

Running head: SCHOLARLY PROJECT

IMPROVING PATIENT SATISFACTION WITH THE VIRTUAL HANDOFF PROCESS
THROUGH THE UTILIZATION OF EDUCATIONAL PAMPHLETS IN THE EMERGENCY
DEPARTMENT

A Scholarly Project

Submitted to the

Faculty of Liberty University

In partial fulfillment of

The requirements for the degree

Of Doctor of Nursing Practice

By

Lynda Michelle Heintz

Liberty University

Lynchburg, VA

December 28, 2019

Signature Page

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Scholarly Project Chair Approval:

Dr. Cynthia Goodrich EdD, MSN, RN, CNE

Abstract

Boarding patients in the emergency room while waiting to transfer the patient to the proper unit can be harmful to clinical care and have significant financial opportunity costs. At one local hospital it was found that on average patients were being boarded in the emergency room (ED) for approximately 85 minutes waiting to be transferred. Several barriers that caused this delay were found including, delay in room cleaning, nurse staff shortage, and inability to give report to the nurse receiving the patient. In an attempt to combat this delay which may be caused by a difficulty in giving patient report, this organization is rolling out a virtual bedside handoff process. While virtual technology is not a new concept, there are many patients that may not be comfortable with the technology. The purpose of the evidence-based project was to provide a written educational pamphlet that details the how's and why's of the virtual handoff process to the patient to be given upon admission. The goal of the educational pamphlet was to increase the patients' satisfaction with the process. A pre-survey was given to a group of patients after they experienced the virtual handoff process to assess their comfort level. These results were compared to the post-survey results of patients that received the educational pamphlet prior to experiencing the virtual handoff process. Ten pre-surveys and seven post-surveys were analyzed utilizing SPSS and descriptive statistics. The analysis concluded that the participants who received the educational pamphlet felt more prepared for the virtual handoff process.

Keywords: Patient handoff, virtual handoff, bedside handoff, ED boarding, patient satisfaction

Dedication

I dedicate this project to my amazing husband who has believed in me from day one and never let me give up, even when it was totally overwhelming. Thank you, Derek, for proofreading endless papers and going without a home cooked meal for the past two years. Also thank you for my family for understanding when I had to miss a function to work on an assignment.

Acknowledgements

First and foremost, I want to Thank God. It is only by his Grace and blessings that I have been able to weather the trials and triumphs of this program. I am thankful that He chose me to work for Him as a Nurse Practitioner and look forward to the future He has planned for me in my new role.

Additionally, I would like to thank my preceptor, Ginger Maness MSN-Ed Director of Emergency Services. Thank you Ginger for all your support and help over this past year. Your patience, guidance, and friendship mean a lot to me.

Finally, to my chair, Dr. Cynthia Goodrich, you were definitely a blessing during this journey. Thank you for talking me off the ledge on quite a few occasions. Thank you for supporting me through my scholarly project and providing the guidance I needed to succeed.

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Lists of Abbreviations

Against Medical Advice (AMA)

Collaborative Institutional Training Initiative (CITI)

Emergency Department (ED)

Electronic Medical Record (EMR)

Healthcare Providers (HCPs)

Intensive Care Unit (ICU)

Internal Review Board (IRB)

Limited Health Literacy (LHL)

Left Without Being Seen (LWBS)

Operating Room (OR)

Observational Unit (OU)

Simple Measure of Gobbledygook (SMOG)

Section One: Introduction

Recent research has established Emergency Department (ED) congestion is often caused by the inability to transition patients into inpatient units within the hospital in a timely fashion. Boarded patients in the ED are harmful to clinical care and have significant financial opportunity costs. Boarding is recognized nationwide to be a severe problem in emergency departments. As it can potentially prevent incoming patients from being treated, also lead to increased left without being seen rates, and increase the rate of patients leaving against medical advice, a route taken by some patients frustrated with long wait times.

The leadership at one hospital within a large healthcare organization is attempting to improve the admission process by utilizing a virtual handoff approach. The goal of this new approach is to avoid patient handoff delays once the bed assignment has been obtained. While virtual technology is not a new concept, there are many patients that may not be comfortable with the technology. What we need to find out is how to educate an admitted patient and the patient's family regarding the process to improve their comfort leading to improved patient satisfaction. Therefore, the project leader proposed an evidence-based project to develop patient education material to be given upon admission that will explain the how's and why's of the virtual handoff procedure.

Background

Admitting a patient to inpatient care is a complex process that, unless carefully managed, can lead to long delays in service and a poor patient experience. Waiting for admission paperwork, or for a bed to be assigned can be frustrating for anyone. But for patients who are sick, or for an exhausted mother with a crying baby who needs to be admitted, wait times can become emotionally and physically difficult as well. According to the American Hospital

Association, 35.4 million admissions occur annually in United States hospitals (Vogelsmeier & Despins, 2016). Among those admissions, approximately 16 million occur through the emergency department (ED).

Staff nurses must balance providing care to existing patients with performing the tasks necessary for admitting, discharging, and transferring other patients. Currently at one hospital, leadership is rolling out a new admission process. It was found that on average patients were being boarded in this ED for approximately 85 minutes waiting to be transferred. Several barriers were found including, delay in room cleaning, nurse staff shortage, and inability to give report to the nurse receiving the patient. To try to reduce the difficulty in giving patient report, leadership is implementing a virtual handoff process. Instead of removing a nurse from the ED to transport the patient to the admission room and giving bedside face-to-face report, the staff will now give report via a skype-like application.

To complete this process, the ED nurse will enter the patients' room with a computer on wheels and connect with the nurse on the unit. Together, they will then include the patient during the report process. As with any new process, implementation of such electronic tools should be monitored for unintended consequences, which can include decreased patient comfort with the new process leading to decreased satisfaction.

Problem Statement

Optimized healthcare outcomes rely on good patient handoff reports among healthcare providers and include patient involvement. The Joint Commission Center for Transforming Health Care estimated that 80% of serious medical errors involved ineffective patient handoff reports that failed to relay pertinent patient information and recommended deliberately designing key care processes consistent with the tenants of high reliability organizations that standardize

patient handoffs (Callaway et al., 2018). With the rising occurrence of ED boarding of admitted patients, it is more important than ever to improve the handoff process.

There have been various attempts to improve the handoff process. Recently there is an interest in virtual handoffs. This is a relatively new concept that has not been abundantly reported on. A study completed by Santa et al., (2017) found patients felt included in the virtual handoff process and had 50% improved patient satisfaction. However, there is limited research on the effect of educating the admitted patient about the virtual handoff process prior to completing the handoff. When creating patient education material, it is important that all materials and communications with patients are tailored in a way that is easy to be administered and at a level that everyone can benefit (Retha, Azmi, Jou, & Kumar, 2018).

Purpose of the Project

The purpose of the evidence-based project was to provide a written educational pamphlet that details the how's and why's of the virtual handoff process to the patient to be given upon admission. The goal of the educational pamphlet was to increase the patients' satisfaction with the process.

Clinical Question

Will providing admitted patients ages 18-60 with an educational pamphlet explaining the new virtual handoff procedure improve patient comfort with the new procedure and increase patient satisfaction compared to those patients that did not receive the educational pamphlet?

Population

The targeted population included admitted patients within the emergency department at one local hospital. The population utilized was English speaking patients ages 18-60 and excluded high risk populations. For the purpose of this project, high risk populations included

pregnant women, intensive care unit (ICU) admitted patients, trauma admitted patients, prisoners, sedated patients, and those patients with cognitive disorders.

Intervention

The primary intervention purposed was to increase patient comfort with the virtual handoff process by including an educational pamphlet explaining the how's and why's of the virtual handoff. Therefore, theoretically increasing patient satisfaction with the admission process.

Comparison

The new virtual handoff procedure at this facility was initiated mid-February 2019. A survey of patient satisfaction with the new process was initiated. Those results were then compared to surveys taken after an informational pamphlet aimed to educate the patient on the virtual handoff process was utilized to evaluate if any increase in patient satisfaction was achieved.

Outcome

The primary outcome of the informational pamphlet was to increase patient satisfaction with the admission process.

SECTION TWO: LITERATUR REVIEW

Search Strategy

A comprehensive electronic database search was completed using EBSCOhost, CINAHL, PubMed, MEDLINE, and the Cochrane Library. Search terms and phrases included *patient handoff, virtual or bedside, ED boarding, admission satisfaction, teach back method*. The studies included were written from 2008-2018. Of the articles reviewed only one was not written

within the past five years. Studies reviewed included cohort studies, quasi-experimental research studies, descriptive studies, systematic reviews, and observational analysis.

Critical Appraisal

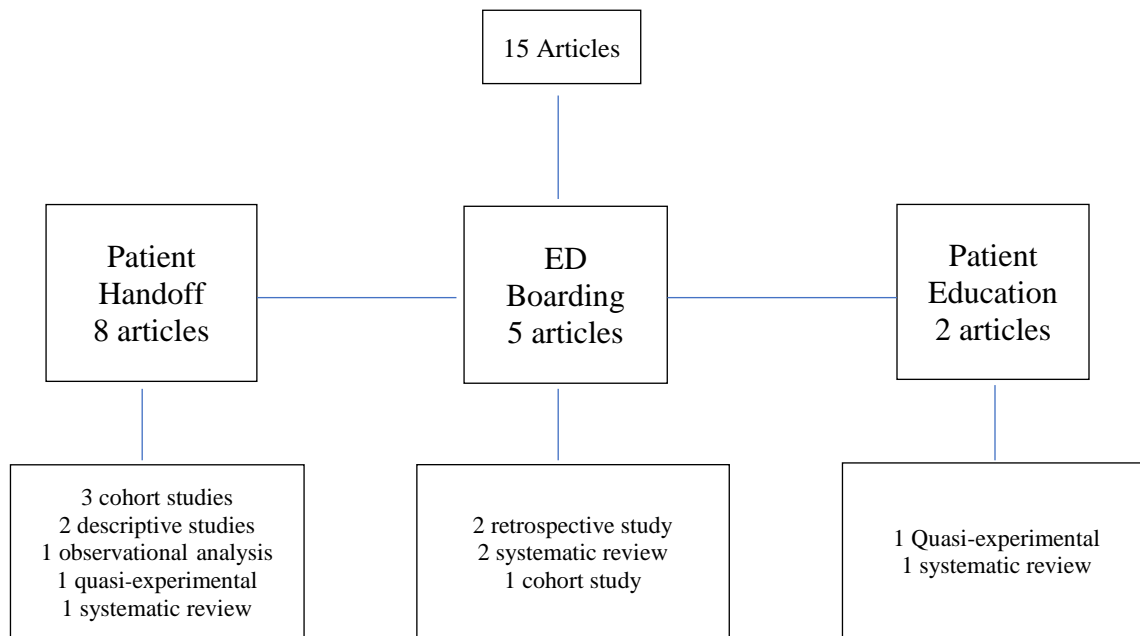


Figure 1: A diagram look at the literature review for this study

The literature review yielded various types of studies as listed in figure 1. The majority of articles reviewed were regarding the patient handoff procedures in multiple settings. There were three major topics researched; patient handoff, ED boarding, and patient education. The strengths across the topics included the same themes. All articles had the support of nursing leadership and utilized information gleaned from those that provided direct patient care. There was a noted use of qualitative methodology such as interviews, focus groups, and field notes. Finally, research result outcomes match previous study conclusions.

Limitations of the Literature

Each topic area had a variety of weaknesses. In relation to patient handoffs, one weakness found was in the utilization of staff to run the research as well as complete the surveys. This

particular study was conducted in a military hospital. During the research process there were issues such as staff turnover, staff absences, and staff deployments. This may have led to incomplete survey completions. Other weaknesses included small sample sizes, short study periods, and most were completed at single organization sites which could result in decreased generalizability. Finally, the surveys were voluntary and direct observation was utilized which may result in alteration of normal behavior.

Weaknesses found during the review of ED boarding articles included potential for limited findings secondary to the small sample size and retrospective designs. Furthermore, in one article data was only analyzed from a single center and in another standard administrative date entered by clerical staff instead of electronic medical records (EMR) date was utilized. A common weakness of small sample size was again noted in the review of the patient education topic. Additionally, only articles written in English were used which could potentially lead to important information being missed.

Synthesis

Emergency department (ED) crowding is a nationwide problem, with 90% of hospitals in the United States reporting it as a major problem (Pulliam, Liao, Geissler, & Richards, 2013). It can be associated with delays in treatment, medication errors, poor patient outcomes, and even increased morbidity and deaths. It is also associated with decreased patient satisfaction, and higher rates of patients leaving against medical advice (AMA) and left without being seen (LWBS) (Pulliam et al., 2013). The rise in hospital admissions is due to an increase in population as well as an increase in ED visits coupled with advances in healthcare with improved disease recognition and management (Gonnah, Hegazi, Hmdy, & Shenoda, 2008).

There has been a variety of solutions to the ED boarding situation trialed. One such solution tried was the development of observational units (OU). These units were designed as an area that can manage patients requiring longer observation and further testing than the typical ED patients. It is estimated that 36% of EDs in the United States have an OU (Cheng, Barclay, & Abu-Laban, 2016). Chen et al., (2016) noted in their literature review previous research on the effectiveness of OUs were commonly based on the management of patients with complaints such as chest pain or asthma. Chen and colleagues attempted to determine whether an OU reduced emergency department length of stay and hospital admission rates for adults with a variety of presenting complaints. The results revealed only a reduction of hospital admission rates at one of the two sites studied.

A study by Gonnah et al., (2008) in Kuwait, went a step further by attempting to develop an admission avoidance team that would focus on the implementation of disease management guidelines as well as maximizing the use of OUs. Their results revealed the application of disease management protocols or guidelines was effective in reducing admissions for bronchial asthma, heart failure, pneumonia and chest pain. The major component of ED crowding noted in other studies is admitted patients awaiting an inpatient unit bed. One solution that has been trialed, is the boarding of admitted patients in inpatient unit hallways. While patients seem to prefer unit boarding based on prior reports, Pulliam et al., (2013) sought to evaluate the nurses' perspective of boarding patients in the unit hallways. They noted inpatient nurses and those who have never worked in the ED are more opposed to inpatient boarding than ED nurses and nurses who have worked previously in the ED.

One factor of importance to improve patient care and boarding times is improving the patient handoff process. Although there are multiple root causes for the high rate of medical

errors and adverse events in hospitals, miscommunication has consistently been identified as one of the most important. Almost half (386) of the 824 sentinel events reported to The Joint Commission in 2016 involved “handoff” failures, for which communication among staff was the most frequently identified contributing factor (Starmer et al., 2017). Multiple studies have addressed various ways to improve the handoff process. Most clinicians learn handoffs informally in the clinical learning environment, resulting in substantial variability in the format and process of verbal and written handoffs within and between institutions.

In addition to addressing the variability in the handoff process, this literature review found the focus has been on bedside reporting, written reporting, and verbal report using the I-Pass method. Lane-Fall and colleagues (2018) found that in two mixed surgical ICUs in a single urban academic health system, clinicians routinely participating in OR-to-ICU handoffs identified numerous factors that facilitated or presented barriers to conducting optimal postoperative handoffs. Barriers included time pressure to return to the operating room (OR), lack of familiarity and comfort with the perioperative electronic medical record system, and competing priorities, which included caring for other patients and attending to personal needs (Lane-Fall et al., 2018).

In 2016, The Institute for Healthcare Improvement recommended the use of the standardized communication tool SBAR (Padgett, 2018). Smith et al., (2018) conducted a mixed-methods, pre-test/post-test study at a 560-bed academic health center with 60,000 emergency department patient visits per year. Admission-handoff best practices were integrated into a modified SBAR format, resulting in the Situation, Background, Assessment, Responsibilities & Risk, Discussion & Disposition, Read-back & Record (SBAR-DR) model. The composite quality score improved in the post-intervention phase ($7.57 + 2.42$ vs. $8.45 + 2.51$, $p=.0085$). Three of

the 16 individual scoring elements also improved, including time for questions (70.6% vs. 82.7%, $p=.0344$) and confirmation of disposition plan (41.8% vs. 62.7%, $p=.0019$). The majority of emergency and internal medicine physicians felt that the SBAR-DR model had a positive impact on patient safety and handoff efficiency (Smith et al., 2018).

During this authors' literature review it was noted across all articles researched indicates a need for standardization of the handoff process both in the procedure and in the documentation. While it has consistently been noted a standard process needs to be followed, there are differing ways on how the handoff should occur. The two most utilized ways are bedside face-to-face handoff and telephone handoff. However, current technology opens a window of opportunity for a handoff in a virtual environment through a secured mobile device that is HIPAA compliant, using a web-based application with video conferencing capability (Santa & Roach, 2017).

The review of literature did not result a large amount of research in the area of this new technology possibility. Santa and Roach (2017) found during their study nurses were initially reluctant to try the new process and technology barriers such as inconsistent WIFI connection and nurses lack of knowledge in operating the tablets were present. However, the study noted improvement of patient satisfaction and nurse buy-in after the initial learning phase. While the study by Santa and Roach found fifty percent of the patients, they surveyed reported the virtual interaction reduced their level of anxiety about the transfer to a new care environment, there has been no reported research regarding patient education of the virtual handoff.

Patients with limited health literacy (LHL) were often linked with difficulty in managing chronic diseases, lower rate of medication adherences, increased emergency care use, and risk of hospitalization. In the United States, 26% of the population has difficulty with common health tasks such as complying with directions of medication administration and appointment

dates, filling out forms, and understanding health information (Retha et al., 2018). It is important to consider a patients' health literacy when attempting any education of patients. During the literature review, three main categories of perceived barriers identified from the perspective of healthcare providers (HCPs) were healthcare system barriers, patient-related barriers, and HCP-related barriers.

Conceptual Framework

The Iowa Model of Evidence-Based Practice to Promote Quality Care was utilized during the completion of the scholarly project. The Iowa Model was selected because it has been used in numerous academic settings and health care organizations. The Iowa Model focuses on organization and collaboration, allowing nurses to target knowledge- and problem-focused triggers, encouraging personnel to question current nursing practices and determine whether care can be improved by using current research findings (White & Spruce, 2015). The first step in the Iowa Model is selecting a topic. Selection of the topic can stem from problem-focused triggers such as risk management data, process improvement data, internal/external benchmarking data, financial data, or an identified clinical problem (White & Spruce, 2015). The problem focused trigger for this project was potential patient satisfaction reduction as a result of comfort level using a virtual handoff process.

The next step within the Iowa Model is to form a team responsible for evaluating the selected problem or topic and developing and implementing a solution (White & Spruce, 2015). This student was the project leader and the director of emergency services at the local ED was the practicum preceptor. Together we identified the targeted problem and developed the purposed solution to the problem. Clinical practice guidelines can help the team find clinical practices that are based on the best available evidence. Together, the team developed guidelines

for the project. The clinical practice guidelines needed to be patient-focused as well as scientifically sound, clinically useful, and informative for nursing leaders, health care professionals, physicians, policy makers, and the public as suggested by White and Spruce (2015).

Summary

Emergency Department (ED) overcrowding has steadily worsened over the past two decades as the ED increasingly becomes the de facto site for acute, unscheduled care and the primary entry point for patients requiring hospitalizations. ED overcrowding has a direct correlation with poor clinical outcomes, including delays in pain management (Lord et al., 2018). Emergency admissions are rising, and bed crises are occurring almost daily in many hospitals. Increased waiting time for transfer to an inpatient bed has become the most important cause of ED overcrowding.

One factor potentially causing the delay in transfer of an admitted patient is difficulty with the patient handoff process. As a result of the significantly large number of handoffs that occur during hospitalizations, the opportunity for adverse patient events increases without some type of standard (Padgett, 2018). Evidence suggests bedside handoff reporting improves patient safety, reduces medical errors, contributes to patient and staff satisfaction (Santa & Roach, 2017). With the new virtual technology available, the handoff process can be completed in real time with patient involvement. The research has focused on ways to improve the handoff process, however more research needed to be developed to better understand the patient's perspective of the process.

Section Three: Methodology

Design

The scholarly project was an evidence-based practice project to improve a quality process within a local hospital organization. It was an evidence-based project utilizing a quasi-experimental approach to collect and analyze data. The project followed a defined sequence of steps and included a specific improvement target with the goal of increasing customer satisfaction with the new virtual handoff process. The project leader defined the problem pertaining to the need for improved admission handoff processes to reduce the amount of ED boarding.

The organization has set a goal of having an admitted patient transferred to their new bed assignment from the ED within 60 minutes of making the bed request. A review of the data attained from January through May 2019, shows the ED where this student completed the scholarly project has an average time of 87.40 minutes (Appendix E). The organization within the project setting had chosen to implement a virtual handoff process to combat the ED boarding difficulties they were experiencing. Their main focus was the development of the new process and staff implementation. However, there has been a lack of attention paid to how the patients will perceive this new method of handoff. The project aimed to evaluate patient satisfaction of patients who were given education information regarding the new process prior to implementation verses those that were not.

The measurement includes a complete picture of the current state of the project and established baseline through the measurement of the existing system (Quality-One International, 2015). The measurement includes a complete picture of the current state of the project and established baseline through measurement of the existing system (Quality-One International,

2015). The data management SPSS was utilized to evaluate the findings of the pre and post surveys. If the statistical information proves an increase in patient satisfaction with the use of the education informational pamphlet it may be trialed on a larger scale across the organization and further monitored for any possible needed changes.

Measurable Outcomes

The measurable outcome with this project would be an increase in patient satisfaction with the virtual handoff experience after receiving the educational pamphlet that explains what the patient can expect during the process. To measure the outcome, a pre and post survey was given. Additionally, the organization will be able to measure any improvement in the ED bed assignment to transfer times to assess for improvement based on this intervention.

Setting

The setting of the project was an acute care facility in the south eastern part of the United States. This hospital is a 130-bed acute care facility and is the second busiest emergency department (ED) in the local area ("University City," 2019). The ED is a 34-bed facility with the capability to see minor patients up to trauma patients. The populations of patients vary in backgrounds which can include low income, Medicaid/Medicare, and private pay/private medical insurance. This project helps to support the organization's mission by improving patient satisfaction through the use of an educational tool developed to explain a new virtual handoff process. The organization implemented a virtual handoff process to decrease ED boarding of admitted patients in an attempt at improving patient's health outcomes. The stakeholders for this project included the patient/family, patients waiting to be treated in the ED, nursing staff, unit and ED managers, and hospital administration.

Population

The proposed population for the project incorporated a convenience sample of patients who were admitted from the ED to units that are located within the same hospital. The participants utilized were gathered over a 30-day period for both the pre and post survey groups. Each group included English speaking patients ages 18-60 and excluded high risk populations. For the purpose of this project, high risk populations included pregnant women, ICU admitted patients, trauma admitted patients, prisoners, sedated patients, and those patients with cognitive disorders.

Ethical Considerations

The DNP scholarly team has completed research ethics training through the Collaborative Institutional Training Initiative (CITI) to ensure protection of human subjects. The proposed project was first deemed exempt by the Liberty University Internal Review Board (IRB) and then the organization's IRB. The surveys utilized contained no patient identifying information to further protect the participants. In addition, there was no need for this project leader to access the participants medical record during the project.

Data Collection

A baseline (pre-intervention) data was collected on participants who met the criteria over a 30-day period. The project leader decided no survey would be initiated until the new virtual handoff process had been implemented within the organization for a minimum of 30-days. This allowed the staff to become more comfortable with the process. The goal of this delay was to decrease any patient dissatisfaction that may arise from any perceived lack of nurse knowledge of the new procedure. A second survey was given to the post-intervention group which was also

collected over a 30-day period. The post-survey was given to those participants that met the criteria and have received an educational pamphlet detailing the handoff process.

Tools

A pre and post survey was developed to evaluate patients' comfort with the technology being used in the virtual handoff, comfort with the virtual process of the handoff, and overall satisfaction of the virtual handoff process. Since this was a relatively new concept of virtual handoff process, there were no survey tools currently developed. Therefore, this project leader was tasked with creating them. Both surveys underwent evaluation by five professionals to assess for content and space validity.

An educational pamphlet was also developed to explain why the virtual handoff process was being utilized and what the patient can expect to occur during the process. The pamphlet was written at an appropriate educational level for the patient population and evaluated by a Simple Measure of Gobbledygook (SMOG) test. A SMOG test assesses the approximate reading age of newly developed written documents by breaking down the total number of polysyllabic words.

Intervention

In preparation for the scholarly project, the project leader attended leadership meetings detailing the planned roll-out of the new virtual handoff process. In addition, the leader participated in the ED staff training sessions on the use of the equipment and steps for proper utilization of the process. To prevent potential bias in the data caused by the participants sensing staff unfamiliarity with the process, it was felt a 30-day delay in survey collection was warranted. During this time, the project leader was able to observe the ED staff utilizing the virtual handoff in a clinical setting.

There were no previously completed pre or post surveys that would fit this project. Therefore, the project leader was tasked with their creation. To accomplish this, the leader worked with the organizations' nurse consultant. Together, the surveys were developed with simplicity in mind. Afterward, the surveys were given to five separate people of various educational levels to check for validity. Simultaneously, the educational pamphlet was created. Since the pamphlet was to be given to patients, a SMOG test was completed. The purpose of this test was to evaluate the educational reading level of the information by calculating the square root of the number of polysyllabic words within written information.

With the pre and post surveys and the educational pamphlet completed, the project leader then worked with the staff educator to educate the ED staff about the purpose of the project. During this time, the staff was made aware of the plan to administer the pre-surveys to qualifying participants over a 30-day period and how to securely store them in a locked cabinet. After the initial 30-day collection, the staff educator assisted with staff education of the educational pamphlet and the administration of the post-surveys in the same manner as the pre-surveys.

Feasibility Analysis

The scholarly project was budget neutral and incurred no additional expenses for the organization. The project strengthened an intervention and no additional materials or personnel were required. Approval to implement the project in the proposed setting was supported as a part of the approval process. The scholarly project was part of the educational requirements of the DNP student at Liberty University and the student was not paid to do the project. The resources required for the project included a printer, paper, secured folder, lockable filing cabinet, and pencils.

Data Analysis

This scholarly project was a pilot study per the Iowa Model. The goal was not to prove statistical significance but to find clinical relevance. Both the pre-intervention and post-intervention survey data was collected by the ED nursing staff and then examined using SPSS. The plan was to evaluate the data as a whole to monitor for increased patient satisfaction after the education pamphlet was utilized. Additionally, using the SPSS application, the data was further broken down to evaluate if there was a gender or age difference in the data results. No surveys were incomplete; therefore, all pre- intervention surveys $n=10$ and post-intervention surveys $n= 7$ were included in the data analysis. The DNP project leader used descriptive analysis to show the differences between the pre and post intervention survey deviations for this project.

Section Four: Results**Descriptive Statistics**

Both the pre-survey and post survey groups were asked if “all of their questions had been answered” by clinical staff. While reviewing the survey responses for both the pre and post survey groups, the project leader found 100% of the participants felt their questions had been answered completely. Figure 2 reveals the participants for the pre-survey group were in the 46-55 age group with women comprising the majority. However, the results were spread more evenly across all of the age groups in the post-survey.

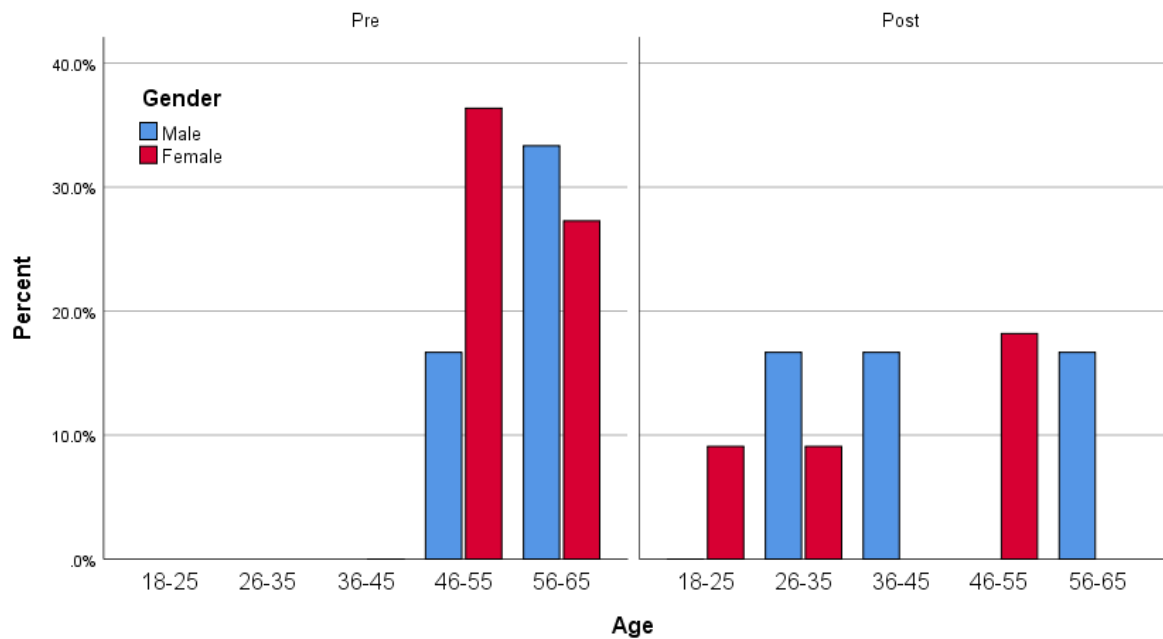


Figure 2: *Distribution of gender by age, pre and post survey*

During the scholarly project, the pre-survey group participants were asked “did you feel ready when the facetime happened?”. Of the ten surveys completed, seven participants felt ready, one patient did not answer the question, and two did not feel ready. Of the two participants that did not feel ready, one felt not ready at all and one felt almost ready (See figure 3). To get a better understanding, this finding needs to be evaluated further to see exactly why patients may not feel ready for the virtual handoff experience. In comparison, of the seven completed surveys, the post survey participants felt completely ready after reviewing the educational flyer that explained the upcoming facetime experience (See figure 3).

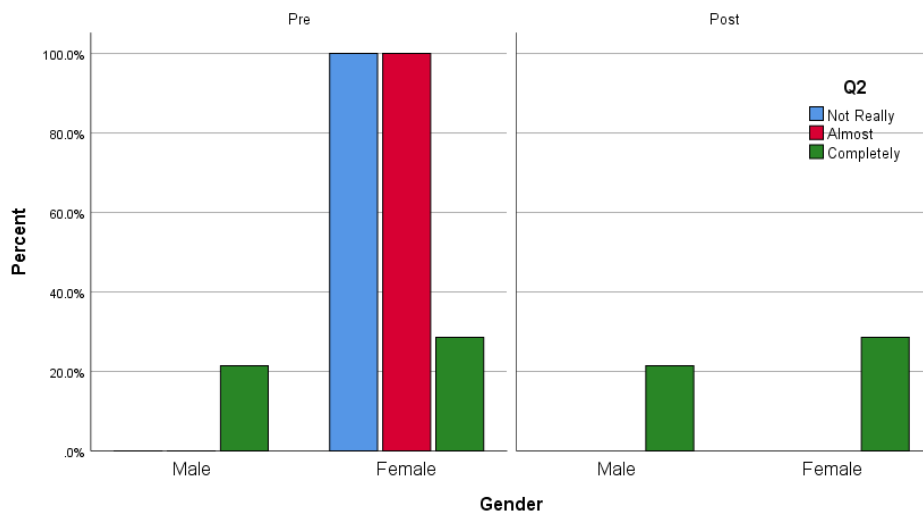


Figure 3: *Distribution of response to Q2 for pre and post survey*

Finally, both groups were asked a third question. The pre-survey participants were asked “did you understand what was happening when the nurses discussed your health?”. While the post-survey participants were asked “did the flyer explain what would be talked about the facetime?”. Figure 4 reveals that unlike the results for question two, the pre-survey group felt they understood what was happening between the nurses while discussing bedside report. In contrast, there happened to be one participant that reviewed the pamphlet prior to the facetime experience that did not understand what the nurses would be discussing. This finding may indicate the need for more details about this portion of the handoff process be added to the educational pamphlet.

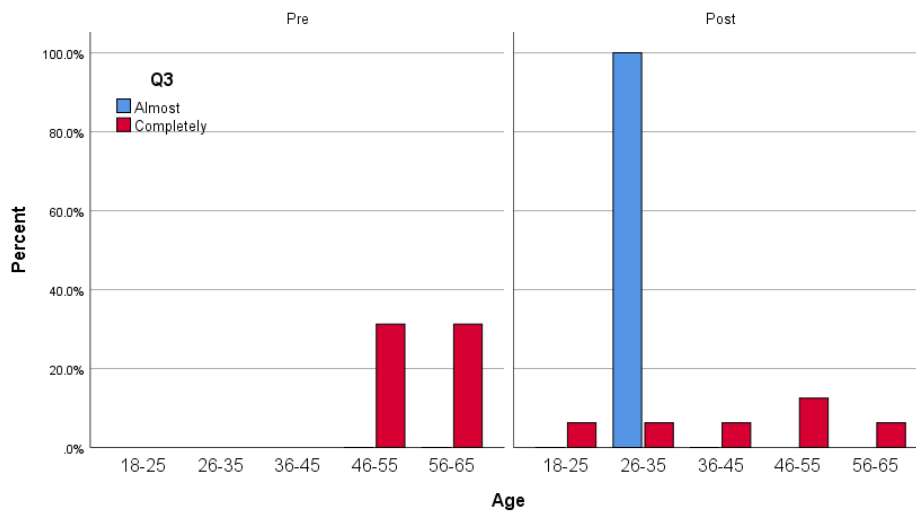


Figure 4: *Distribution of responses to Q3 by age, pre and post survey*

Section Five: Discussion

Implications for Practice

The purpose of the evidence-based project was to provide a written educational pamphlet that details the how's and why's of the virtual handoff process to the patient to be given upon admission. The goal of the educational pamphlet was to increase the patients' satisfaction with this handoff process. The findings suggest some patients may not feel ready to participate in a facetime bedside report when it is convenient for the nursing staff. Additionally, some patients may need more details about what to expect to hear when the nurses are discussing the admission information regarding their health status. Surprising to this project leader, the participant who did not feel the pamphlet explained enough about what the nurses would be discussing was a female in the 26-35 age range (See figure 3 Pg.28).

Study limitations include the small sample size of 17 total patients who participated in the study. All ten of the pre-survey participants and all seven of the post-survey participants were included in the study. Table 1 and Table 2 listed below shows participant breakdown. The

biggest limitation of this scholarly project was the failure of the nursing staff in the emergency department to handout the surveys and the educational pamphlet to the patients that qualified for project inclusion. Both the Emergency Department Director of Nursing and the Clinical Nurse Educator talked with the nursing staff on multiple occasions to try to increase participation. In addition, another limitation was nursing staff avoidance of the virtual handoff process in general. It was noted by management, the tool was not being utilized for various reasons. The two biggest reasons included poor WIFI connection in the emergency room department and unit nurses not being available for report when ED nurses had the time to give it.

Table 1: *Frequency distribution of responses to Questions*

	Q1		Q2		Q3	
	Pre-Survey	Post-Survey	Pre-Survey	Post-Survey	Pre-Survey	Post-Survey
Completely	10	7	7	7	10	6
Almost	0	0	1	0	0	1
Not Really	0	0	1	0	0	0
No	0	0	0	0	0	0
Total	10	7	9	7	10	7

Table 2: *Frequency distribution of Gender and Age-Group*

	Pre-Survey	Post-Survey
Gender		
Male	3	3
Female	7	4
Age		
18 – 25	0	1
26 – 35	0	2
36 – 45	0	1
46 – 55	5	2
56 – 65	5	1

Sustainability

For the organization's virtual handoff to be sustainable, the organization will need to address the poor WIFI connection. After the WIFI is more consistent, they will need to address lack of nurse participation. The project found two separate issues with nurse participation;

nurses not following policy and utilizing the virtual handoff, and nurses not handing out the surveys. To address the lack of virtual handoff utilization, more education on the need and importance of this process is warranted. This can be accomplished within the organization through creating an education module that is required by all nursing staff on a yearly basis. If the organization decides to duplicate this project on a larger scale, the staff will need to be monitored for compliance of both virtual handoff use and survey collection.

Once these limitations have been addressed, more research is needed to see if the same results of this project can be duplicated. If these results from the smaller scale are confirmed, the organization should consider utilizing the educational pamphlet prior to the virtual handoff process. In theory, proper utilization of the educational pamphlet along with the virtual handoff, should lead to decreased ED boarding. Therefore, decreasing ED wait times and improving overall patient satisfaction.

Dissemination Plan

Evidence supported a positive correlation with increased comfort of the virtual handoff process and the educational pamphlet. Therefore, the evidence demonstrated by this scholarly project endorses the utilization of the educational pamphlet. The primary target for this scholarly project were patients within the emergency department at one local hospital. The population utilized were English speaking patients ages 18-60 and excluded high risk populations. For the purpose of this project, high risk populations included pregnant women, intensive care unit (ICU) admitted patients, trauma admitted patients, prisoners, sedated patients, and those patients with cognitive disorders. While the original educational pamphlet was developed for utilization in one emergency department, the organization could potentially initiate the pamphlets at all of

their emergency departments. There is also a potential use for the educational pamphlet on each unit that may need to complete a virtual handoff upon transferring a patient to another unit.

Dissemination of the project results should be shared with nursing staff to promote better education of patients prior to a virtual handoff. This can be accomplished in one of two ways at this organization. First option would include adding the information to one of the monthly educational update sessions. Another option would include discussing the results at the beginning of shift huddles and making the written report available for the staff to read. On a more global scale, the project leader should attempt to have the findings published in a nursing journal or to submit a poster at a nursing conference. Both of these options would get the information out to other organizations that may consider implementing a virtual handoff process of their own.

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Appendix A

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
Example, A. (2015) Title etc. per Current APA	To identify the need for technology to prevent falls	A convenience sample of 44 nurses in an acute care hospital	A non-experimental, descriptive survey	Findings indicate that fall rates decreased by 2% with the introduction of technology into the care setting	Level 6: descriptive design	Conducted in only one setting, small sample size	Does provide some good foundational information even though the level is a 6.
Callaway, C., Cunningham, C., Grover, S., Steele, K., McGlynn, A., & Sribanditmongkol, V. (2018, August). Patient Handoff Processes. <i>Clinical Journal of Oncology Nursing</i> , 22(4), 421- 428. http://dx.doi.org/10.1188/18.CJON.421-428	To identify patient activation scores, patient readmission rates, and nursing staff satisfaction before and after implementing bedside handoffs, the teach-back method, and discharge bundles on an inpatient oncology unit at a large military treatment facility.	Sample of patients with cancer on an oncology unit at a large military treatment facility.	A series of three cycles using the Plan-Do-Study-Act framework guided implementation of the multifaceted approach.	After implementation of the multifaceted approach, readmission rates decreased from 32% to 25%, and staff satisfaction improved.	Level 4 Cohort study.	Some of the challenges experienced in implementing this multifaceted approach included high staff turnover and prolonged staff absences because of military deployments, which necessitated staff from other units to augment the oncology unit staffing. These factors may have indirectly influenced readmission rates.	This article used both patient and nurse feedback to make improvements.
Centrella-Nigro, A., & Alexander, C. (2017, January). Using the teach-back method in patient education to improve patient satisfaction. <i>The Journal of Continuing Education in Nursing</i> , 48(1), 47-52. http://dx.doi.org/10.3928/00220124-20170110-10	To assess nurses' knowledge, attitudes, and beliefs about teach back	The intervention group consisted of all the permanently assigned nurses on a designated nursing unit (n = 24). The 1-hour teaching intervention was presented as an educational requirement for the intervention unit, and each nurse was paid for the extra hour and	A pretest and post -test design tested 24 nurses' knowledge, attitudes, and beliefs about teach back. Education specialists provided a 1- hour teaching session on teach back to all nurses in the intervention unit.	A significant improvement in knowledge scores in the pretest-posttest was found using paired t tests (p = .002). Qualitative analysis of nurses' comments demonstrated strong support for teach back in the post-test.	Level 3 quasi-experimental research study	The relatively small number of nurse participants in the intervention group (n = 24) and the use of two nursing units from one hospital limits its generalizability	The article is useful in evaluating possible teaching methods to help possible develop a teaching plan for new handoff procedure.

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
		awarded one contact hour. The control group consisted of the permanently assigned nurses on another similar medical unit (n = 30). The nurses on this unit were blinded to the intervention in which the experimental unit nurses participated.		The HCAHPS scores were not significantly improved in the intervention unit when compared with the control unit.			
Cheng, A., Barclay, N., & Abu-Laban, R. (2016, December). Effect of a multi-diagnosis observation unit on emergency department length of stay and inpatient admission rate at two Canadian hospitals. <i>The Journal of Emergency Medicine</i> , 51(6), 739-747. http://dx.doi.org/10.1016/j.jemermed.2015.12.024	To determine whether an observational unit reduces ED length of stay and hospital admission rates for adults with a variety of presenting complaints.	Two hospital emergency departments in British Columbia, Canada. The <u>study population</u> included consecutive adult patients (≥ 17 years) presenting to the sites. We compared three groups of patients: The pre-OU cohort, the post-OU cohort, and the latter subcategorized into those who were managed in the OUs (post-OU) and those who were not (post-non-OU).	Using a pre-post design. Data were extracted from administrative databases. The post-OU cohort included all adults presenting 6 months after OU implementation. The pre-OU cohort included all adults presenting in the same 6-month period 1 year before OU implementation.	Implementation significantly decreased the hospital admission rate for ED A (17.8% pre to 17.0% post [-0.8%], 95% CI -0.18% to 0.15%; $p < 0.05$) and did not significantly change the hospital admission rate at ED B (18.9% pre to 18.3% post [-0.6%], 95% CI -1.19% to -0.09%; $p = 0.09$).	Level 1	The major limitations of this study arise from using standard hospital administrative data. The data were drawn from each ED's electronic information system. Time data are entered by a clerical rather than electronic time stamp. Data entry error can impact the recorded ED LOS and other time variables.	Useful information, but again focuses on alternatives for admission rather than patient handoff.
Gonnah, R., Hegazi, M. O., Hmdy, I., & Shenoda, M. (2008). Can a change in policy reduce emergency hospital admissions? Effect of admission avoidance team, guideline implementation and maximizing the observation unit. <i>Emergency Medicine Journal</i> , 25(9). http://dx.doi.org/10.1136/emj.2007.053090	Reduction in admissions is an important aim of emergency department working policy to overcome the problems of a shortage of inpatient beds, overcrowding, rising costs and exhausted resources.	A new policy was instituted in the emergency department of a hospital in Kuwait with the following components: (1) an admission avoidance team of emergency department doctors; (2) implementation of disease management guidelines; and (3) maximizing the use of an emergency	The effects of this policy on reduction in admission rates for total medical admissions and for chest pain, bronchial asthma, heart failure, pneumonia and pyelonephritis as selected samples of common medical conditions were prospectively studied over a period of 3	There was a significant reduction in admission rates after institution of the new policy, with a relative reduction of 35.9% for total medical admissions, 52.7% for chest pain, 49.2% for bronchial asthma, 34.7% for heart failure, 59.1% for pneumonia and 43.3% for	Level 4 cohort study	Small study size.	This article is not helpful with the proposed project, it deals mostly with reducing the rate of admissions and not how to improve the admission transfer process.

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnik Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
		department observation unit.	years from institution of the policy and compared with the 3-year period before the policy was instituted.	pyelonephritis compared with the period before the policy was instituted.			
Kirkbride, G., Floyd, V., Tate, C., & Wendler, C. (2012). Weathering the storm: Nurses' satisfaction with a mobile admission nurse service. <i>Journal of Nursing Management</i> , 20, 344-353. http://dx.doi.org/10.1111/j.1365-2834.2011.01273.x	To evaluate nurse satisfaction with, and perceptions of, a practice innovation introducing a Mobile Admission Nurse service.	Staff nurses who identified that the admission process, while crucial to initiating safe and appropriate acute care, can be disruptive and interfere with care in progress. Convenience sampling was used to obtain the sample from the 10 inpatient nursing units and the ED, which comprised the pilot units.	A self-developed web-based survey was administered to a convenience sample of 104 RNs who had used the services during the pilot project.	Having an admission nurse complete the admission process steadied workflow processes for nurses. Improved patient safety and increased staff and family satisfaction were also reported	Level 6 descriptive study	Several limitations were identified in this descriptive study. It is possible the nurses who participated in this study may have been different in some way from those who chose not to participate. There were only responses from 26% of eligible nurses, which is less than recommended. The tool used to gather data was self-developed and had not been rigorously tested.	Important information listed to help understand nurse perceptions.
Lane-Fall, M., Pascual, J., Massa, S., Collard, M., Peifer, H., Di Taranti, L., ... Barg, F. (2018). Developing a standard handoff process for operating room-to-ICU transitions: Multidisciplinary clinician perspectives from the handoffs and transitions in critical care (HATRICC) study. <i>The Joint Commission Journal on Quality and Patient Safety</i> . 44, 514-525. http://dx.doi.org/10.1016/j.jcjq.2018.02.004	The objective of the Handoffs and Transitions in Critical Care (HATRICC) study is to develop, implement, and evaluate the effectiveness of a standardized OR-to-ICU handoff process.	All clinicians who routinely participate in the OR-to-ICU handoff process were eligible for participating. These clinicians included physicians (attending physicians, residents, fellows from anesthesiology or any surgical discipline admitting to the study units), advanced practice providers (CRNAs, NPs, PAs), and ICU registered nurses.	As part of the Handoffs and Transitions in Critical Care (HATRICC) study, a postoperative handoff procedure was developed by conducting interviews and focus groups with staff routinely involved in OR-to-ICU patient transitions in two mixed surgical ICUs, which included nurses, house staff, and advanced practice providers. Transcripts were analyzed	OR and ICU teams agreed on handoffs' vital importance in patient care but identified important barriers to consistently practicing ideal handoffs. Barriers included time pressure to return to the OR (for anesthesia and surgery personnel), lack of familiarity and comfort with the perioperative electronic medical record system (ICU	Level 4 cohort study	Work was conducted within one health system with large training programs in anesthesiology and surgery and high elective and emergent surgical volume. In this setting, it is common for handoff teams to have trainees who are still learning their specialty and learning how to participate in multidisciplinary teams. It is likely that different perspectives would have been elicited in smaller training programs or in nonteaching	This article is useful as it also considers the views of clinicians.

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
			according to grounded theory. Surveys, attending physician interviews, and field notes further informed process development.	nurses), and competing priorities, which included caring for other patients and attending to personal needs.		programs with less turnover in staff.	
Padgett, T. M. (2018). Improving nurses' communication during patient transfer: A pilot study. <i>The Journal of Continuing Education in Nursing</i> , 49(8), 378-384. http://dx.doi.org/10.3928/00220124-20180718-09	Handoffs and mistakes during handoffs can significantly affect the quality of care and safety of a patient. The standardization of this process can be a safeguard to lower the risk of adverse patient events related to the handoff procedure.	The staff at the practice hospital played an integral part of this project. All nurses from three inpatient units of the practice hospital were invited to participate in the pre- and postintervention survey. The units included the intensive care unit (ICU) with 50 nurses, the intermediate intensive care unit (I-ICU) with 30 nurses, and the medical-surgical unit with 200 nurses.	A quasi-experimental pretest-posttest design with a comparison group was used for this practice change study.	The use of SBAR (Situation, Background, Assessment, Recommendation) positively affected the nurses' perceptions of communication during patient transfers.	Level 3 quasi-experimental design.	Although more than 25% of each unit did return their surveys, it was an overall small sample size. The sample was a convenience sample and it is unknown whether all shifts were represented equally and were subject to volunteer bias.	This gives specific information regarding SBAR technic and nurses perceptions. This is helpful for evaluative best way to complete handoff.
Santa, D., & Roach, D. E. (2017, September). Using mobile technology during patient handoffs. <i>American Nurse Today</i> , 12(9), 84-87. Retrieved from www.AmericanNurseToday.com	To see if a 3-month rapid cycle system prototype using web-enabled technology to improve patient and nurse satisfaction during cross-unit transfer of care from one nurse to another.	Both receiving and transferring nursing staff and admitted patients of a magnet hospital in Texas.	Pre-and post-surveys after use of the mobile technology to assist in patient handoff.	Fifty percent of the patients (n=10) who responded to the survey reported that the virtual interaction reduced their anxiety about the transfer to a new care environment, 70% indicate that the virtual interaction with the nurse felt like face-to-face contact.	Level 6 single descriptive study.	Only small sample size included and for a short study period.	Limited information regarding study. The information listed is useful but will need to gather additional information.
Smith, C., Buzzalko, R., Anderson, N., Michalski, J., Warchol, J., Ducey, S., & Branecki, C. (2018). Evaluation of a novel handoff communication strategy for patients admitted from the emergency department. <i>Western Journal of Emergency Medicine</i> , 19(2), 372-379. http://dx.doi.org/10.5811/westjem.2017.9.35121	To evaluate the impact of a structured communication strategy on the quality of admission handoffs	Emergency and internal medicine physicians at a 560-bed academic health center with 60,000 emergency department (ED) patient visits per year	a mixed-methods, pre-test/post-test study at a 560-bed academic health center with 60,000 emergency department (ED) patient visits per	The composite quality score improved in the post-intervention phase (7.57 + 2.42 vs. 8.45 + 2.51,	Level 4 cohort study.	Implementation was conducted at a single institution, so results may not be generalizable to other settings. The pre/post study design cannot exclude the	Article is helpful to see the physician's point of view.

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
			year. Admission-handoff best practices were integrated into a modified SBAR format, resulting in the Situation, Background, Assessment, Responsibilities & Risk, Discussion & Disposition, Read-back & Record (SBAR-DR) model. Physician handoff conversations were recorded and transcribed for the 60 days before (n=110) and 60 days after (n=110) introduction of the SBAR-DR strategy. Transcriptions were scored by two blinded physicians using a 16-item scoring instrument	p=.0085). Three of the 16 individual scoring elements also improved, including time for questions (70.6% vs. 82.7%, p=.0344) and confirmation of disposition plan (41.8% vs. 62.7%, p=.0019). The majority of emergency and internal medicine physicians felt that the SBAR-DR model had a positive impact on patient safety and handoff efficiency.		possibility that factors other than the intervention may have influenced the results.	
Starmer, A., Spector, N., West, D., Srivastava, R., Sectish, T., & Landrigan, C. (2017). Integrating research, quality improvement, and medical education for better handoffs and safer care: Disseminating, adapting, and implementing the I-Pass program. <i>The Joint Commission Journal on Quality and Patient Safety</i> , 43, 319-329. http://dx.doi.org/10.1016/j.jcjq.2017.04.001	To effectively disseminate and adapt I-PASS for use across specialties and disciplines	I-PASS Study Group members have directly worked with more than 50 hospitals to facilitate implementation of I-PASS.	A series of federally and privately funded dissemination and implementation projects were carried out following the publication of the initial study. To further disseminate I-PASS, Study Group members delivered hundreds of academic presentations, including plenaries at scientific meetings, workshops, and institutional Grand Rounds.	Implementation of I-PASS has been associated with substantial improvements in patient safety and can be applied to a variety of disciplines and types of patient handoffs. Widespread implementation of I-PASS has the potential to substantially improve patient	Level 1 systematic review	The groups worked in real-time by observing patient handoffs. This could potentially change the normal habits of the staff being watched because they are aware of the observations.	This article gives examples of how to develop well rounded groups to develop the handoff procedures. It also has a lot of informative information regarding the I-Pass procedure.

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnik Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
				safety in the United States and beyond.			
Retha, R., Azmi, A., Jou, L. C., & Kumar, M. (2018, March). The perspective of healthcare providers and patients on health literacy: A systematic review of the quantitative and qualitative studies. <i>Perspectives in Public Health</i> , 138(2), 122-132. http://dx.doi.org/10.1177/1757913917733775	This systematic review examines and synthesizes the available studies on HL-related knowledge, attitude, practice, and perceived barriers.	A total of 30 studies were included, which consist of 19 quantitative, 9 qualitative, and 2 mixed-method studies.	CINAHL and Medline (via EBSCOhost), Google Scholar, PubMed, ProQuest, Sage Journals, and Science Direct were searched. Both quantitative and/or qualitative studies in the English language were included. Intervention studies and studies focusing on HL assessment tools and prevalence of low HL were excluded.	Three studies showed a positive attitude of healthcare providers towards learning about HL. Another three studies demonstrated patients feel shame exposing their literacy and undergoing HL assessment.	Level 1 systematic review.	only included articles published in the English language, so some relevant studies in other languages may have been missed. Furthermore, the study specifically focused on functional H, which may affect the generalizability of the study findings	Helpful article in relation to determine teaching methods that have been successful.
Pulliam, B., Liao, M., Geissler, T., & Richards, J. (2013, March). Comparison between emergency department and inpatient nurses' perceptions of boarding of admitted patients. <i>Western Journal of Emergency Medicine</i> , 14(2), 90-95. http://dx.doi.org/10.5811/westjem.2012.12.12830	The boarding of admitted patients in the emergency department (ED) is a major cause of crowding and access block. One solution is boarding admitted patients in inpatient ward (W) hallways.	Ninety nurses completed the survey, with a response rate of 60%; 35 (39%) were current ED nurses (cED), 40 (44%) had previously worked in the ED (pED).	A survey administered to a convenience sample of ED and W nurses was performed in a 631-bed academic medical center (30,000 admissions/year) with a 68-bed ED (70,000 visits/ year).	For all nurses surveyed 46 (52%) believed admitted patients should board in the ED. Overall, 52 (58%) were opposed to W boarding, with 20% of cED versus 83% of current W (cW) nurses ($P < 0.0001$), and 28% of pED versus 85% of nurses never having worked in the ED (nED) were opposed ($P < 0.001$)	Level 6 systematic review	There was a small sample size, and it was performed at a single academic center limiting its generalizability.	Gives a different perspective of patient boarding.
Al-Qahtani, S., Alsultan, A., Haddad, S., Alsaawi, A., Alshehri, M., Alsolamy, S., ... Arabi, Y. (2017). The association of duration of boarding in the emergency room and the outcome of patients admitted to the intensive care unit. <i>BMC Emergency Medicine</i> , 17(34).	To examine the impact of boarding in the ED on the outcome of patients admitted to the Intensive Care Unit(ICU)	This was a retrospective analysis of ICU data collected prospectively at King Abdulaziz Medical City, Riyadh from ED between January	This study included all the consecutive patients who were admitted to ICUs from the ED between January 2010 and December 2012.	During the study period, 940 patients were admitted from the ED to ICU, amongst whom 227 (25%) were admitted to ICU within 6 h,	Level 4 Retrospective cohort study.	Only analyzed data from a single center	This article discusses importance of not holding admissions in the ED and is helpful with facts to justify procedures to improve this from occurring.

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnik Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
http://dx.doi.org/10.1186/s12873-017-0143-4		2010 and December 2012 a		358 (39%) within 6–24 h and 355 (38%) after 24 h. There was a significant increase in hospital mortality			
Lord, K., Parwani, V., Ulrich, A., Finn, E., Rothenberg, C., Emerson, B., ... Venkatesh, A. (2018, July). Emergency department boarding and adverse hospitalization outcomes among patients admitted to a general medical service. <i>The Journal of Emergency Medicine</i> , 36(7), 1246-1248. http://dx.doi.org/10.1016/j.ajem.2018.03.043	to examine the association between ED boarding and three common adverse hospitalization outcomes: <u>rapid response team</u> activation (RRT), escalation in care, and mortality.	This study was conducted in an urban, academic hospital with an annual adult ED census over 90,000.	A total of 31,426 patient encounters were included of which 3978 (12.7%) boarded in the ED for 4 h or more.	Adverse outcomes occurred in 1.92% of all encounters. Comparing boarded vs. non-boarded patients, 41 (1.03%) vs. 244 (0.90%) patients experienced a RRT activation, 53 (1.33%) vs. 387 (1.42%) experienced a care escalation, and 1 (0.03%) vs. 12 (0.04%) experienced unanticipated in-hospital death, within 24 h of ED admission.	Level 4 observational analysis	Study was conducted in a single academic medical center at which rates of ED crowding and boarding may be different than other institutions and with distinct quality and safety resources that may limit the generalizability of findings	Study helps justify importance of transferring patients to the inpatient unit.
Hung, S., Kung, C., Hung, C., Liu, B., Chew, G., Chuang, H., ... Lee, T. (2014). Determining delayed admission to the intensive care unit for mechanically ventilated patients in the emergency department. <i>Critical Care</i> , 18(485). http://dx.doi.org/10.1186/s13054-014-0485-1	This study proposed a model to define "delayed admission" and explored the effect of ICU waiting time on patients' outcome.	This retrospective cohort study included nontraumatic adult patients on mechanical ventilation in the emergency department (ED), from July 2009 to June 2010.	The study population was focused on the non-trauma adult patients who were on ventilator support at the ED. Patients of pediatric age, organ transplantation donors, or those with trauma-related etiologies, chronic ventilator dependence, out-of-hospital cardiac arrest (OHCA), or unexpected in-hospital cardiac arrest (IHCA), who failed to	The time effect on mortality emerged after 4 hours, thus we deduced ICU waiting time in the ED of >4 hours as delayed. By logistic regression analysis, delayed ICU admission affected the outcomes of 21-ventilator-day mortality and prolonged hospital stay, with an odds ratio of 1.41 (95% confidence interval, 1.05 to 1.89) and	Level 4 retrospective cohort study.	The present research is restricted by its retrospective study design.	Helps to justify the need for admission process change.

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
			have sustained return of spontaneous circulation (ROSC) over 2 hours after resuscitation (format as Health Administrator requiring) were all excluded	1.56 (95% confidence interval, 1.07 to 2.27) respectively.			

Appendix B



February 28, 2019

To whom it may concern:

Lynda Heintz has my approval to conduct an evidence-based practice project titled **Improving Patient Satisfaction with virtual handoffs through the utilization of educational pamphlet** which will be performed at Atrium Healthcare University Emergency Room. Whatever support she needs will be provided for the project through collaborative practice and data availability.

Please contact me for any questions or concerns.

Sincerely,

Ginger Maness, MSN, NE-BC
Director of Emergency Services
Atrium Health University City Emergency Department
Atrium Health Huntersville Emergency Department
8800 N. Tryon St.
Charlotte, NC 28262
Phone: 704-863-5883
Ginger.maness@atriumhealth.org

Appendix C

Kimberly Jordan - University of Iowa Hospitals and Clinics <noreply@qualtrics-survey.com>

Reply all

Wed 2/27, 7:55 PM

Heintz, Lynda M

Inbox

Action Items

You have permission, as requested today, to review and/or reproduce *The Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Health Care*. Click the link below to open.

[The Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Health Care](#)

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Citation: Iowa Model Collaborative. (2017). Iowa model of evidence-based practice: Revisions and validation. *Worldviews on Evidence-Based Nursing*, 14(3), 175-182.
doi:10.1111/wvn.12223

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Please contact UIHCNursingResearchandEBP@uiowa.edu or 319-384-9098 with questions.

Appendix D



Completion Date 21-Jan-2019
Expiration Date 20-Jan-2022
Record ID 30183480

This is to certify that:

Lynda Heintz

Has completed the following CITI Program course:

Biomedical Research - Basic/Refresher (Curriculum Group)
Biomedical & Health Science Researchers (Course Learner Group)
1 - Basic Course (Stage)

Under requirements set by:

Liberty University

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?wbdd3dfa9-ea40-499e-9b30-dc4d3cfe7180-30183480

Appendix E

ED Admission to ED Depart Report										
A	B	C	D	E	F	G	H	I	J	K
		February	March	January	February	March	April	May	Overall	
	ED Anson			49.54	83.42	47.96	54.48	39.74	57.03	
	ED Cleveland			80.62	84.65	74.09	81.42	79.69	79.84	
	ED CMC			113.28	97.20	97.01	99.15	98.26	100.68	
	ED Kings Mountain			68.28	67.95	61.42	57.80	61.38	64.43	
	ED Lincoln			48.30	59.73	52.67	49.10	44.33	51.00	
	ED Mercy			102.11	94.18	81.68	83.33	72.58	87.75	
	ED NorthEast	142.22		97.95	94.42	99.83	80.53	86.43	92.87	
	ED Pineville			102.12	99.42	90.88	95.15	78.83	94.63	
	ED Stanly			102.18	106.52	72.48	61.98	64.92	81.45	
	ED Union			86.88	109.54	86.50	83.02	71.77	88.58	
	ED University		596.33	90.83	132.08	77.17	73.62	80.25	87.40	
	LCH			62.15	67.00	71.33	68.13	62.33	66.38	

Appendix F

Educational Pamphlet

Virtual Handoff

What to expect

We are using a computer on wheels

- To do a virtual handoff or “facetime” with your nurse upstairs
- To introduce you
- To discuss your health and what the nurse is to do for you
- Any questions?



Appendix G

Pre-survey

We are collecting this information to better understand how using “facetime” helps patients. Doing this survey is voluntary, you may refuse.

Please circle your answer

1. Did we answer all your questions?

Completely Almost Not Really No

2. Did you feel ready to do “facetime” when it happened?

Completely Almost Not Really No

3. Did you understand what was happening when the nurses discussed your health?

Completely Almost Not Really No

Appendix H

Post-survey

We are collecting this information to better understand how using “facetime” helps patients. Doing this survey is voluntary, you may refuse.

Please circle your answer

1. Did we answer all your questions?

Completely Almost Not Really No

2. Did the flyer help you to be ready to do “facetime”?

Completely Almost Not Really No

3. Did the flyer explain what would be talked about during the “facetime”?

Completely Almost Not Really No