a private location face-to-face. The questionnaire will take about 10 minutes to complete.

I'll send a separate invitation for that. The information from the questionnaire will be kept strictly confidential, and no one who participates will be identified in any of the project's report that I prepare.

If you have any questions about the project, please feel free to email me.

If you are interested in participating in the study, let me know by email, and I will send you full instructions and a Consent form.

Thank you in advance for your consideration and assistance with my research project.

Sincerely,

Ursula Jernigan RN, MSN

Instrument (10 items), which will take approximately 5 to 10 minutes.

Electronic signatures are regulated by the Uniform Electronic Transactions Act. Legally, an "electronic signature" can be the person's typed name, their email address, or any other identifying marker. An electronic signature is just as valid as a written signature as long as both parties have agreed to conduct the transaction electronically.

Appendix B: Consent Form

You are invited to take part in a research project exploring the best way to learn the nurse perception regarding the effectiveness of the electronic health record. The researcher is inviting local experts who are between the ages of 21-64, and that have experience using the electronic health record, to participate in the project. This form is part of a process called "informed consent" to allow you to understand this project before deciding whether to take part.

This project is being conducted by a researcher named Ursula Jernigan, who is a doctoral student at Walden University.

Background Information:
The purpose of this project is evaluate a proposed educational module to identify user difficulties when operating an EHR software interfaces.

Procedures:
If you agree to be in this project, you will be asked to:
- Complete a 5-7 minute paper questionnaire and return the questionnaire in a sealed envelope

Here are some sample questions:
1. How well did this module assist you in understanding the electronic health record process?
    a) 1= Poorly/Not at all
    b) 2= Slightly/Unlikely
    c) 3= Adequately/Most Likely
    d) 4=Excellent/Definitely

2. If the time was NOT well spent, please explain why.

Voluntary Nature of the Project:
This project is voluntary. Everyone will respect your decision of whether or not you choose to be in the project. No one at Walden University will treat you differently if you decide not to be in the project. If you decide to join the project now, you can still change your mind later. You may stop at any time.

Risks and Benefits of Being in the Project:
Being in this type of project involves some risk of the minor discomforts that can be encountered in daily life. A potential benefit of participating in this project is your contribution to the established body of knowledge that guides healthcare delivery in the field of Emergency Medicine.

Payment:
After completion of your paper questionnaire no payment will be rendered.

Privacy:
Any information you provide will be kept confidential. The researcher will not use your personal information for any purposes outside of this research project. Also, the researcher will not include your name or anything else that could identify you in the project reports. Data will be kept secure in a locked file cabinet. A single key will be securely placed in a location other than where the data resides. Data will be kept for a period of at least five years, as required by the university.

Contacts and Questions:
You may ask any questions you have now. Or if you have questions later, you may contact the researcher via email. If you want to talk privately about your rights as a participant, you can call a Walden University representative who can discuss this with you. Walden University's approval number for this project is **IRB will enter approval number here** and it expires on **IRB will enter expiration date.**

The researcher will give you a copy of this form to keep.

Statement of Consent:

I have read the above information and I feel I understand the project well enough to make a decision about my involvement. By signing below "I consent", I understand that I am agreeing to the terms described above.

Printed Name of Participant _____

Date of Consent _____

Participant's Signature _____

Researcher's Signature _____

Appendix C: Patient Safety Module

Reducing Medication Errors in the Emergency Department

Ursula Jernigan RN, MSN
Walden University

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Medication Errors

- Common medication errors identified consists of equipment failure, incorrect dose or medication dispensed, and duplicate order entries (Iyer, Leone, & Zapatochny Rufo, 2015). Identifying the medication errors can reduce safety concerns and improve quality of care. Usability directly affects the end users ability to correctly use the technology in achieving safe, competent patient care (Iyer et al., 2015).

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Patient Flow Improvements

- Patient flow determines how fast an individual is seen from the time they arrive at the door until they are seen by the physician. At this time the physician determines if the patient need to be admitted, discharged, or transferred(Johnson et al., 2012, p. 237). If care is not rendered in a timely manner it leads to safety risk for the general public (Fawcett & Garity, 2009, 76). Effective strategies have to be in place to reduce these risks and increase patient satisfaction. Providing good quality care is the responsibility of all clinicians in healthcare. As an advanced practice doctoral nurse it is our responsibility to become leaders that use evidence based practice research and implement it into practice.

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Theory of Comfort

- Reducing increase tension of the patient or family will improve health seeking behaviors (McEwen & Willis, 2011, p. 234). Establishing a healthy relationship with the patient will improve the trust that the patient will have with the clinician. Once the patient is comfortable with the provider the patient will feel comfortable to ask the clinician any questions that they will have regarding their care. This is the time the clinician will have to answer any questions and provide the patient with detailed information regarding their care to reduce return visits and improve patient compliance (McEwen & Willis, 2011, p. 236).

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PICO QUESTION

- P-Poor patient flow in the ED. Increase in medication errors.
- I- Shorten triage process to three to five minutes. Educate the staff regarding the use of EHRs.
- C-No shortening of triage, increase in medication errors, and lack of education.
- O-Improve patient flow and reduce medication errors.

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Social Significance

- Improving patient flow is socially significant because of its major affects on the general public (Fawcett & Garity, 2009, 76). Congestions in the emergency department lead to delays on care, increase left without being seen, and poor quality of care(Johnson et al., 2012, p. 237). This leads to poor patient outcomes, increased disabilities, and increased mortality/morbidity rates(Johnson et al., 2012, p. 237).

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Triage Template

Template Continues

Problems Identified in Template

- In this template the triage nurse has to ask the patient when their last menstrual period and if there is any possibility of being pregnant. Plus, ask if the woman has had a hysterectomy or menopausal. In addition, all the sections above plus the following sections that include neglect/abuse, Identification of Tort, and the objective assessment can all be moved to the assessment note in the treatment area.

- I have spoken with the AFGE Union President regarding the problem identified with the length of the triage note. I will continue to work with Dr. Elliott after graduation to possibly create a new triage template that can be implemented into the ED after graduation.

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Duplicate Medication Error

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Strategies

- Clinicians adhering to time constraints will improve patient flow by reducing the patient length of stay (Sander, 2013, p. 34).
- Improving triage process by implementing tools that will allow the clinician to obtain pertinent information within three to five minutes will reduce wait times (Sander, 2013, p. 34).
- Reducing wait times will reduce patient safety risk regarding health concerns (Sander, 2013, p. 34).
- Ensuring adequate staff is on the schedule to work will reduce wait times, improve patient outcomes, and safety concerns (McEwen & Willis, 2011, p. 234).
- Alerts in the EHRs will inform the staff that orders are written by physicians in a timely manner.

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Appendix D: Clinician-Guided Information Module Evaluation

Person completing the questionnaire (circle one): **MD/DO NP/PA RN PATIENT**

Please rate your experience with the clinician-guided module by putting a number in each box. See scoring scale below	
Scoring 1= Poorly/Not at all 3= Adequately/Most Likely 2= Slightly/Unlikely 4= Excellently/Definitely	
1. How well did this module assist you in understanding the electronic health record process?	
2. How well did this module assist you in establishing strategies to improve how to operate the electronic health record?	
3. How helpful was the module in understanding the barriers of electronic health records?	
4. How helpful was this type of modular experience in guiding you through the content?	
5. Was the module easy to read?	
6. Were the images in the module helpful in understanding the content?	
7. Was this module time well spent?	
a. If the time was NOT well spent, please explain why?	
8. Would you recommend the use of this clinician-guided module to other nursing staff?	
9. Please list the weakness(es) of this module. **Please list suggestions for improvement**.	
10. Please list the strength(s) of this module.	

Appendix E: Permission to Use Questionnaire

Gmail by Google

Ursula Jernigan ██████████████████

Permission to use Questionnaire

4 messages

Ursula Jernigan ████████████████

Thu, Sep 24, 2015 at 9:37 PM

To: Hermine Warren ██████████████████████████████████

Hello Ms. Warren,
I am writing you to ask permission to use the questionnaire that you used in your DNP project. I have modified the questionnaire to fit my project on the Development and Content Review of a Safety Educational Program for an Emergency Department within a Health Care Institution. I can be reached via email or ██████████████.
Thanks,
Ursula Jernigan

Mail Delivery Subsystem <mailer-daemon@googlemail.com>

Thu, Sep 24, 2015 at 9:37 PM

To: ursula.jernigan@waldenu.edu

Delivery to the following recipient failed permanently:

██████████████████

Technical details of permanent failure:
Google tried to deliver your message, but it was rejected by the server for the recipient domain yahoo.com by mta7.am0.yahoodns.net. [63.250.192.46].

The error that the other server returned was:
554 delivery error: dd This user doesn't have a yahoo.com account ████████████████████
[-5] - mta1674.mail.gq1.yahoo.com

----- Original message -----

X-Google-DKIM-Signature: v=1; a=rsa-sha256; c=relaxed/relaxed;
    d=1e100.net; s=20130820;
    h=x-gm-message-state:mime-version:date:message-id:subject:from:to
     :content-type;
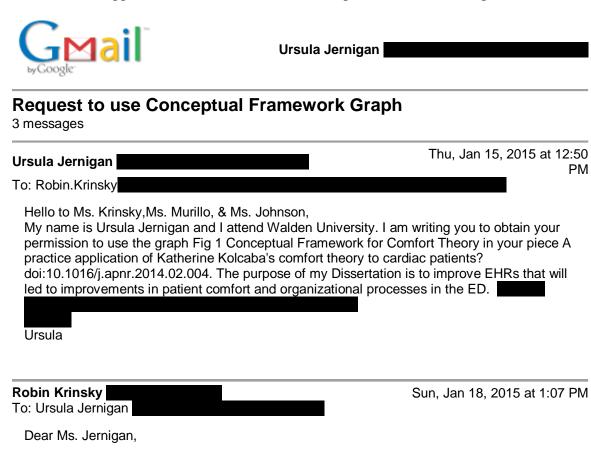   bh=Q6jj0KVN3OjYPavJmNxfDL3z49UpaJgKlr3zgRGQHOk=;
    b=hMWXIvw+v3qlHvPR0wyF+EPnpcozVVJvFoQafLTbg9BkdvuKHX1KfXdZgv+nFd0qBl
     2bpioZmQNLlgpDb4ltzM5mwkTJNIhvy4k7tG3WeBjUmo3KuJ87dFEim9iVfgQzAIPvdO
     2o6/k9PflNleRB2cyCluTaXx83+RuZCGDPwDse15+wFkgdFt8zNi3dpwM7JeRve8dfSF
     jGo4GP5msPuqmcCE8pfwWHrwlcLdNn/BfjrgHAWjq42OYlbXqocGRfejW2/9bRu0aJT9

OznRkPuv0YiHvppMOMTWvbbWw/36696sObOqbDudiQ/Eg6R0KeJZhTQwzisyyRANH E2W

SsUg==

X-Gm-Message-State:
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MIME-Version: 1.0
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 Thu, 24 Sep 2015 18:37:13 -0700 (PDT)
Received: by 10.202.85.133 with HTTP; Thu, 24 Sep 2015 18:37:13 -0700 (PDT)
Date: Thu, 24 Sep 2015 21:37:13 -0400
Message-ID: <CA+zH4KKv-
wG6ZNUxJ1X15cHqVEWvVEJdtU9mx8NFzGOEjkGmag@mail.gmail.com>
Subject: Permission to use Questionnaire
From: Ursula Jernigan █████████████████████
To: Hermine Warren █████████████████████████████████
Content-Type: multipart/alternative; boundary=047d7b3a7e501334a005208863fc
[Quoted text hidden]

Hermine Warren ████████████████████   Fri, Sep 25, 2015 at 10:26 AM
To: Ursula Jernigan ██████████████████

Dear Ursula,

You may use the questionnaire as long as you properly site it (APA) within your project.

Regards,

Dr. Warren

[Quoted text hidden]
--
Hermine Warren, DNP, APRN, CANS, CNM

████████   ███████████████████

phone: ████████████████
e-mail: ██████████████████

Ursula Jernigan ███████████████████   Fri, Sep 25, 2015 at 11:00 AM
To: Hermine Warren ████████████████████

Hello Dr. Warren,
Thank you so much!
Ursula
[Quoted text hidden]

Appendix F: Permission to use Conceptual Framework Graph

Gmail by Google™   **Ursula Jernigan** ███████████████████

Request to use Conceptual Framework Graph
3 messages

Ursula Jernigan ███████████████████   Thu, Jan 15, 2015 at 12:50 PM

To: Robin.Krinsky ████████████████████████████████

Hello to Ms. Krinsky,Ms. Murillo, & Ms. Johnson,
My name is Ursula Jernigan and I attend Walden University. I am writing you to obtain your permission to use the graph Fig 1 Conceptual Framework for Comfort Theory in your piece A practice application of Katherine Kolcaba's comfort theory to cardiac patients? doi:10.1016/j.apnr.2014.02.004. The purpose of my Dissertation is to improve EHRs that will led to improvements in patient comfort and organizational processes in the ED. ████████
████████████████████████████████████
████████

Ursula

Robin Krinsky ████████████████   Sun, Jan 18, 2015 at 1:07 PM
To: Ursula Jernigan ██████████████████████

Dear Ms. Jernigan,

You have our permission to use the figure in your dissertation. Good luck with your work.
[Quoted text hidden]
--
Robin S. Krinsky, RN-BC, MSN, CCRN

Ursula Jernigan ███████████████████   Sun, Jan 18, 2015 at 9:15 PM
To: Robin Krinsky ████████████████

Hello Ms. Krinsky,
Thank you so much!
Ursula Jernigan
[Quoted text hidden]

Appendix G: 5-page Project Findings

Development and Content Validation of an Emergency Department EHR Safety

Educational Program

Findings

Ursula R. Jernigan

December 3, 2015

Dear Local Experts,

My name is Ursula Jernigan and I want to thank you for participating in my project. I am sending this email to share the findings of the project.

Table 1

Project Tool Feasibility Results

Question	Domain	Registered Nurse N=4			Physician N=1		
		"3" (%)	"4" (%)	Mean	"3" (%)	"4" (%)	Mean
1. How well did this module assist you in understanding the electronic health record process?	Content	(0)	(100)	3.8	(100)		4.0
2. How well did this module assist you in establishing strategies to improve how to operate the electronic health record?	Content	(25)	(75)	3.8		(100)	4.0
3. How helpful was the module in understanding the barriers of electronic health records?	Content	(0)	(100)	3.8	(100)		4.0
4. How helpful was this type of modular experience in guiding you through the content?	Process	(0)	(100)	4.0		(100)	4.0
5. Was the module easy to read?	Design	(0)	(100)	4.0		(100)	4.0
6. Were the images in the module helpful in understanding the content?	Design		(100)	3.8	(100)		4.0
7. Was this module time well spent?	Time		(100)	4.0		(100)	4.0
8. Would you recommend the use of this clinician-guided module to other nursing staff?	Overall		(100)	4.0		(100)	4.0

Note. Results: 3 = Adequately/Most Likely; 4 = Excellently/Definitely on a 4-point Likert Scale.

Questions 1, 2, and 3 were explicitly designed to gather information that established if the module satisfied its intended learning objectives and purpose. One hundred percent (n = 5) of all respondents who participated in this initial assessment found the module to be at least adequate if not definitely. Question 4 assessed how helpful the respondents found the clinician-guided process. Questions 5 and 6 established design satisfaction. Question 7 was intended to measure how all participants regarded the time-benefit ratio. Question 8 measured overall satisfaction with the module. Lastly, Questions 9 and 10 were open-ended qualitative items concerning the strengths and weaknesses of the module.

Health Provider Evaluation Data

Content. Four out of five health care providers (80%) noted that Question 1, which addressed modular content, "Excellently/Definitely" assisted their understanding of the content of the educational module. One hundred percent of the respondents (n = 5) answering Question 2 felt that the module "Excellently/Definitely" assisted them in establishing the content of the educational module was beneficial for educational purposes in health care organizations. Further all participants (n = 5) responded to Question 3 by noting that the module "Definitely" helped them in understanding the pros and cons of problems in health care organizations after the implementation of EHR software interface into practice.

Process. All participants (n = 5) responded to Question 4 by noting that the modular experience was "Definitely" helpful in guiding them through the content.

Design. Questions 5 and 6 were answered by 100% of the respondents (n = 5) reporting that the module was "Definitely" easy to read. Additionally, all participants (n = 5) answered Question 7 by noting that the modular images "Excellently/Definitely" were helpful in understanding the content.

Time. One hundred percent of healthcare provider respondents (n = 5) believed that the modular experience was "Definitely" time well spent. As a result, all respondents (100%) left the area available for comment blank.

Overall. Question 10 determined an overall rating of the module and whether respondents would recommend its usage to other providers using EHR systems. One hundred percent of all participants (n = 5) stated that they would "Definitely" recommend the use of the clinician-guided module to other colleagues.

Strengths. One hundred percent of the participants (n = 5) found the module content to be "great," "understandable," and to have been "exhaustive of information." All participants (100%) positively commented on the module's educational content graphics, with no respondent (0%) specifically identifying any problems or complaints with the graphics. Lastly, all respondents (100%) stated they found the module to be an "excellent tool in combination with guidance from the provider."

Weaknesses. The feedback provided by the healthcare participants was noted to be more mathematical-driven than technical. One respondent (20%) suggested that the module "would benefit from adding more data" and one respondent (20%) commented that the module "did not address other problems associated with increased wait times." Lastly, one healthcare provider (20%) felt the language in the module might need to be

"lowered" so "health care providers would not be apprehensive by the technical language."

In summary, all patients (100%) reported this module was helpful, well-designed, valuable, and a positive learning experience that should be shared with others. Additionally, all health care providers (100%) noted that the module was "Excellently" designed and was "Definitely" helpful, valuable, and would be recommended to other providers. The information obtained from the project tool feasibility testing supports the use of the patient safety module as a viable educational tool for emergency department staff. Consequently, respondents' recommendations may be used by the researcher to further strengthen and revise the validity of the patient safety module. Finally, the evaluation process afforded the researcher with an evidenced-based infrastructure to examine pertinent information regarding the eventual viability of "implementing a clinician-guided module" after graduation.

Sincerely,

Ursula Jernigan RN, MSN

Appendix H: NIH Certificate

Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that **Ursula Jernigan** successfully completed the NIH Web-based training course "Protecting Human Research Participants."

Date of completion: 08/15/2015

Certification Number: 1813731