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Utilization of a Simulation Electronic Documentation Model for Healthcare Providers to Reduce Documentation Errors in a Hospital Setting

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Utilization of a Simulation Electronic Documentation Model for Healthcare Providers to Reduce Documentation Errors in a Hospital Setting

A DNP Project Submitted to the
Graduate Faculty
of Jacksonville State University
in Partial Fulfillment of the
Requirements for the Degree of
Doctor of Nursing Practice

By

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Abstract

Background: Electronic health records (EHRs) are commonly used within healthcare systems across the United States. Although EHRs were developed to provide safe delivery of care, poor documentation quality remains a problem. Poor HER documentation can negatively affect many patients' health outcomes.

Purpose: The purpose of the DNP project was to determine the degree to which using a simulated electronic documentation model to train nurses on an acute care unit would decrease documentation errors, and missed care, and decrease missed opportunities for patient education in EHRs.

Methods: The theoretical framework was underpinned by the Donabedian model positing that factors associated with structure, process, and outcome should be evaluated in order to determine the quality of a health care system. The convenience sample of participants (n = 15) was full-time nursing staff assigned to an acute unit in an urban hospital. All the participants completed a training session using the documentation model pre-installed in the hospital's EHR system. All the participants completed structured chart reviews involving 19 documented items before, during, and after the intervention.

Results: The use of the documentation model for eight weeks helped to improve the quality of the nurses' structured chart reviews by a small degree, indicated by Cramer's V = 0.00 to 0.34. The target of 100% correct responses was not reached for 3/19 (15.8%) of the documented items.

Conclusion: The use of a simulated electronic record model resulted in a small to moderate level of significance reducing documentation errors. More training sessions are still required before 100% documentation quality can be achieved. Training sessions would be best if the

simulated documentation model is used during new employee hospital orientation before staff is released to the assigned units.

Keywords*:* electronic health records, electronic medical records, documentation, intervention, quality improvement, inpatient

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Utilization of a Simulation Electronic Documentation Model for Healthcare Providers to Reduce Documentation Errors in a Hospital Setting

The Health Insurance Portability and Accountability Act of 2005 (HIPAA) established regulations protecting the privacy and security of health information that is held or transferred in electronic form, generally known as electronic health records (EHRs) (Rule et al., 2020). Although EHRs are used nationwide, the quality of EHR documentation requires improvement, because poor quality documentation can negatively affect patients' health outcomes, contributing to missed consultations, appointments, and education (Weibe et al., 2019). For example, there are functions in the EHR that can alter a patient's information, which can result in inaccurate diagnoses and treatments. Effective interventions to improve the poor quality of EHR documentation must be developed to eliminate the deleterious consequences of documentation errors for patients.

Background

The consequences of the poor quality of EHR documentation include issues concerning patient health and safety, poor provider communication, missed consultations, and missed educational opportunities (Wiebe et al., 2019; Stevenson, 2018). Several studies purport an increase in adverse patient safety issues due to the EHR user interface (Rodziewicz, et al., 2022; Stevenson, et al., 2014). These medical errors are a serious public health problem and leading cause of death in the United States (Rodziewicz, et al., 2022). According to Rodziewicz, et al (2022), medical errors continue to present as much as a third of the time even with the addition of preventative safety measures within the EHR. The ability of computer tools to catch documentation errors varies according to the system's performance, which has been shown in

some studies to vary from 55% to 67% (Moscovitch, 2020). Despite the safety measures that currently exist within EHRs, errors continue to occur (Rodziewicz, et al., 2022).

The impacts of medical error extend beyond the patient. The healthcare professionals involved in such errors are also severely impacted and can experience profound psychological effects that lead to professionals leaving the healthcare setting. As nursing shortages increase in the United States, it is important to consider and respond to contributing factors that may lead nurses and other healthcare professionals to leave the profession. This is particularly important because nursing shortages can contribute to decreased documentation output and accuracy, which negatively impacts patient safety. A lack of accuracy in documentation can also lead to a decline in the quality of patient care and increased patient dissatisfaction.

Additionally, preventable EHR errors contribute substantially to healthcare costs, including higher health insurance costs per person. Rodziewicz et al. (2022) reported that EHR and other medical errors account for about $4 to $20 billion a year. Furthermore, EHR and other medical errors result in approximately 250,000 people dying each year, and countless others experience debilitating injuries (Graber et al., 2019). The consequences of EHR errors on healthcare professionals are also significant. The psychological effects of making EHR errors may result in feelings of failure, leading healthcare professionals to leave the healthcare system and causing staff shortages. Improving staff accuracy in medical documentation is therefore imperative for preventing EHR errors (Wiebe et al., 2019). The urban southeastern hospital that is the setting for this project has one of the most highly rated EHR systems according to clinicians nationwide (Baker, 2021). Yet it has not escaped the consequences of poor documentation. Issues have been identified concerning patient safety, poor provider communication, missed consultations, and missed educational opportunities. This study proposes

simulation EHR training during the orientation of nursing staff. Such training has been shown to not only improve documentation accuracy but to also increase he recognition of safety issues in participants (Stephenson, 2014).

Needs Analysis

At the urban hospital in the southeastern United States which was the setting for this DNP project, a chart audit was completed in the last quarter of 2021 to assess the need to improve EHR documentation. The audit revealed errors in 66% of the records completed by the participating healthcare providers. The identified errors included: (a) the omission of essential patient healthcare information; (b) the elimination of compulsory healthcare education for patients; (c) missed consultations that resulted in harm to patients; and (d) the hospital readmission rates of patients increased by 27%. These identified errors cost patients, providers, and the community millions of dollars in healthcare penalties and losses. The lack of consistent documentation accuracy created concerns about the effective delivery of safe and quality healthcare at this hospital (Otero et al., 2019; Rajaram et al., 2019).

SWOT Analysis

A SWOT analysis was completed to assess current internal strengths and weaknesses, external opportunities, and threats (see Appendix A). Internal strengths often offset weaknesses, such as gaining support from the stakeholders and nursing staff. Fostering a relationship with the nursing staff facilitates buy-ins and potentially decreases staff resistance to change. Another strength is the cost-effectiveness of the project. The facility already has a built-in simulated electronic documentation model in the system that can be used for training. Significant opportunities for improvement include staffing issues, the nurses' perceptions of the addition of extra work to an already stressed workload, and the staff’s increasing fatigue in regard to the

implementation of new ideas and practices. The support of upper management is a necessity for making changes that require staff coordination and collaboration. If the Director, who is a stakeholder, buys into this project, then cooperation will be swift and staff resistance will be minimal. With the facility Director's buy-in, collaborative opportunities can be achieved that will help maximize the efficiency and accuracy of the implementation of this DNP project.

Problem Statement

The problem identified by the chart audit conducted at the urban hospital in the southeastern United States was the discovery of a high proportion of EHR errors (66%).The need for more accurate documentation to ensure patient safety, quality, and satisfaction provided the rationale to answer the PICOT question: For healthcare providers (P), does the use of a simulated documentation model (I) compared to no education (C) reduce electronic health record documentation errors (O) over a period of eight weeks? (T)

Aims and Objectives

The overarching aim of this DNP project was to train one group of full-time nurses in an acute care facility to decrease the frequency of EHR documentation errors. The objectives were to: 1. Design an intervention involving the use of a simulated electronic documentation model. 2. Train the nurses to interpret the EHR documentation by using the simulated electronic documentation model in a classroom setting. 3. Implement structured chart reviews before, during, and after the training to determine the degree to which the nurses achieved targets to reduce EHR errors within a period of eight weeks.

Review of Literature

The review of literature began with a search of CINAHL, OVID, Science Direct, and PubMed databases. The following key terms were used in CINAHL: documentation education,

education using simulation, electronic health records, patient safety, and inpatient documentation errors. This search produced a total of 108 potential sources. Results were narrowed using peer-reviewed, academic journals and articles published within the last five years, which yielded few potential resources. Since the coronavirus pandemic, little evidence-based research has been published concerning documentation errors and methods of reducing errors. Therefore, the searches were broadened to include publications over the last ten years, yielding more articles on the subject. Still, few studies indicate best practices for reducing poor EHR use to increase patient safety and reduce documentation errors.

The findings from the literature review included surveys, systematic reviews, syntheses, and scoping reviews. In the literature, electronic health records (EHRs) and electronic medical records (EMRs) were used interchangeably. For the purposes of this review, only the term EHR is used. The literature review yielded two themes:(a) the advantages of simulated documentation for training of healthcare professionals, and (b) the benefits of accurate EHRs.

Advantages of Simulated Documentation for the Training of Healthcare Professionals

Healthcare professionals must ensure that accurate electronic documentation is essential to promote effective communication between staff, facilitate a good handoff for the oncoming shift, and identify and correct any problems that arise (Akhu-Zaheya et al., 2017; Baumann et al., 2018 Several studies published in the last six years have focused on the advantages of using simulated documentation for the training of healthcare professionals. D'Angelo and Kchir (2019) argued that the traditional training methods do not fully support the needs of student nurses to recognize documentation errors and how to navigate them. A student’s abilities to identify, manage, and prevent errors, and to identify gaps in skills and knowledge, must be enhanced by active learning, through encouragement to explore and make mistakes using a simulated

documentation model. Gibson et al. (2019) investigated how training with a simulated EHR improved the skills of student nurses. A sample of 162 students participated in a low-cost simulated EHR created using Microsoft PowerPoint. The students reported that their learning and understanding of how to extract meaningful information from the EHR was enhanced, and their preparation for their fourth professional year was also improved. The conclusion was that training with simulated documentation enhanced the students' perception of proficiency, which is critical to helping them navigate the patient's medical record effectively. Wilbanks and Aroke (2020) found that clinical simulation-based EHR training was critical for healthcare professionals to acquire technical and non-technical skills in a safe environment that does not compromise patient safety. Ahsani-Estahbanati et al. (2020) conducted a systematic review by searching for articles in four databases, including PubMed, Scopus, Ovid Medline, and Embase. They confirmed the lasting effects of learning outcomes using simulated EHR training. They concluded that enough evidence is available to confirm the advantages of training to prevent documentation errors. These advantages are further enhanced by how training with simulated documentation offers student clinicians opportunities to practice repetitive and deliberate practices without endangering patients.

Everett-Thomas et al. (2021) investigated how virtual simulation and EHR can assess student nurses' documentation and critical thinking skills. The study involved 84 undergraduate students who completed assessments on four assigned virtual patients and used a simulated EHR to record the findings. They found a significant correlation between the use of simulated EHR, improved skills, and reduced mistakes in medical records. The conclusion was that exposing nursing students to a simulated EHR before entering the workforce was essential. Miller et al. (2021) investigated how EHR simulation influenced the workflow and satisfaction of a sample of

72 interns. The study involved engaging the participants in intensive training using the simulated EHR. The conclusion was that exposing nursing students to a simulated EHR before entering the workforce was essential. Miller et al. (2021) investigated how EHR simulation influenced the workflow and satisfaction of a sample of 72 interns. The study involved engaging the participants in intensive training using the simulated EHR. The conclusion was that the participants were more likely to use the high-yield and individual screens than the reference residents, reducing medical errors related to documentation.

Four literature reviews have been published focusing on the effectiveness of training to reduce documentation errors in healthcare settings. Samadbeik et al. (2020) presented a comprehensive review of EHR training using various methods, participants, locations, strategies, and outcomes. The conclusion was that training should be aligned with the needs of the students, the EHR system utilized, and the organizational environment. A training plan should include SMART (Specific, Measurable, Achievable, Realistic, Tangible) training objectives to allow a rigorous evaluation of the outcomes. Albagmi (2021) reviewed articles in PubMed, Central, Ovid, Scopus, Science Direct, Elsevier, Cochrane, WHO website, and the McMaster University Health Evidence from 2005-2020. One of the major themes identified in this review related to reducing documentation errors were the use of EHR training software by student clinicians.

Advantages of Accurate Documentation for Patients

Accurate documentation and confidentiality are required to ensure high-quality patient care. Clinicians need to prevent unauthorized access to EHRs that may lead to a breach of the privacy of the patients (Kuziemensky et al., 2018). Wilbanks et al. (2018) emphasized the need to incorporate technology training that mimics real-world settings and situations to help clinicians ensure the safety and privacy of their patients. Zhang et al. (2019) reported that

training with simulated EHRs resulted in significant documentation improvements without endangering patients' health and safety. Hong Ling et al. (2020) suggested that training clinicians through simulated EHRs improves the efficacy of healthcare delivery to patients. Ranjbar et al. (2021) highlighted that clinicians need to be trained to achieve the highest standards and comprehensiveness of documentation to prevent avoidable patient harm.

The conclusion was this type of training allowed student clinicians to reduce errors related to documentation in a safely guided environment. Nabovati et al. (2022) also collected data from published literature. They found a significant relationship between training with simulated documentation and the functional capabilities of student nurses. The authors claimed that teaching healthcare documentation using simulated documentation helped to enhance students' skills, attitudes, knowledge, and satisfaction, all of which were positively related to reduced documentation errors. Nuama et al. (2022) similarly reviewed available published evidence on the effects of simulation-based EHR training in both clinical and educational environments. The conclusion was that most of the studies emphasized that training with simulated documentation models improved the practical skills of healthcare professionals.

Theoretical Model

The theoretical framework that underpins this project is the Donabedian Model (see Appendix B). Donabedian (1988a; 1988b; 2005) stressed the need to clearly define quality of care. For this DNP project quality of care includes effective interventions to improve the poor quality of HER documentation and to eliminate the deleterious consequences of documentation errors for patients. Donabedian proposed three dimensions that must be evaluated to determine the quality of a specific health care system processes, structure, and outcomes (Baker, 2021). In order to provide care in an organization, the structure as well as available equipment and staff

must be considered in order to provide quality care to clients (Oster & Braaten, 2017). The process refers to the interactions between patients and providers. The engagement process encompasses the diagnoses, treatments, preventive care, and patient education. The documentation by the nursing staff at this facility not only includes documentation of patient care, but it also includes the completion of several assessments which have a direct impact on patient care. Some of these include a Morse falls risk assessment, an assessment of the patient's skin, and specifics such as height and weight. The omission of any of those or other assessments may lead to patient care errors. The omission of this documentation had been implicated as cause of patient care errors. This DNP project assumes that improving the structure and processes used to administer EHRs will be associated with quality improvements in patient outcomes (Oster & Braaten, 2017).

Methodology

Setting

The setting for this DNP project was an acute care medical-surgical unit in an urban southeastern hospital. This unit was also a hospitalist unit. This particular unit possessed 13 private hospitalist-specific rooms. In addition, this unit hosts all DNP projects that are presented.

Population

The purposive sample (n = 15) was drawn from the population of full-time nursing staff assigned to the unit, including day and night shifts. All were asked to complete a questionnaire with information about their gender, time practicing and shift (see Appendix C). See Table 1 for a presentation of the demographic profile of the participants. Most nurses (n = 13, 86.7%) were female. The majority (n = 11, 73.3%) had more than ten years of experience and over two-thirds (n = 10, 66.7%) had spent more than two years practicing in the acute care facility.

Table 1

Demographic Profile of Participants (n = 15)

Category		n	%
Gender	Female	13	86.7
	Male	2	13.3
Time practicing in the career field (years)			
	2 +	3	20.0
	6 +	1	6.7
	10 +	11	73.3
Time practicing in the facility (years)			
	1 +	1	6.7
	2 +	10	66.7
	10 +	4	23.7
Shift			
	Day	7	46.7
	Night	9	53.3

Inclusion/Exclusion Criteria for the Population

Inclusion criteria:

- The criteria for inclusion was all full-time nursing staff who would benefit from this training in the interpretation of EHR. It also includes day and night shift nursing staff. There were no limitations on age nor experience related to this DNP project. The most important criteria for inclusion was full-time status on the unit.

Exclusion criteria:

- The criteria excluded float pool, part-time, and per diem nursing staff. It also excluded weekend staff. Management and other upper-level management was excluded from this DNP population.

Recruitment

The participants were recruited via flyers throughout the acute care unit with announcement information, topics to be discussed, and meeting times (see Appendix D). The

flyers were posted in the break room, at the nurses' station, and in the conference/locker room. Potential participants were asked to attend one of the meetings to discuss the training sessions and sign a voluntary consent. They had opportunities to ask questions before, during, and after signing the consent and were informed that they could withdraw from the project at any time without question. Two training sessions were held during weekdays and weeknights to include nurses on day and night shifts. Light refreshments were provided for all the staff who attended.

Consent

This DNP project began after receiving Institutional Review Board (IRB) approval. Informed consent was obtained from all participants before the intervention (see Appendix E). This consent contained pertinent information concerning the project including withdrawal from the project at any time and without reason. In addition, a copy of the consent was given to participants.

Design

The simulated documentation model contained mock EHRs built into a computer system that could be used for training and is an integral part of the project implementation (see Appendix F). The prescribed intervention incorporated a simulation-based model already installed in the computerized patient record system (CPRS); therefore, the acute care unit experienced no additional costs for the training. The CPRS system is a built-in electronic simulation record that has been underutilized by this southeast urban hospital. The CPRS system makes it easy for training nursing staff from admission to discharge. It allows doctors as well as other staff to be trained in a classroom in an uninterrupted environment, allowing for more concentration on vital parts of the record, such as where to look for consults, orders, or labs. Only test records were used for classroom training.

The documentation model was loaded with demonstration data using identical tabs to an authentic EHR. The documentation included clinical and other information referring to patients with a 72-hour hospital stay, which was the minimum average length of stay to ensure an adequate number of charts for review (see Appendix G). A total of 45 charts were reviewed by the 15 participants, with three charts reviewed by each.

The participants undertook chart reviews of the simulated EHR on three occasions. The chart review methodology followed what Siems et al. (2020) recommended. The pre-test (before the training intervention) was conducted immediately after IRB approval and one week before the training sessions using a sample of 15 charts. During the scheduled training sessions, the primary investigator (PI) emphasized that the purpose of this project was to reduce documentation errors and nursing care omissions, increase the quality of patient care and documentation. The mid-test was conducted during the training sessions to assess changes in documentation since the pre-test. The training sessions were held in a classroom setting with access to computers on which the electronic simulation model was installed. Schedules were designed to accommodate all participants.

Data Review Process

The frequency distributions (counts and percentages) of the participants' responses to the pre-test, mid-test, and post-test review charts were analyzed using IBM SPSS® v. 26. The most appropriate approach to evaluating the effects of nursing interventions in healthcare settings is to estimate and interpret effect sizes (Davis et al., 2021). Accordingly, the changes in the frequency distributions of the nurses' responses to the chart review over time between the pre-test, the mid-test, and the post-test were estimated using Cramér's V. This effect size is measured with "a number between 0 and 1 that indicates how strongly two categorical variables are associated"

(van den Berg, 2023). The two categorical variables were the frequencies of the response categories to the chart review (e.g., Yes, No, or N/A) at the three points in time of the chart review process (i.e., pre, mid, and post-test). The values of Cramér's V in the context of research in a clinical setting were interpreted by 0.2 = the "recommended minimum effect size indicating a practically significant effect"; 0.5 = a “moderate effect"; and 0.8 = "strong effect" (O’Connell et al., 2018, p. 3).

Risks and Benefits

There were minimal physical, economic, social, legal, or psychological risks for the participants during this project. The participants experienced no risks related to reputation and employability. The potential benefits of this project outweighed the risks. The primary investigator (PI) had no influence over administrative responsibilities in the medical-surgical nursing unit concerning staffing, evaluations, or promotions. The PI conveyed to the nursing staff that management had no influence or participation in the project, and they could withdraw without penalty at any time.

Compensation

This DNP project was not funded by any inside or outside agencies. No monetary compensation was offered or given to the participants. The PI was also not compensated monetarily for work on this project.

Timeline

The PICOT question was developed, and the literature review was completed during the Fall semester of 2021. Communication with the hospital faculty about the DNP project occurred during the Spring of 2023. During the spring semester of 2023, the hospital faculty were brought together to discuss the plan to implement the project and to gain buy-in from the stockholders.

The DNP project was implemented, the data were collected during 2023, and the data were analyzed before the DNP manuscript was prepared and submitted in April 2023. The project was disseminated via poster presentation in addition to a completed ePortfolio during Summer 2023 (see Appendix H).

Budget and Resources

The costs to personally fund this DNP project are listed (see Appendix I). Although the company allowed the use of the copier, it was not a color copier. Therefore, ink was ordered for a personally owned copier. The editor and statistician fees were not included in the budget. Please note that the CITI training (see Appendix J) was provided by Jacksonville State University (JSU) at no cost before IRB approval was received (see Appendix K). The facility provided organizational support where the quality improvement project took place (see Appendix L).

Evaluation Plan

Statistical Considerations

Using full-time licensed nursing staff assigned to the acute care facility as the eligibility criteria, we recruited project participants using flyers. Flyers were posted on the acute care floor of the hospital and included information about the topic, times, and dates of meetings. After providing their informed consent, the recruits (N = 15) each completed a demographic questionnaire. This questionnaire asked them to report their gender, shift, and the number of years they had practiced nursing in their career and in the facility. To determine outcomes, participants were subject to chart reviews, which functioned as structured appraisals of documented medical records (Siems et al., 2020).

Each participant answered 19 questions based on a simulated documentation model on three occasions: before (pre), during (mid), and after (post) a prescribed intervention. The prescribed intervention administered by the DNP candidate aimed to improve the quality of the nurses' responses to the structured chart review. The frequency distributions (counts and percentages) of the responses to the pre-test, mid-test, and post-test were analyzed using IBM SPSS v. 26, the most appropriate approach to the evaluation of the effects of nursing interventions in healthcare settings (Davis et al., 2021). Accordingly, the changes in the frequency distributions of the nurses' responses to the chart review over time between the pre-test, the mid-test, and the post-test were estimated using Cramér's V. This is an effect which is measured with "a number between 0 and 1 that indicates how strongly two categorical variables are associated" (van den Berg, 2023. The interpretation of Cramér's V in the context of research in a clinical setting was 0.2 = the "recommended minimum effect size indicating a practically significant effect"; 0.5 = a "moderate effect"; and 0.8 = "strong effect" (Kazdin, 2016, pp. 3-21). All the participants were exposed to the educational intervention. No control groups were utilized in this study. Consequently, the participants' pre-, mid-, and post-test responses to the chart review could not be compared with those of another group of participants who were not exposed to the intervention.

Data Maintenance and Security

The participants were de-identified, and no names or addresses were recorded to ensure confidentiality. The name of the setting was not identified and was listed as an urban hospital in the southeastern United States. All information for this project, including sign-in sheets, was stored in a locked office, inside a locked cabinet, and only accessible to the PI and investigative

team, including to nurse educators and the nurse manager All data stored in electronic files was password protected on the computer.

Results

Table 2 presents the frequency distributions (counts and percentages) of the responses to nine chart review items cross-tabulated across the three levels of measurement with Cramer's V = 0.00. The zero effect shown in Table 2 sizes implied no changes were observed in the chart review responses between the pre-test (before the intervention), through the mid-test (during the intervention); and at the post-test (after the intervention). In the context of estimating the impact of training on the nurses' use of the charts, the responses to these nine items were 100% correct. All the nurses (n = 15, 100.0%) reported correctly that the Admission Part I was completed within 4 hours of admission and that pain assessment and CHF teaching at discharge were completed. For the other seven items, the majority of nurses reported consistently that the documentation was either correct or not applicable.

Table 2

Distribution of Responses to Structured Chart Review Items with Zero Effect Size

Item	Responses	Pre-Test		Mid-Test		Post-Test		Cramer's
		N	%	n	%	n	%	V
Admission Part I completed within 4 hours of admission?	Yes	15	100.0	15	100.0	15	100.0	0.00
	No	0	0.0	0	0.0	0	0.0	
Admission Part II completed within 4 hours of admission?	N/A	6	40.0	6	40.0	6	40.0	0.00
	Yes	9	60.0	9	60.0	9	60.0	
VANOD Completed on admission or transfer?	N/A	6	40.0	6	40.0	6	40.0	0.00
	Yes	9	60.0	9	60.0	9	60.0	
Morse Fall Risk completed?	N/A	6	40.0	6	40.0	6	40.0	0.00
	Yes	9	60.0	9	60.0	9	60.0	
The Veteran's Care Plan has stated goals?	N/A	6	40.0	6	40.0	6	40.0	0.00
	Yes	9	60.0	9	60.0	9	60.0	
RN POC outcomes addressed by the end of the shift?	N/A	6	40.0	6	40.0	6	40.0	0.00
	Yes	9	60.0	9	60.0	9	60.0	
Pain assessment completed?	Yes	15	100.0	15	100.0	15	100.0	0.00
	No	0	0.0	0	0.0	0	0.0	
Order included indication for pain medication?	N/A	5	33.3	5	33.3	5	33.3	0.00
	Yes	10	66.7	10	66.7	10	66.7	
CHF discharge teaching completed?	N/A	15	100.0	15	100.0	15	100.0	0.00
	Yes	0	0	0	0	0	0	

Table 3 presents the frequency distributions of the responses to the five chart review items cross-tabulated across the three levels of measurement with values of Cramér's V < 0.2. The effect sizes between 0.04 and 0.17 implied that the observed changes in the responses to the chart review over time, between the pre-test and the post-test, were very small, and may have little practical/clinical significance in the context of estimating the impact of an intervention in a clinical setting (Knapp, 2016). By the post-test, all the participants reported that the documentation was either correct or not applicable for two of the items; however, errors were identified for two of the items (Kazdin, 2016). Another item did not reach the target of 100% correct answers, specifically "Pain selected as reason for administering medication" for which one participant replied "No" at the post-test when the correct answer was "Yes".

Table 3

Distribution of Responses to Structured Chart Review Items with Small Effect Sizes

Item	Response	Pre-Test		Mid-Test		Post-Test		Cramer's
		N	%	n	%	n	%	V
Daily weight completed?	N/A	0	0.0	0	0.0	3	20.0	0.04
	Yes	15	100.0	15	100.0	12	80.0	
DVT prophylaxis implemented/documented?	N/A	5	33.3	5	33.3	4	26.7	0.07
	Yes	10	66.7	10	66.7	11	73.3	
Pain reassessment completed 2 hours after PRN dosing?	N/A	5	33.3	5	33.3	5	33.3	0.13
	Yes	4	26.7	7	46.7	6	40.0	
	No	6	40.0	3	20.0	4	26.7	
"Pain" selected as reason for administering medication?	N/A	5	33.3	5	33.3	5	33.3	0.15
	Yes	10	66.7	10	66.7	9	60.0	
	No	0	0.0	0	0.0	1	6.7	
Removal of Foley Catheter post-operative day 1 or 2?	Indicated	7	46.7	9	60.0	9	60.0	0.17
	N/A	7	46.7	5	33.3	6	40.0	
	Not indicated	1	6.7	0	0.0	0	0.0	
	Yes	0	0.0	1	6.7	0	0.0	

Table 4 presents the frequency distributions of the responses to the six chart review items cross-tabulated across the three levels of measurement with values of Cramér's V > 0.2. The effect sizes between 0.21 and 0.34 implied that the observed changes in the responses to the chart review over time, between the pre-test and the post-test, may have a minimal practical or clinical significance in the context of estimating the effects of the intervention in a clinical setting (Knapp, 2016). One item did not reach the target of 100% correct answers between the pre-test and the post-test, specifically "Inpatient influenza vaccine administration note completed upon admission, during the hospital stay, or upon discharge?" for which four nurses provided incorrect answers (Cramer's V = 0.34).

Table 4

Distribution of Responses to Structured Chart Review Items with Moderate Effect Sizes

Item	Response	Pre-Test		Mid-Test		Post-Test		Cramer's
		n	%	n	%	n	%	V
EWS completed with VS?	N/A	1	6.7	0	0.0	0	0.0	0.21
	Yes	14	93.3	15	100.0	15	100.0	
24-hour chart checks/ verifications completed?	N/A	13	86.7	10	66.7	12	80.0	0.22
	Yes	2	13.3	3	20.0	3	20.0	
	No	0	0.0	2	13.3	0	0.0	
24-hour intake & output note completed?	N/A	12	80.0	8	53.3	7	46.7	0.25
	Yes	2	13.3	7	46.7	7	46.7	
	No	1	6.7	0	0.0	1	6.7	
24-hour intake & output note completed?	N/A	12	80.0	8	53.3	7	46.7	0.25
	Yes	2	13.3	7	46.7	7	46.7	
	No	1	6.7	0	0.0	1	6.7	
Oral care documented on the Oral Care template?	Yes	8	53.3	12	80.0	11	73.3	0.24
	No	7	46.7	3	20.0	4	26.7	
Inpatient Influenza vaccine administration completed?	N/A	15	100.0	12	80.0	11	73.3	0.34
	Yes	0	0.0	0	0.0	3	20.0	
	No	0	0.0	3	20.0	1	6.7	

Sufficient statistical evidence was provided to answer the PICOT question. Among 15 full-time nurses working at an acute care facility, the use of a training intervention based on a simulated electronic documentation model over a period of eight weeks helped to improve the quality of the structured chart reviews by a small degree (Cramer's V = 0.00 to 0.34). The target of 100% correct responses was not reached for 3/19 (15.8%) of the documented items.

Discussion

The use of a simulated electronic documentation model enhanced the overall quality and correctness of nurse documentation in an acute care medical-surgical unit. The findings of this project were consistent with recent reviews of the literature, which concluded that implementing a simulated documentation model to train healthcare providers may help to reduce some of the documentation errors and enhance the quality of EHRs; however, there is still room for

improvement (Nabovati et al., 2022; Nuama et al., 2022). This conclusion was discussed with the stakeholders, and they stated they were not surprised at the outcome. The reasons for the continuation of some errors during the eight-weeks of the DNP project ranged from an old computer system to needing more force fields for documentation. The stakeholders reported that the facility is moving to a more user-friendly computer system soon. However, more training sessions are required before 100% documentation quality can be achieved.

Implications for Clinical Practice

Using a simulated electronic documentation model may help nurses identify documentation errors and thereby improve patient safety overall by decreasing missed patient educational opportunities, improving provider communications, and decreasing missed consultations. Implementing the required CPRS class using the simulated electron documentation model for new employees before they go to their assigned units will help reinforce accurate documentation in EHRs. The facility will begin the required CPRS orientation for new employees before they go to their assigned units. The orientation will include, without being limited to, training on how to navigate the patient information in the chart and requirements for charting for day shift and night shift nursing staff. This information will be added to the new employee checklist in the future. The person(s) responsible for this task will be staff development along with a nurse that works in the acute care unit and has been proven to document effectively and accurately. The development program will help reduce anxiety for new nurses and relieve distractions, while also making nurses more comfortable with the current charting system (Edwards & Moczygemba, 2004).

Implications for Healthcare Policy

Healthcare policies are important for establishing guidelines that benefit patients, healthcare organizations, and the healthcare system. Training with simulated electronic documentation records will benefit patients by supporting safe care within healthcare organizations and healthcare systems and promoting quality care across the care continuum (Agency for Healthcare Research and Quality, 2019). The 21st Century Cures Act has many provisions to improve the flow and exchange of electronic health information, which will require the establishment of new policies for the goal of interoperability. These provisions include efforts to decrease the burden on policymakers within a health care system to facilitate the provision of efficacious healthcare (DigitalVA, n.d.).

Implications for Quality/Safety

This quality improvement project demonstrated a small to moderate improvement in quality documentation (Huber et al., 2017). Implementation of the EHR simulation model during the orientation education may help prepare newly employed nurses to learn the organization's electronic charting system and enhance the documentation quality for all nurses (Nuamah, 2022). Moreover, enhanced documentation quality has been shown to directly impact both the quality and safety of patient care. Ultimately this process may help to increase patient satisfaction, efficacy, and possibly decrease readmissions (Donabedian, 1988).

Implications for Education

The findings of this project suggest that training the nursing staff using a simulation model before working in the acute care unit will be beneficial. The simulation model will allow staff to acquire technical training without distracting themselves from patient care activities (Wilbanks & Aroke, 2020). For future projects, it would be beneficial to compare the

effectiveness of educating nursing staff using a simulated electronic documentation model during new employee orientation rather than waiting until the new employee goes to the assigned unit as purported by Nuamah, et al. (2022). Education will be challenged to maintain the pace of high-fidelity clinical simulation to train staff (Kirshner & Salomon, 2003).

Limitations

Some methodological limitations in this project warrant discussion. First, the sample size was too small to provide sufficient power to conduct inferential statistical analysis. The number of anticipated participants was 30, however partly due to a 1-year time lapse in the project, that number decreased to 17. Other reasons for decreased numbers ranged from participants being transferred to other units, the float pool, or staff being on vacation during the implementation timeline. Two participants were withdrawn from the study because they transferred to other units during the implementation, decreasing the number of participants to 15. The use of the simulated electronic record system for documentation is another possible limitation of this project; ideally, the documentation system should be accessible via CPRS.

Several things changed due to the one-year time-lapse of the project. An educator was hired for the medical residents and attending physicians, so no physicians participated in this project as planned; therefore, a chart audit form was used to capture the nursing staff only. Another limitation is the nursing staff no longer enter consultations in the EHR; the doctors order them. On the other hand, the classes using the simulated electronic records were successful but did not illustrate an impact that was as substantial as proven by previous research.

Implementation of training for new employees while in new hospital orientation before going to their assigned units is believed to be advantageous for the employee by lessening anxiety and increasing confidence, yielding accurate documentation. Ultimately, this employee

education tactic would increase patient satisfaction and safety. Monitoring the implementation of this simulated educational model should be an ongoing process to accurately assess its success and sustainability.

The internal validity of the results and conclusions of this project was threatened because only one small group of nurses was exposed to the intervention. Due to the small number of participants available for this project, no control group (i.e., nurses who were not exposed to the intervention) could be assigned. The frequencies of the participants' pre-, mid-, and post-test responses to the structured chart review could not be statistically compared with the frequencies provided by a control group. Because of this, it is difficult to accurately measure the effects of a prescribed intervention in a clinical setting using a pretest and posttest design without a control group. The concomitant changes in the control group must be accounted for in order to evaluate the changes in the treatment group. For this reason, Knapp (2016, p. 467) argued “Why is the one-group pretest-posttest design still used?" in the context of nursing research. O'Connell et al. (2018) also expressed concern about the limitations of interpreting pre-post data in the context of clinical research. Moreover, the results and conclusions of this study are based only on a small convenience sample of nurses at one acute care unit. Consequently, the results and conclusions of this project may lack external validity, meaning that they cannot necessarily be generalized or extrapolated to other groups of nurses in other clinical settings at other times.

Dissemination

The findings of this DNP project have been discussed with the stakeholders and the nursing staff of the acute care unit. It will be disseminated through posters, presentations, and manuscripts. Upon approval by graduate studies, this DNP manuscript will be placed in the JSU

Library's Public Repository system for further access by staff, healthcare researchers, and educational professionals.

Sustainability

The organization's plan of providing new employees the chance to learn how to navigate the simulated electronic record model in a classroom setting will continue assuming that it is deemed to be an advantage. Learning in a classroom environment without distractions makes employees more confident about using the electronic health record. Stevenson et al. (2018) found that not only do the nurses demonstrate improvement in their documentation, but the nurses also improve their recognition of patient safety issues when trained using EHR simulation. The potential to improve the quality and safety of healthcare serves as the impetus to continue to implement the simulation EHR training (Kaihlanen et al., 2021).

Plans for Future Scholarship

Future projects should examine the sustainability of implementing evidenced-based practices that will help decrease documentation errors using a simulated electronic documentation model. Future projects could be introduced in other hospital units with a larger number of participants with a wider range of demographic characteristics. Evaluating the effects of training nurses using a one group design without a control group is, not recommended for future projects due to the difficulty of interpreting the results (Knapp, 2016; O'Connell et al., 2018). A randomized controlled trial (RCT) should ideally be conducted to examine larger units and organizations with the resources to hire more educators to ensure EHR training is completed in a classroom setting, The RCT should monitor the effectiveness and implications of improving EHR documentation between a control group (not exposed to training) and an experimental group (exposed to training). For example, Rajaram et al. (2021) randomly divided 80 nursing

students into two groups. Students in the experimental group received theoretical and practical training using dedicated software to promote the quality of their documentation. The control group did not receive documentation training. Ultimately, the experimental group, who was given documentation training, produced more comprehensive reports and was more satisfied than the control group.

Conclusion

Although EHRs are used nationwide, the quality of EHR documentation requires improvement, because poor quality documentation can negatively affect patients' health outcomes, contributing to missed consultations, appointments, and education (Weibe et al., 2019). For example, there are functions in the EHR that can alter a patient's information, which can result in inaccurate diagnoses and treatments. Effective interventions to improve the poor quality of EHR documentation must be developed to eliminate the deleterious consequences of documentation errors for patients.

This DNP project utilized a simulated electronic documentation record that is built into the facility's computer system to decrease documentation errors. While there are identified limitations such as small sample size and access to classroom training during work hours, the study findings support similar studies. Although research shows that utilizing a simulated electronic documentation record has been proven to increase accurate documentation, the implementation of such did not yield the high numbered results as expected. Nevertheless, there was some improvement in the documentation.

Further projects studies should be implemented on other units with other groups of nurses and examining possible barriers, because the quality of nursing documentation is a good indicator of quality patient care, and nursing documentation must be completed accurately to

ensure the safety and quality of healthcare services. There continues to be a need to find ways to increase the quality of EHRs due to the potential deleterious consequences of poor EHR documentation. More training sessions must be included for nurses as part of the intervention to improve the quality of EHR documentation.

References

Agency for Healthcare Research and Quality (AHRQ). (2019). Electronic health records https://psnet.ahrq.gov/primer/electronic-health-records

Ahsani-Estahbanati, E., Gordeev, V. S., & Doorhanger, L. (2022). Interventions to reduce the incidence of medical error and its financial burden in health care systems: A systematic review of systematic reviews. *Frontiers in Medicine, 9.* https://doi.org/10.3389%2Ffmed.2022.875426

Akhu-Zaheya, L., Al-Maaitah, R., & Bany Hani, S. (2017). Quality of nursing documentation: Paper-based health records versus electronic-based health records. *Journal of Clinical Nursing*, *27*(3-4). https://doi.org/10.1111/jocn.14097

Albagmi, S. (2021). The effectiveness of EMR implementation regarding reducing documentation errors and waiting time for patients in outpatient clinics: a systematic review *F1000Research*, *10*. https://doi.org/10.12688%2Ff1000research.45039.2

Baker, R. (2021, July 26) *Why VA's electronic health record mega-project is failing.* FCW—The Business of Federal Technology. https://fcw.com/it-modernization/2021/07/why-vas-electronic-health-record-mega-project-is-failing/259229/

Baumann, L. A., Baker, J., & Elshaug, A. G. (2018). The impact of electronic health record systems on clinical documentation times: A systematic review. *Health Policy, 122(8),* 827-836. https://doi.org/10.1016/j.healthpol.2018.05.014

Davis, S. L., Johnson, A. H., Lynch, T., Gray, L., Pryor, E. R., Azuero, A., Soistmann, H. C., (2021). Inclusion of effect size measures and clinical relevance in research papers. *Nursing Research*, *70*(3), 222–230. https://doi.org/10.1097/nnr.0000000000000494

D'Angelo, A. L., & Kchir, H. (2019). Error management training in medical simulation. *Europe*

PMC. https://europepmc.org/article/NBK/nbk546709

DigitalVA. (n.d.). History of IT at VA. https://www.oit.va.gov/about/history.cfm

Donabedian, A. (1988a). The quality of care. how can it be assessed? *JAMA: The Journal of the American Medical Association*, *260*(12), 1743–1748. https://doi.org/10.1001/jama.260.12.1743

Donabedian, A. (1988b). The quality of care. *JAMA: The Journal of The American Medical Association*, *260* (12), 1743–1748. https://doi.org/10.1001/jama.1988.03410120089033

Donabedian, A. (2005). Evaluating the quality of medical care. *Milbank Quarterly*, *83*(4), 691–729. https://doi.org/10.1111/j.1468-0009.2005.00397.x

Edwards, M., & Moczygemba, J. (2004). Reducing medical errors through better documentation. *Health Care Management*, *23*(4), 329–333. https://doi.org/10.1097/00126450-200410000-00007

Everett-Thomas, R., Joseph, L., & Trujillo, G. (2021). Using virtual simulation and electronic health records to assess student nurses' documentation and critical thinking skills. *Nurse Education Today*, *99*, 104770. https://doi.org/10.1016/j.nedt.2021.104770

Gibson, C. M., Kwon, H., & Tatachar, A. (2019). Impact of a low-cost simulated electronic medical record on perceptions of APPE readiness. *Currents in Pharmacy Teaching and Learning*, *11*(7), 736–741. https://doi.org/10.1016/j.cptl.2019.03.013

Graber, M. L., Siegal, D., Riah, H., Johnston, D., & Kenyon, K. (2019). Electronic health record–related events in medical malpractice claims. *Journal of Patient Safety*, *15*(2), 77–85. https://doi.org/10.1097/pts.0000000000000240

Huber, M., Highland, J., Krishnamoorthi, V., & Tang, J.-Y. (2017). Utilizing the electronic health record to improve advance care planning: A systematic review. *American Journal*

of Hospice and Palliative Medicine, *35*(3), 532–541. https://doi.org/10.1177/1049909117715217

Kaihlanen, A.-M., Gluschkoff, K., Saranto, K., Kinnunen, U.-M., & Heponiemi, T. (2021). The associations of information system's support and nurses' documentation competence with the detection of documentation-related errors: Results from a nationwide survey. *Health Informatics Journal*, *27*(4), 1–12. https://doi.org/10.1177/14604582211054026

Kazdin, A. E. (Ed.). (2016). *Methodological issues and strategies in clinical research* (A. E. Kazdin, Ed.; 4th ed.). American Psychological Association. https://doi.org/10.1037/14805-000

Kirshner, M., Salomon, H., & Chin, H. (2003). One-on-one proficiency training: an evaluation of satisfaction and effectiveness using clinical information systems. *National Library of Medicine*. https://doi.org/10.1016/j.ijmedinf.2003.11.001

Knapp, T. R. (2016). Why is the one-group pretest–posttest design still used? *Clinical Nursing Research*, *25*(5), 467–472. https://doi.org/10.1177/1054773816666280

Miller, M. E., Scholl, G., Corby, S., Mohan, V., & Gold, J. A. (2021). The impact of electronic health record–based simulation during intern boot camp: Interventional study. *JMIR Medical Education*, *7*(1), e25828. https://doi.org/10.2196/25828

Moscovitch, B., Halamka, J. D., & Grannis, S. (2020). Better patient identification could help fight the coronavirus. *NPI Digital Medicine*, *3*(1). https://doi.org/10.1038/s41746-020-0289-4

Nabovati, E., Jeddi, F., Ghaffari, F., & Mirhoseini, F. (2022). The effects of simulation training on Learning of health information systems: A scoping review. *Journal of Education and Health Promotion*, *11*, 4. https://doi.org/10.4103/jehp.jehp_17_21

Nuamah, J. K., Adapa, K., & Mazur, L. M. (2022). State of the evidence on simulation-based electronic health records training: A scoping review. *Health Informatics Journal*, *1-26*. https://doi.org/10.1177/14604582221113439

O'Connell, N.S., Dai, L., Jian, Y., Speiser, J.L., & Ward, R. (2018). Methods for analysis of pre-post data in clinical research: A comparison of five common methods. *Journal of Biomedical Biostatistics, 8(1),* 1-9. https://dx.doi.org/10.4172%2F2155-6180.1000334

Oster, C. A., & Braaten, J. S. (2017). High reliability organizations: A healthcare handbook for patient safety & quality. *Journal of Nursing Regulation*, *8*(3), 64. https://doi.org/10.1016/s2155-8256(17)30162-x

Otero Varela, L., Wiebe, N., Niven, D. J., Ronksley, P. E., Iragorri, N., Robertson, H., & Quan, H. (2019). Evaluation of interventions to improve electronic health record documentation within the inpatient setting: A protocol for a systematic review. *Systematic Reviews*, *8*(1). https://doi.org/10.1186/s13643-019-0971-2

Rajaram, A., Hickey, Z., Patel, N., Newbigging, J., & Wolfrom, B. (2019). Training medical students and residents in the use of electronic health records: A systematic review of the literature. *Journal of the American Medical Informatics Association*, *27*(1), 175–180. https://doi.org/10.1093/jamia/ocz178

Ranjbar, K., Sabetsarvestani, R., Oghlaee, H., Sarvestani, P. S., Dehghan, A., & Shirazi, Z. H. (2021). Using electronic software for nursing documentation in nursing students. *Florence Nightingale Journal of Nursing, 29(2),*128-136. https://doi.org/10.5152%2FFNJN.2021.20077

Rodziewicz, T. L., Houseman, B., & Hipskind, J. E. (2018). *Medical error reduction and prevention.* StatsPearls Publishing. https://doi.org/https://pubmed.ncbi.nlm.nih.gov/29763131/

Rule, A., Chaing, M. F., & Hribar, M. R. (2020). Using electronic health record audit logs to study clinical activity: a systematic review of aims, measures, and methods. *Journal of the American Medical Informatics Association*, *27*(3), 480–490. https://doi.org/10.1093/jamia/ocz196

Samadbeik, M., Father, F., Braunstein, M., Ben, B., Saremian, M., Kalhor, F., & Edirippulige, S. (2020). Education and training on electronic medical records (EMRs) for health care professionals and students: A scoping review. *International Journal of Medical Informatics*, *2*. https://doi.org/10.1016/j.ijmedinf.2020.104238

Siems, A., Banks, R., Holubkov, R., Meert, K. L., Bauerfeld, C., Beyda, D., Berg, R. A., Bulut, Y., Burd, R. S., Carcillo, J., Dean, J., Gradidge, E., Hall, M. W., McQuillen, P. S., Mourani, P. M., Newth, C. J., Notterman, D. A., Priestley, M. A., Sapru, A.,...Pollack, M. M. (2020). Structured chart review: Assessment of a structured chart review methodology. *Hospital Pediatrics*, *10*(1), 61–69. https://doi.org/10.1542/hpeds.2019-0225

Stevenson, J. E., Israelsson, J., Petersson, G., & Bath, P. A. (2018). Factors influencing the quality of vital sign data in electronic health records: A qualitative study. *Journal of Clinical Nursing*, *27*(5-6), 1276–1286. https://doi.org/10.1111/jocn.14174

van den Berg, R. G. (2023). *Cramér's v - beginners tutorial*. https://www.spss-utorials.com/cramers-v-what-and-why/

Wiebe, N., Varela, L. O., Niven, D. J., Ronksley, P. E., Iragorri, N., & Quan, H. (2019). Evaluation of interventions to improve inpatient hospital documentation within electronic health records: A systematic review. *Journal of the American Medical Informatics Association, 26*(11), 1389–1400. https://doi.org/10.1093/jamia/ocz081

Wilbanks, B. A., & Aroke, E. N. (2020). Using clinical simulations to train healthcare professionals to use electronic health records: A literature review. *Computers, Informatics, Nurs*ing, *38*(11), 551–561. https://doi.org/10.1097/CIN.0000000000000631

Wilbanks, B. A., Watts, P. I., & Epps, C. A. (2018). Electronic health records in simulation education literature review and synthesis. *Simulation in Healthcare: The Journal of the Society for Simulation in Healthcare*, *13*(4), 261–267. https://doi.org/10.1097/SIH.0000000000000288

Zhang, Z., Yan, C., Mesa, D. A., Sun, J., & Malin, B. A. (2019). Ensuring electronic medical record simulation through better training, modeling, and evaluation. *Journal of the American Medical Informatics Association*, *27*(1), 99–108. https://doi.org/10.1093/jamia/ocz161

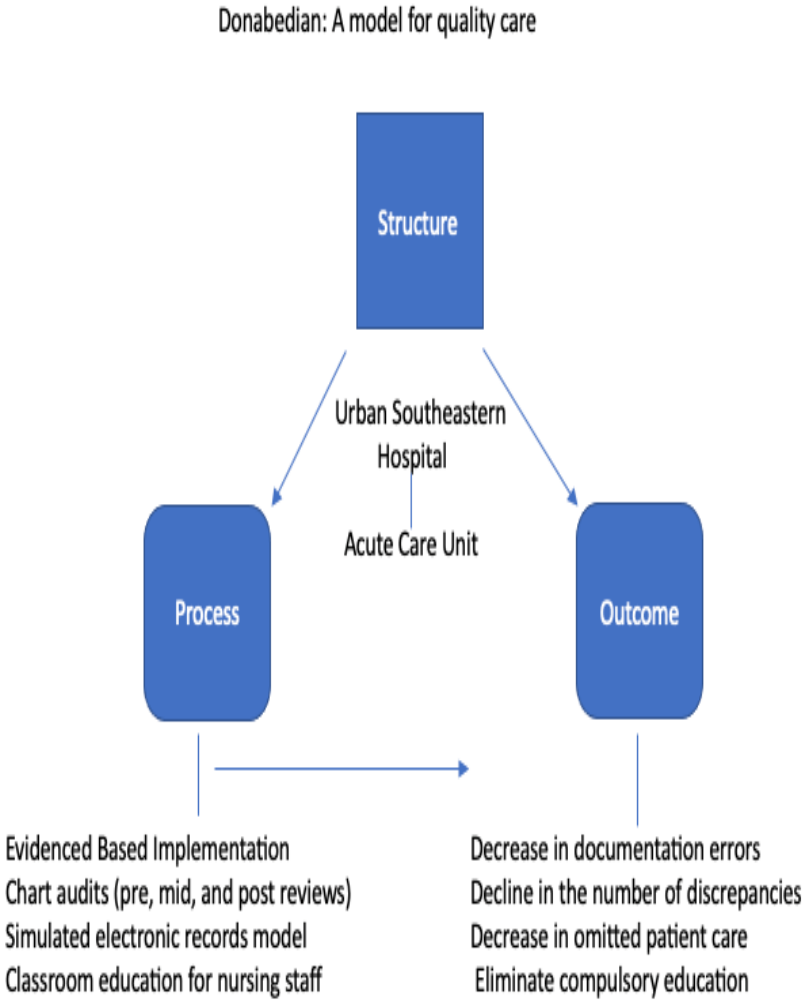
Appendix A

SWOT Analysis: Acute Care Unit at an Urban Southeastern Hospital

Internal		External	
Strengths	Weakness	Opportunities	Threats
-Support from manager and director in implementation of a new project. -Relationship with unit nurses can endorse support -Having knowledge of staff nurse work duties -Trained nurses who understand their patient population	-Potential staff resistance to change -Staffing issues -Nurse perceptions of adding extra work to their workload	-Collaborate with upper management -Cost effectiveness	-Lack of nursing staff commitment to project -Staff has grown tired of implementing new ideas

Appendix B

Donabedian Model



Appendix C

Demographics

1. Which type of hospital unit do you currently work on? (If you work on multiple units, select your primary unit.

2. You are a(n) (check one only):

   _____ RN _____ RPN/LPN/RNA

   _____ NP _____ Health Care Aide/PSW

   _____ Unit Manager (Head Nurse) _____ Charge Nurse

   _____ Clinical Nurse Specialist/Educator

   _____ Other (Please Identify) _____

3. You are an employee of (check only one):

   _____ The Hospital

   _____ A Nursing Agency

4. Are you:
   _____ Full Time

   _____ Part Time

5. How many years have you been practicing?

   _____ < 2 years

   _____ 2-5 years

   _____ 6-10 years

   _____ 10 + years

6. How many years have you been practicing at this facility?

   _____ < 2 years

   _____ 2-5 years

   _____ 6-10 years

   _____ 10 + years

Appendix D

DNP Project Participant Recruitment Flyer

What: Meeting to discuss Electronic Medical Records Documentation

Who: 6B Medical Surgical Unit

Why: Increase in Documentation Errors

Where: Room 6202

Dates and times: January 24, 2022, 03:00 am for night shift; 1400 for day shift
January 26, 0300 am for night shift; 1400 for day shift

How: Education/Training

Am I Documenting Accurately?

By Icy M. Hale, MSN, RN

Participation in this DNP project is voluntary

Appendix E

Participant Consent Form

Utilization of a Simulation Electronic Documentation Model for Healthcare Providers at a Southeast Urban Hospital

1. The purpose of this study is to use a Simulation Electronic Documentation Model to prevent documentation errors, missed consultations, eliminate compulsory education, and decrease hospital readmissions.

☐ I have had the purpose and nature of the study explained to me in writing and have had the opportunity to ask questions about the project.

2. There will be no monetary benefit from participating in this study.

☐ I understand that I will not directly benefit from participating in this study.

3. The information you provide for this study will be treated confidentially. No names will be used in statistical data, only numbers.

☐ I understand that all information I provide for this study will be treated confidentially.

4. This study will take place at this Urban Southeast hospital.

☐ I have been informed where the location of this study will take place.

5. This study will take approximately 2-3 hours.

☐ I have been informed of the length of time I expected to participate.

6. There is no risk for this educational training, but it may cause inconvenience due to time constraints.

☐ It has been explained that there is no risk, but maybe a matter of inconvenience about time.

7. Any identifying information will be substituted with a number to maintain confidentiality. Training records' confidentiality is protected and maintained per facility protocol and quality improvements and will only be discoverable except by law. Electronic training records per electronic protocols and paper information will be double locked behind a locked door and stored in locked cabinet. Those with permission will only access it, such as nurse educators, nurse manager, principal investigator, and investigative team.

☐ I have been informed of any identifying information collection, and how it will be collected.

☐ I have been informed of how my confidentiality will be maintained, where it is stored, who has access to the data and how long it will be kept and where it will be maintained.

☐ I have a right to withdraw (discontinue participation) from this study at any time without consequence or retaliation by notifying the principal investigator or anyone on the study team in writing, verbally, or failure to participate.

I _____ _____ _____voluntarily agree to
Printed Name of Participant Signature Date

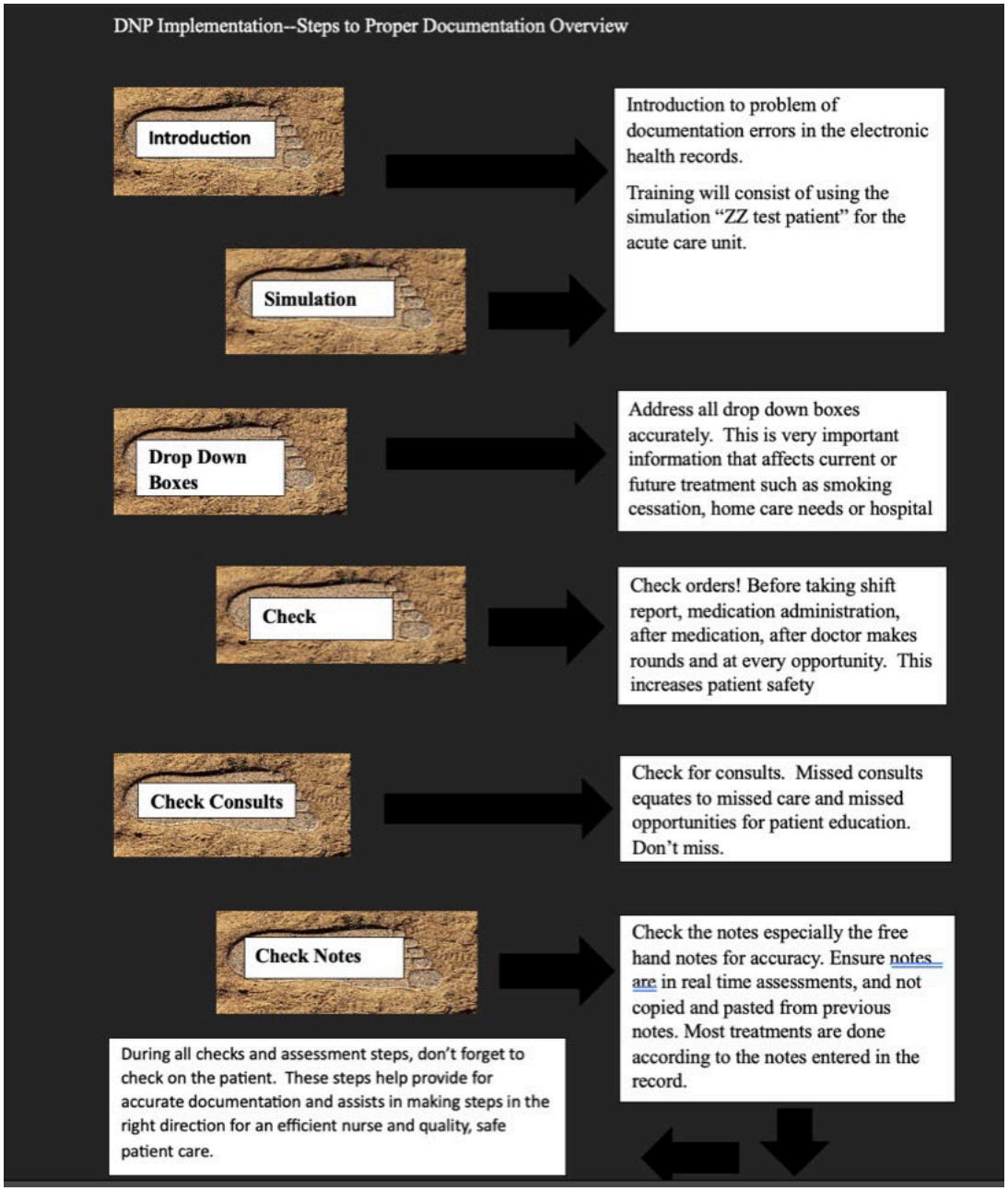
participate in this DNP project.

Principal Investigator Obtaining Consent _____ _____
Printed Name Signature Date _____

For withdrawal from this project, questions, or concerns, please contact Principal Investigator, Icy Hale at 205-933-8101 x 336539.

Appendix F

DNP Project Implementation



Appendix G

Chart Auditing Tool

TODAY'S DATE: **68 CHART AUDITS**
DATE OF ENCOUNTER: **LAST INITIAL /LAST 4**
SSN:

Date Elements	**Yes**	**No**
Admission Part I completed within 4 hours of admission?		
Admission Part II completed within 4 hours of admission?		
VANDD completed on admission or transfer?		
Morse Fall Risk completed with Interventions identifies?		
The Patient's Plan of Care has clear stated goals? **Must meet target 100%**		
The Veteran's Plan of Care has appropriate nursing interventions and outcomes identified? **Must meet target 100%**		
Rn POC Outcomes addressed by the end of the shift?		
Oral Care documented on the VAAES Non-Ventilator Oral Care Template?		
Inpatient Influenza Vaccine Administration Note completed upon admission, during hospital stay, or upon discharge? **Must meet target 100%**		
24-Hour Intake & Output note completed to include the Parent Note and Child Note (attached to Parent Note)?		
Pain assessment completed? **Must meet target 100%**		

Old Pain medication order include indication for administering pain medication? **Must meet target 100%**		
Was "pain" selected as reason for administering medication? **Must meet target 100%**		
PRN Effectiveness: Pain reassessment completed 2 hours after PRN dosing?		
DVT prophylaxis implemented and documented?		
EWS completed with VS?		
CHF discharge teaching completed?		
24-hour chart checks/verifications completed?		
Removal of Foley Catheter post-operative day 1 or 2, unless medically indicated?		
Is the daily weight completed?		

Appendix H

Timeline

Term Completed	Pre-Design	Actual Design	Implementation	Evaluation
Summer	Define Clinical Problem Develop the initial PICOT Complete an initial Review of the Literature			
Fall	Finalized the Picot Question Communicated with Southeast Urban Hospital Faculty Review of Literature: on Evidenced-based interventions to prevent documentation errors using an electronic simulation model for training/education.	Began draft of project proposal. Obtain Perc Approval Submit and obtain IRB approval		
	Select Theoretical Methodology Complete CITI training			
Spring			Implement DNP Project	Data collection and statistical analysis Final project manuscript preparation
Final Summer				Final project manuscript submission, project dissemination, poster presentation and submit ePortfolio.

Appendix I

Budget and Resources

Item	Budget	Actual Cost
Print Jobs (forms, flyers)	$ 13.00	$ 89.95 (Printer Ink) $ 13.00 (Ream of paper for Copying)
Refreshments for educational sessions (total of 4)	$200.00	$250.00 (from Sam's Wholesale Club)
Final Bound Copy of Manuscript (Estimate)	$175.00	$175.00
Resources		No Cost Classroom with computers Simulation Model Provided by Facility
Total		**$527.95**

Appendix J

CITI Training Certificate

CITI PROGRAM

Completion Date 22-Sep-2021
Expiration Date 21-Sep-2024
Record ID 44744148

This is to certify that:

Icy Moton-Hale

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

Social and Behavioral Responsible Conduct of Research
(Curriculum Group)
Social and Behavioral Responsible Conduct of Research
(Course Learner Group)
1 - RCR
(Stage)

Under requirements set by:

Jacksonville State University

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w64a4a5ba-2294-4507-bf90-82c8f039dfc9-44744148

Appendix K

JSU IRB Approval Letter

JSU | INSTITUTIONAL REVIEW BOARD
JACKSONVILLE STATE UNIVERSITY

Institutional Review Board for the Protection of Human Subjects in Research
249 Angle Hall
700 Pelham Road North
Jacksonville, AL 36265-1602

January 12, 2023

Icy Moton Hale
Jacksonville State University
Jacksonville, AL 36265

Dear Icy:

Your project "Utilization of a Simulation Electronic Documentation Model for Healthcare Providers to Reduce Documentation Errors in the Hospital Setting" 03182022 has been granted exemption by the JSU Institutional Review Board for the Protection of Human Subjects in Research (IRB) with the new dates of January 24, 2023 through May 4, 2023. If your research deviates from that listed in the protocol, please notify me immediately. One year from the date of this approval letter, please send me a progress report of your research project.
Best wishes for a successful research project.
Sincerely,

Lynn Garner
Associate Human Protections Administrator, Institutional Review Board

Appendix L

Hospital Approval Letter

Department of **Memorandum**

Date: October 14th, 2021

From: Nurse Manager, Staff Development

Subj: Letter of Support, DNP Project

To: Jacksonville State University

This is a letter of support for ___Icy Moton-Hale___, DNP student at ___Jacksonville State University, to implement the comprehensive DNP Project at the [redacted] System. It is important to understand that the student will utilize the name of the institution in their DNP Project, presentations, and publication in accordance with [redacted].

Respectfully Submitted,

JESSICA L. CREWS-SAUK 1 577078 Digitally signed by JESSICA L. CREWS-SAUK 1577078
Date: 2021.10.1409:32:35 -05'O0

Jessica Crews-Sauk, MSN, RN