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Abstract

A Nurse's Perception of Hand-Off Communication Before and After Utilization of the

I-5 Verification of Information Tool

by

Maryann Bowersox

MSN, Grand Canyon University, 2011

BSN, Bloomsburg University, 1982

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

Walden University

February 2016

Abstract

Miscommunication or omission of critical patient information contributes to preventable medical errors that result in 98,000 patient deaths each year. The hand-off communication process creates a critical time for the patient as necessary information for the continuity of care must be communicated. The purpose of this practice project was to evaluate the nurses' perception of the current hand-off communication process before and after an educational intervention and implementation of the I-5 Verification of Information Tool. Registered nurses were asked to complete a pre survey of their perception of the current hand-off communication process, followed by an educational power point describing the I-5 Verification of Information Tool. Participants utilized the I-5 Verification of Information Tool during hand-off over a 3-week period, and then were asked to complete a post survey to evaluate the nurses' perception of the hand-off process including of the I-5 Verification of Information Tool. A paired *t* test was used to determine if there was a difference in the nurses' perception of the current hand-off communication process before and after an educational intervention and implementation of the I-5 Verification of Information Tool. Although there was no statistically significant difference in the pre- and post-survey scores, post survey results demonstrated clinical significance. This project has implications for positive social change by addressing nurse communication as a method to improve the quality of hand-off reports, which has the potential to reduce medical errors and improve patient outcomes.

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Dedication

I dedicated this project to my husband and my many four-legged babies. It is because of their support and encouragement that I was able to focus and complete all the necessary elements in pursuing my DNP. It has been an incredible journey and I could not have done it without them. My husband was a constant source of support. My four-legged babies were my continuous stress reliever ensuring that I took breaks along the way to walk them. Thank you to all of you.

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Section 1: Nature of the Project

Introduction

Most commonly, communication involves the clear, effective exchange of information from one person to another (Berger, Sten, & Stockwell, 2012; Street et al., 2011; The Joint Commission [TJC], 2012). While the art of communication is important in general, it becomes paramount in the health care arena to ensure continuity of care. For example, practitioners consider the exchange of information from one provider to another provider critical to patient outcomes. This communication occurs with the transfer of information from one health care provider to another as he or she shares key details about the patient (Criscitelli, 2013). The hand-off communication process creates a critical time for the patient as necessary information for the continuity of care must be communicated. The Institute of Medicine (IOM; as cited in Cohen, 2013) reported that miscommunication or omission of critical patient information contributes to preventable medical errors that result in 98,000 patient deaths each year.

Moreover, ineffective communication at patient hand-off is recognized as a major factor contributing to patient harm (TJC, 2012). Incomplete or inaccurate communication at hand-off report has been identified as a significant cause of patient mortality (Friesen, White, & Byers, 2008). Patient deaths are due to unsuccessful communication methods, limited time to share information, and the inability to confirm that the receiver understood the information exchanged (TJC, 2012). In a recent study, Berger et al. (2012) postulated that in addition to emphasizing what information is communicated at handoff, responsibility for the information should also be stressed.

According to TJC (2012), hand-off communication is an essential piece to patient safety. Hand-off communication is operationally defined as a process aligned with communicating patient-specific information from one caregiver to another for the purpose of ensuring continuity of care (Berger et al., 2012; Sears et al., 2014; Street et al., 2011; TJC, 2012). Interestingly, current researchers have concentrated on the effects of ineffective hand-offs such as adverse events and patient safety risks (Agency for Healthcare Research and Quality [AHRQ], 2008). Because health care has become more specialized by increasing the number of clinicians involved in each patient's care, more and more handoffs are encountered on a daily basis (AHRQ, 2008). For example, nurses share information about the patient and/or family between other nurses, physicians involved in the care, the interdisciplinary team, and other departments. The frequency of the transmission of data emphasizes the need to improve the hand-off process (Kitch et al., 2008).

One of the most common communication handoffs is the transfer of patients between nursing units due to level of care needs. It is estimated that nursing units turn over 40% to 70% of their patients on a daily basis (Salmon, 2014). This increased number of hand-off reports creates opportunities for potential problems based on message errors or information omissions during the hand-off communication process (Friesen, White, & Byers, 2008; Kitch et al., 2008).

There are many reasons for ineffective handoffs of patients between providers. Interpersonal communication skill and the experience level of the caregiver are the two researchers have most acknowledged, as these characteristics can lead to poor quality

exchange of information (IOM, 2007; TJC, 2012). Because the hand-off communication process has become so important, TJC (2012) created a national patient safety goal around this process. The stated goal was that the hand-off communication process must meet the following expectations: (a) communication between the giver and the receiver must create an opportunity for questioning; (b) up-to-date information including care, treatment, condition, and changes must be shared; (c) information exchanged must be verified; (d) an opportunity for the receiving health care team member to review any relevant information; and (e) interruptions must be avoided (TJC, 2012). Essential details regarding the patient must be communicated to ensure that the receiving nurse can confidently assume care of the patient.

The nurses' perception is a vital piece in assessing the clarity of the hand-off communication process as nurses must feel comfortable knowing that the information exchanged will ensure continuity of care for the patient. In addition, nurses' perception of the hand-off communication process improved for nurse-to-nurse accountability when a solid hand-off communication process was established to keep the patient well informed of the plan of care (Maxson, Derby, Wrobleski, & Foss, 2012). Nurses appreciate the need to take responsibility for information being exchanged and the ability to speak to the physicians with confidence regarding the patient.

In order to achieve a successful hand-off communication, most organizations use a standard format. Situation, background, assessment, and recommendation (SBAR) is an example of a standard approach to effectively communicate between providers (NHS, 2013). The SBAR Tool, created by Michael Leonard, a physician coordinator of clinical

informatics, provides a framework for the exchange of information between health care team members. SBAR is intended to promote critical thinking because the person sharing the information must assess the situation and provide appropriate solutions (AHRQ, 2008). Despite best efforts, the current hand-off communication process utilizing the SBAR format allows for verbal communication; however, it does not emphasize the receiving nurses' responsibilities in communicating, receiving, clarifying, and understanding the information.

While SBAR has been commonly used to guide hand-off communication, Berger et al. (2012) communicated that standardized formats overstate the quality of the transmitted information; therefore, nurses were trained to integrate the I-5 Verification of Information Tool into hand-off report. Early results suggested that this model contributed to a more reliable handoff by elevating the process to an active conversation about the patient's condition rather that a list of facts (Berger et al., 2012). The I-5 Verification of Information Tool consists of the following five statements that were addressed during the hand-off process: *I know what is wrong*; *I know what to do*; *I know what to worry about*; *I know when to escalate*; and *I see what you see*. These statements prompt additional clarification of the exchanged information.

By implementing the I-5 Verification of Information Tool into the hand-off process, the researchers noted improvement in the quality of information exchanged (Berger et al., 2012). Because both health care team members were responsible to manage the exchange of information, Berger et al. (2012) noted improvement in information organization, anticipatory guidance, task completion, and read back

verification of information. It also helped to ensure that the giver and the receiver verified understanding of the information transferred between the caregivers (Berger et al., 2012). The intent of the I-5 Verification of Information Tool was to place information in a structured format. In creating this planned design, the hope was that the receiving health care provider will understand all information shared in order to provide continuity of care (Berger et al., 2012).

According to TJC (2012), a standardized communication tool or checklist is needed to ensure that important information is shared at hand-off. The use of the SBAR tool shares the information during hand-off while the I-5 Verification of Information Tool verifies the information being exchanged. The opportunity for open dialogue enables the receiving nurse to voice understanding and clarify the patient's plan of care and other pertinent information. Discussion surrounding the I-5 Verification of Information Tool statements helps to assure the sending nurse that the receiving nurse recognizes the next important steps in the care of the patient.

Problem Statement

Researchers have identified the need for improved communication during the hand-off communication process. Lack of appropriate communication between caregivers has been identified as a leading cause of unintentional patient harm (TJC, 2012). The SBAR tool has been proven to be an effective communication tool in acute care settings used to relay pertinent information necessary to continue the care of the patient (Velji et al., 2008). The addition of the I-5 Verification of Information Tool has been shown to provide an opportunity to clarify information being exchanged during the hand-off

process (Berger et al., 2012). Thus, the hand-off communication process creates an opportunity for improvement due to the use of a limited communication method.

Purpose and Objectives of the Project

The purpose of this practice project was to evaluate the nurses' perception of the current hand-off communication process before and after an educational intervention and implementation of the I-5 Verification of Information Tool (Berger et al., 2012). The objectives of this project were as follows:

- Evaluate the nurses' perception of the current hand-off communication process

- Educate the nurses on the I-5 Verification of Information Tool

- Evaluate the nurses' perception of the hand-off communication process after the educational intervention and implementation of the I-5 Verification of Information Tool

Project Question

The project involved supplementing the current hand-off communication process with the I-5 Verification of Information Tool. The project determined the nurses' perception of the current hand-off communication process before and after an educational intervention and implementation of the I-5 Verification of Information Tool. The project question was the following: Is there a difference in nursing perception of the hand-off communication process before and after an educational intervention and implementation of the I-5 Verification Tool?

Evidence-Based Significance of the Practice

Strategy identification to support the consistency and continuity of care, improve patient quality and safety, and enhance patient care have been ongoing priorities in the health care sector (Street et al., 2011). A clear and effective hand-off communication process not only ensures reliability of patient information, but also aids in providing the nurse with the confidence he or she needs to continue caring for the patient. When a health care member understands all aspects of the patient's care, this knowledge will allow the nurse to care for the patient in a competent manner (Hall, 2005).

Human communication and interaction is an essential piece to the hand-off communication process (Cornell, Gervis, Yates, & Vardaman, 2013). Poor communication can lead to errors, omission of care, inconsistent care, and even death. Based on the statistics from TJC (as cited in Cornell et al., 2013), approximately 65% of the sentinel events were due to communication issues. Therefore, strengthening the process when information is exchanged must be a health care priority.

Ineffective exchange of information during hand-off communication is a threat to patient safety (TJC, 2012). In 2006, TJC set a National Patient Safety Goal mandating health care organizations to standardize hand-off report (Goldsmith et al., 2010). The need for a structured hand-off process has been well documented in the current literature (Berger et al., 2012; Cornell et al., 2013; Street et al., 2011; TJC, 2012). There is a gap of research evidence to support the use of any one hand-off communication tool over another. Communication tools have largely focused on what information should be included in the hand-off communication process (Arora & Johnson, 2006; Thomas &

Donohue-Porter, 2012). Very few studies have looked beyond what information should be exchanged to include the quality of the transfer of information itself.

Implication for Social Change in Practice

Standardization of hand-off communication can impact many processes and patient outcomes (Halm, 2013). A concentrated effort during the hand-off communication process can enhance clinician performance because of the exchange of accurate and pertinent information. Utilization of the I-5 Verification of Information Tool questions between nurses should eliminate the need for reverification of the information. In addition, reduction of errors and complications should occur due to the fact that the nurses will have an opportunity to verify understanding of the information communicated (Halm, 2013).

Using a standardized tool during the hand-off communication process allows the health care members to provide a structured, consistent, and comprehensive approach for the exchange of information (Cornell et al., 2013). The SBAR ensures that the essential pieces of information are relayed to the next provider of care while the I-5 Verification of Information Tool allows clarification of the content received. The combination of the SBAR and I-5 Verification of Information Tool has the potential to improve the hand-off process while enhancing relationships between caregivers. Smooth patient transfers between units contribute to improvements in safety and quality through reducing the possibility of error, while helping to develop working relationships among staff (Clark et al., 2012).

Definitions of Terms

The following terms were defined for the purpose of this practice project:

Hand-off communication or *hand-off report*: The process in which one caregiver communicates the necessary information to the next caregiver for the continuation of care of a patient. There are many terms that can define the hand-off process, but for this project it was the transfer of information during transfers in care from one department to another with the opportunity to ask questions, clarify information, and confirm what is being communicated (Friesen et al., 2008).

Situation, background, assessment, and recommendation (SBAR): There are three main objectives to reach during the situation (S) phase: identify who you are and the unit you are calling from, identify the patient and the reason for the call, and describe your concern (National Health Service Institute for Innovation and Improvement [NHS], 2013). During the background (B) phase, the provider relays information regarding the patient's history and reason for seeking care. This phase speaks to the admitting diagnosis, completed or ordered tests and procedures, allergies, and any other pertinent information that is related to the reason for the call (NHS, 2013). The assessment (A) phase includes the vital signs of the patient, lab results, and clinical impression of the concern. The recommendation (R) phase brings all the information together as the health care member suggests what is needed for the continuity of care of the patient. The physician may agree or disagree with the recommendations and communicate additional orders as needed.

I-5 Verification of Information Tool: A tool used in addition to the SBAR reporting system. The I-5 Verification of Information Tool creates the opportunity to clarify the exchanged information by using five essential statements at the end of the hand-off communication process: I know what is wrong; I know what to do; I know what to worry about; I know when to escalate; and I see what you see (Berger et al., 2012).

Educational intervention: The process by which the participants of the project will be introduced to the I-5 Verification of Information Tool. Education was provided via a PowerPoint presentation utilizing the electronic learning management system (ELMS). The receiving nurse will initiate the tool during the hand-off communication process. Once the receiving nurse obtains the information about the patient, and he or she will use the I-5 Verification of Information Tool to clarify the information received.

Assumptions and Limitations

As project director, I assumed that the nurses were currently using the SBAR format during hand-off report per unit and facility policy. The participants were surveyed regarding their perceptions of the hand-off process before and after the educational intervention and the implementation of the I-5 Verification of Information Tool. It was assumed that the participants would be honest and forthright in their responses. The distributions of the populations from which survey data were obtained were assumed to be normally distributed.

A limitation of the project included the possibility that all participants would not be involved in a hand-off communication process utilizing the SBAR along with the I-5 Verification of Information Tool. An additional limitation was the fact that the results

were based on the participants' perceptions. The project measured perception of the

hand-off communication process, but it did not measure the quality of the report directly.

Summary

A structured process is essential for a safe, effective hand-off communication. It is

vital that the information exchanged is concise, clear, and adequate to ensure the

continuity of care. TJC (2012) has stated that hand-off communication is an identified

time crucial for the continued care of the patient. Because hand-off report has been

identified as ineffective due to unsuccessful communication methods, limitedness of time

to share information, and the inability to know if the information exchanged was

understood by the receiver, supplementing the SBAR format with the I-5 Verification of

Information Tool demonstrated clinical significance for the hand-off process for health

care providers.

Section 2: Review of Literature and Theoretical and Conceptual Framework

Literature Search Strategy

A literature search was conducted using the following databases: OVID, Cochrane, and CINHAL Plus. Terms and phrases utilized for the search were *hand off, hand off communication, safety, patient safety,* and *hand off report.* A total of 64 articles were reviewed. Articles published outside of the 10-year target period, 2004 to 2014, were excluded. Inclusion criteria consisted of articles that addressed the hand-off communication process. A total of 17 articles were selected for inclusion in this literature review.

There are six levels of evidence. According to Critical Care Nurse (2015), the American Association of Critical Care Nurses' Grading of Evidence System is as follows:

Level A: Meta-analysis of multiple controlled studies or meta-synthesis of qualitative studies with results that consistently support a specific action, intervention, or treatment; Level B: Well-designed controlled studies, both randomized and non-randomized, with results that consistently support a specific action, intervention, or treatment; Level C: Qualitative studies, descriptive or correlational studies, integrated reviews, systematic reviews, or randomized controlled trials with inconsistent results; Level D: Peer-reviewed professional organizational standards, with clinical studies to support recommendations; Level E: Theory-based evidence from expert opinion or multiple case reports; and Level M: Manufacturers' recommendations only (p. 71).

Of the 17 articles chosen, one was Level B and 16 were Level C evidence. The evidence

contributed to the following three categories for hand-off communication:

- need for a standardized tool;

- staff satisfaction with the use of a standardized tool for hand-off

  communication; and

- need for strategies to improve hand-off communication.

Need for a Standardized Tool for Hand-Off Communication

The need for standardized processes in hand-off communication has been well

documented (Arora & Johnson, 2006; Sears et al., 2014; TJC, 2012; Thomas & Donohue-

Porter, 2012). In the absence of a standardized tool, researchers have noted tremendous

variability in hand-off report (TJC, 2012). They suggested that when a standardized tool

is utilized, this process leads to improved continuity of care. TJC (2012) required that all

health care organizations move toward the use of a standardized tool with the ability to

ask and answer questions during the hand-off process. Although a standard hand-off

communication process may not be the only answer to eliminate or reduce patient care

errors or delays, the TJC indicated that standardized processes are essential (Cohen &

Hilligoss, 2009; TJC, 2012).

TJC (2012) conducted a study involving 10 health care organizations to determine

areas of concern around hand-off communication. Five main areas were noted: the

culture of the organization, ineffective methods for handoff, inadequate time, inaccurate

or incomplete information, and the receiver of the information had too many competing

priorities (TJC, 2012). Based on these findings, there is a great need to improve the hand-off communication process.

A standard tool to communicate patient information concentrates on the need to center on the patient and prioritize the information exchanged (Cornell et al., 2013). Goals for a standardized hand-off communication process may include the reduction or elimination of error related to ineffective or poor communication while designing a user-friendly process that all end users can adopt (Street et al., 2011; Thomas & Donohue-Porter, 2012). Nurses desire a structured way to deliver report with the assurance that necessary information is being conveyed in a timely, effective manner (Downs, Standish, & Allred, 2012; Gage, 2013; Kerr, Lu, McKinlay, & Fuller, 2011). Sharing information related to medications, infusions, observations, discharge plans, and infection prevention enables all end users to communicate essential elements to maintain continuity of care. When other vehicles are utilized, the health care member may become distracted and critical information may be lost in the translation. A structured-based hand-off communication process not only adds to the delivery of information about the patient, but keeps the health care provider focused on the content being exchanged (Blouin, 2012; Gage, 2013, Kerr et al., 2011).

Objectives of a standard hand-off communication process are to eliminate the risk of error due to unclear communication, implement an evidence-based hand-off report process, involve the patient and family during the exchange of information, and meet the compliance requirements (Thomas & Donohue-Porter, 2012). Information communicated from one caregiver to the next included an introduction of the nurse to the patient and

family, the patient name, age, gender, and location, assessment, situation, safety concerns, background or history, goals for the patient, the level of urgency for each goal, the responsible party to ensure the goals were completed, and answers to any questions regarding next steps or clarification of the information. Nurses communicated that essential information must be exchanged to ensure patient safety and quality of care. In addition, the development of a hand-off tool has been shown to enhance communication between nurses and patients (Downs et al., 2012; Sears et al., 2014).

Research introduced many components for consideration in regards to standardized hand-off communication. The main approach for effective hand-off report was to create a standardized process. The consistency of the guidelines and the tools used created an environment of improved patient outcomes (Halm, 2013). In a systematic review conducted of 20 studies involving hand-off communication with the purpose to identify barriers to effective handoffs and strategies for improvement, Riesenberg, Leisch, and Cunningham (2010) found half of the studies concluded positive features in regards to standardizing hand-off report. The main features of using standardized hand-off communication processes were the reduction of missed information and consistency of care (Riesenberg et al., 2010). Many authors supported a consistent message regarding the need for a standardized tool for the hand-off communication process (Downs et al., 2012; Gage, 2013; Halm, 2013; Kerr et al., 2011; Riesenberg et al., 2010).

The literature regarding hand-off communication supported the need to use a standardized tool during the hand-off communication process (Arora & Johnson, 2006; TJC, 2012; Thomas & Donohue-Porter, 2012). The information exchanged must be

clearly understood by the receiving health care member. Although tools are useful to structure and organize the information exchanged, one-on-one communication is the more valuable way to transfer data (TJC, 2012). According to Halm (2013), there are three main ingredients of hand-off communication: two-way communication with the ability to ask and answer questions and clarify information, use of a standardized tool or checklist, and the need to share information based on the goals to return the patient to optimal performance.

Staff Satisfaction with the Use of a Standardized Tool for Hand-Off Communication

Health care providers want and need the opportunity to contribute to process improvements. Team members appreciate sharing ideas for innovation, which has the potential to improve patient safety. When changes based on evidence-based practice are supported by the team, there is an increase in morale and teamwork while reducing conflict (Clark et al., 2012). Not only was teamwork and morale appreciated during the hand-off communication process, a theme of trust is inherited when collaboration is at its best (Clark et al., 2012).

Implementing a standard tool for hand-off communication is essential to help reduce the risk of error during the hand-off communication process. Not only does a standardized tool facilitate the exchange of information, but this process adds to staff satisfaction (Halm, 2013). Nurses want to produce the best outcomes by communicating clear and effective information. According to Halm (2013), the effects on clinicians using a standardized handoff were improved communication, greater knowledge, fewer technical errors, higher satisfaction, and financial outcomes. Satisfaction was created

when the patient's condition matched the information exchanged (Halm, 2013). A focused approach during the hand-off communication process allowed more time for nurses to discuss the patient and prioritize the information exchanged (Cornell et al., 2013; Maxson et al., 2012; Riesenberg et, al., 2010; Thomas & Donohue-Porter, 2012).

There are many positive features for standardizing the hand-off communication process. Staff satisfaction increases when a useful tool is used to keep the information meaningful and concise. These attributes may include face-to-face report, which helps to reduce the omission of information while increasing the team member's satisfaction and consistency of care (Riesenberg et al., 2010). Health care providers prioritize the need to concentrate on the patient in order to improve outcomes, and utilizing a standard tool for hand-off communication adds to this main objective through ensuring clarity of the information exchanged (Maxson et al., 2012; Riesenberg et al., 2010; TJC, 2012; Thomas & Donohue-Porter, 2012).

Strategies to Improve Hand-Off Communication

The hand-off communication process incorporates many areas of debate. Most authors have agreed, though, that a standardized tool is needed for hand-off report (Beckett & Kipnis, 2009; Berger et al., 2012; Gage, 2013; Street et al., 2011). Literature based on the hand-off communication process indicated that the use of a standardized tool leads to improved continuity of patient care (Street et al., 2011). In addition, a structured handoff improved the patient's perception of being well informed of their plan of care (Maxson et al., 2012). Therefore, a standardized report process was not only

supported in the literature, but it has become one of TJC's (2012) National Patient Safety

Goals.

Based on information regarding root causes of sentinel events, communication

was the leading reason (TJC, 2012). TJC (2012) mandated the need for a structured or

standardized hand-off tool and process. Therefore, most health care organizations have

adopted one of the following tools: SBAR, I PASS THE BATON, SHARE, or the five Ps

(Blouin, 2011; Freisen, White, & Byers, 2008; Rawlings, 2011; Thomas & Donahue,

2012).

SBAR appeared to be one of the most widely used hand-off report tools. There

are three main objectives to reach during the situation (S) phase: the caregivers must

identify themselves and the unit from which they are calling, identify the patient and the

reason for the call, and describe the caregiver concern (NHS, 2013). During the

background (B) phase, the caregiver relays information regarding the patient's history

and reason for seeking care. This phase speaks to the admitting diagnosis, completed or

ordered tests and procedures, allergies, and any other pertinent information that is related

to the reason for the call (NHS, 2013). Assessment (A) includes the vital signs of the

patient, lab results, and clinical impression of the concern. (R) Recommendation brings

all the information together as the health care member suggests what is needed for the

continuity of care of the patient. The physician may agree or disagree with the

recommendations and communicate additional orders as needed.

The SBAR report tool has been shown to aid in the communication process while

improving the continuity of care of the patient (Beckett & Kipnis, 2009). Not only does a

structured approach aid in the transfer of information, but it enhances patient safety outcomes by improving communication and relations among the nurses (Beckett & Kipnis, 2009). In addition, the SBAR tool created a more focused approach to hand-off communication as more time was spent discussing the patient and prioritizing the information (Cornell et al., 2013).

I PASS THE BATON (Rawlings, 2011; Thomas & Donahue-Porter, 2012) is another tool often used for communicating information from one caregiver to another. The *I* stands for introduction. *P* is the patient and this step also includes the gender and location. Assessment (*A*) follows the patient information. The first *S* refers to the situation, while the following *S* represents safety concerns. Background (*B*) speaks to the patient history. Actions (*A*) communicate the next steps on the patient's care. Timing (*T*) refers to the urgency of the ordered tests, procedures, or interventions. Ownership (*O*) delegates the responsible party. Lastly, *N* denotes the next steps on the patient's care.

Objectives of the use of this tool were to create a handoff that included eliminating the risk of error due to unclear communication, implementing an evidence based hand-off communication process, involving the patient and family during the exchange of information, and meeting compliance requirements (Thomas & Donahue-Porter, 2012). According to Thomas & Donahue-Porter (2012), in a study conducted using the I PASS THE BATON format for hand-off communication, nurses reported improved satisfaction as "they perceived that they had adequate time for the intershift report, appropriate information was being transferred, and relationships between shifts had improved" (p. 121). Patient satisfaction scores increased in three different indicators:

the nurse kept the patient informed, friendliness and courtesy of staff, and likelihood to recommend (Thomas & Donahue-Porter, 2012).

The SHARE tool, created by TJC (2012), addresses a specific area that is crucial to a successful handoff. The first step is to standardize (S) critical content including details of the patient and their history. Next, hardwire (H) within the system concentrates on tools, methods, or forms that can create a safe hand-off process. This step also speaks to the environment during handoff. It should be quiet and conducive to the transfer of information. The (A) step is the ability to allow the caregiver opportunities to ask questions. It is during this phase that critical thinking skills become apparent, information is shared, and data are scrutinized as needed. The *R* is for reinforcing quality, accountability, ownership, and monitoring of compliance. Finally, *E* creates a moment of education and coaching. Health care providers can take this opportunity to help the less knowledgeable nurse understand what constitutes a successful handoff and reduce substandard handoffs in the health care arena (Blouin, 2012).

Another tool to assist the hand-off communication process is the five Ps. The five Ps are patient, plan, purpose, problems, and precautions (Maryland Patient Safety Organization, 2008). The health care provider identifies the patient, relays the plan of care, communicates the purpose of the plan of care, discusses the problems identified during assessment, and states any precautions needed for the patient.

As standardized tools enhance the hand-off communication process, the ability to ask and answer questions is a priority during this time. The I-5 Verification of Information Tool (Berger et al., 2012) was selected to be implemented as an added

dimension to the standard hand-off communication process. This tool has been shown to enhance the hand-off communication process as it provides the opportunity to clarify the exchanged information (Berger et al., 2012). This tool emphasized accountability for the sending and receiving nurses to ensure that the information shared is clearly transmitted and received. In addition, if there are any discrepancies in the transmission of the data, the hand-off process is the time to clarify the information.

Summary of the Literature Review

Literature regarding hand-off communication supports the notion that health care members need to use a standardized tool in addition to ensuring that the information exchanged is clear and correct. Although many ideas of what is appropriate for hand-off report are suggested, effective transmission of pertinent data must be included when transferring a patient from one caregiver to another. Tools are useful to structure and organize the information exchanged, but one on one communication is the more valuable way to transfer data (TJC, 2012). Highly dependable handoffs contain three essential elements which are two-way communication with the ability to ask and answer questions and clarify information, a standardized tool or checklist, and the exchange of information based on the needs or goals of the patient to return to optimal functioning (Beckett & Kipnis, 2009; Berger et al., 2012; Halm, 2013; Gage, 2013; Street et al., 2011; TJC, 2012).

Conceptual Model and Theoretical Framework

A change model was used to guide implementation of the process change for the project. Change can be very difficult for some, but if implemented correctly, the benefits

will be realized by all members involved. Kotter (1996) noted that "successful transformations are based on one fundamental insight in that major change will not happen easily" (p. 20). With the right process and attention to each step, change can occur. Kotter promoted an eight step program to create major change. The steps are (a) establishing a sense of urgency, (b) creating a guiding coalition, (c) developing a vision and strategy, (d) communicating the change, (e) empowering broad based action, (f) generating short term wins, (g) consolidating gains and producing more change, and (h) anchoring new approaches in the culture.

To initiate the change process, the first step was to establish a sense of urgency. The participants were made aware of the major opportunities that the proposed change could have for the safety of the patient. Next, the participants of the study served as a guiding coalition to lead the change on the perspective units involving the transferred patients. The participants influenced each other to carry out the intended practice using the SBAR and the I-5 Verification of Information Tool during the hand-off communication process.

A vision statement is a vivid idealized description of a desired outcome that inspires, energizes, and helps create a mental picture of the target (Constandse, 2008). The vision of the practice project was communicated to the participants to guide them in the implementation of the intended study process. Communicating the change was the next important step to a change process. Education in regards to the I-5 Verification of Information Tool and its use occurred through an on-line presentation. A clear and effective message was crucial in regards to communicating the evidence based practice

information for improving the hand-off process. Although Kotter (1996) believed that gaining understanding and commitment to a new directive is never an easy task, having the participants understand the importance of the study should support their participation.

Gains or improvements noted from the addition of the I-5 Verification of Information Tool were compiled and acknowledged in the project outcomes. Implications for practice, research and social change are discussed. Recommendations were made for future practice.

Section 3: Methodology

Introduction

The practice project determined the nurses' perception of the current hand-off communication process before and after an educational intervention and implementation of the I-5 Verification of Information Tool.

Project Design and Methods

A non-experimental (pre- and posttest) design was used to measure the nurses' perception of the current hand-off communication process. Following IRB approval (02-11-15-0366431), all registered nurses (RNs) on the telemetry units and intensive care units (ICUs) were invited to participate in the practice project. The participant letter of explanation (Appendix A) was assigned via the electronic learning management system. Because involvement in the project was voluntary, proceeding to the pre survey (Appendix B) regarding the perception of the current hand off communication process indicated agreement to participate. The survey was collected after 1 week. The survey was anonymous as each participant created a unique code word, and the completion rate was determined by a report generated from the electronic learning management system.

The participants reviewed the educational material provided via a PowerPoint presentation (Appendix C) using the electronic learning management system. The PowerPoint presentation included an overview of the practice project and provided instructions on the use of the I-5 Verification of Information Tool. Permission to utilize the I-5 Verification of Information Tool was obtained from David Stockwell, one of the creators of the tool, via personal communication (January 14, 2014). The electronic

learning management system allowed me to determine how many participants completed the assigned module by calculating completion through an electronic report standardized to maintain anonymity. All participants were given 1 week to complete this learning module.

At the end of the educational week, the participants utilized the I-5 Verification of Information Tool during the hand-off communication process for reports between the RNs involved in the project on the designated units. The current SBAR communication tool was used by the RNs when reporting to the receiving nurse at the time of the patient transfer. After the exchange of information had been completed using the SBAR format, the receiving nurse initiated the I-5 Verification of Information Tool (Berger et al., 2012) to ensure a safe, complete handoff. The receiving nurse initiated the five statements contained in the I-5 Verification of Information Tool in order to clarify the information exchanged during the handoff. The I-5 Verification of Information Tool allowed the receiving nurse to verify the exchanged information with the ability to clarify any confusion of the relayed message in order to accept responsibility of the patient's care (Berger et al., 2012).

The period for use of the I-5 Verification of Information Tool was 3 weeks. During the 3-week time frame, approximately 210 hand off communication opportunities occurred between the designated units. At the conclusion of the 3-week period utilizing the I-5 Verification of Information Tool during the hand off process, the RNs received a second link to complete the post survey (Appendix D) to evaluate the nurses' perception of the hand-off communication process after the educational intervention and the

implementation of the I-5 Verification of Information Tool. RNs that were not involved in a hand-off process during this 3-week time frame answered the first question of the post survey and no additional responses were needed. Following 1 week of time, the post surveys were collected.

Population and Sampling

The project population consisted of a convenience sample of staff RNs working in the telemetry units and ICUs in a 338-bed southwestern acute care organization. The health care facility is certified as a Level I trauma center, advanced primary stroke center, and a chest pain center. Inclusion criteria for the sample included: RNs working in the telemetry units and ICUs, who must have been involved in a patient handoff. The participant group was comprised of 402 RNs.

Data Collection

Implementation of the project occurred over 3 weeks. Because all RNs have the potential to participate in a handoff, all RNs were invited to participate in the project. RNs working on each of the designated units received a pre survey via an electronic learning management system to evaluate their perception of the current hand off communication process. The pre survey were collected after 1 week. Three weeks later, post surveys were distributed to all participating RNs via the electronic learning management system. If the RN had not been involved in a hand-off process after the educational intervention and the implementation of the I-5 Verification of Information Tool, they replied to the initial question on the post survey and no further responses were necessary. Post surveys were collected after 1 week.

Instrument

The survey tool was divided into three sections: (a) create a unique identifier or code word; (b) demographics; and (c) a standardized evaluation of the hand-off process. Each participant created their own unique identifier in order to keep the identity anonymous. Nurse demographics included (a) number of years as a nurse; (b) educational level; and (c) shift worked.

The evaluation questions contained in the pre- and post-surveys were obtained from the Hospital Survey on Patient Safety Culture (AHRQ, 2014). This tool is a validated and reliable tool that evaluates 12 different areas of patient safety: team work within units, supervisor/manager expectations and actions promoting safety, organizational learning/continuous improvement, management support for patient safety, overall perceptions of patient safety, feedback and communication about error, communication openness, frequency of events reported, teamwork across units, staffing, handoffs and transitions, and non-punitive response to errors (AHRQ, 2014). Each of the 12 safety culture dimensions that make up the survey was found to have an acceptable reliability (defined as a Cronbach's alpha greater than or equal to .60), with reliability coefficients ranging from .63 to .84 (AHRQ, 2004). Because the practice project concentrated on the hand-off communication process, the survey questions were obtained from the "Hand Off and Transitions" section of the AHRQ Hospital Survey on Patient Safety Culture.

The pre- and post-survey tool consisted of the following statements: 1) Things "fall between the cracks" when transferring patients from one unit to another; 2)

Important patient care information is often lost during shift change; 3) Problems often occur in the exchange of information across hospital units; and 4) Shift changes are problematic for patients in the hospital (AHRQ, 2014). Using a Likert Scale of 1 to 5, where 1=*strongly disagree*, 2= *disagree*, 3= *neutral*, 4= *agree*, and 5= *strongly agree*, the participants were asked to complete the pre- and post-surveys.

Data Analysis

Data analysis provided a systematic approach to organizing the data to determine if patterns and relationships were present (Polit, 2010). The data were entered into SPSS version 22.0. Descriptive statistics were used to describe the sample and inferential statistics used to analyze the pre- and posttest data. Specifically, the data, while ordinal in nature, were treated as interval level, thus a paired *t* test was used to compare the pretest scores with the posttest scores.

When using a paired *t* test, the data need to meet the assumption of normality (PROPHET StatGuide, 1997). The paired *t* test assumes that the differences between pairs of data are normally distributed. Q-Q plot graphs were created to demonstrate no outliers; therefore, the assumption of normality was demonstrated. (Appendix E).

Project Evaluation Plan

Evaluation of the project plan incorporates determining the meaning, significance, and validity of the study (Burns & Grove, 2009). The project evaluation plan was based on the pre- and post-survey results. Once the project was completed, the findings, conclusions, and implications were examined. The project question was answered. Future implications were assessed. Limitations of the study must be articulated. Based on

analysis of the responses of the pre- and post-survey, relevance to clinical practice was evaluated and changes in the hand-off communication process suggested.

Summary

Kotter's change model (Kotter, 1996) supported the proposed practice project to implement and evaluate the hand-off communication process using the I-5 Verification of Information Tool along with the SBAR format. It was essential that all participants were educated on the importance of the project and that their potential participation had the ability to change nursing practice to improve patient care outcomes. Data collection and analysis were crucial to identify perceptions of the nursing staff related to an evidence-based practice change. Results of the data analysis helped to determine the possibility of changing process by implementing the I-5 Verification of Information Tool as the standard for hand off communication.

Structured and effective hand-off communication is essential to ensure patient's safety and quality of care. Based on the current literature, there are many options for the hand-off process. SBAR has been frequently identified as one of the top methods for solid hand-off communication, having the ability to share important information about the patient from one care giver to another (Institute for Healthcare Improvement, 2015). Adding the I-5 Verification Tool can improve the quality and content of information exchanged between one caregiver to another, so that continuity of care is maintained with confidence. While the I-5 Verification of Information Tool not only stresses the importance of personal accountability, it assists to unmistakably define the transfer of responsibility for patient care to the receiving caregiver (Berger et al., 2012).

Section 4: Findings, Discussion, and Implications

Introduction

The purpose of this DNP project was to evaluate the nurses' perception of the current hand-off communication process before and after an educational intervention and implementation of the I-5 Verification of Information Tool (Berger et al., 2012). A pre survey evaluated the nurses' perception of the current hand-off communication process utilizing SBAR. Education was provided using a PowerPoint slide informing the participants on the use of the I-5 Verification of Information Tool. The participants utilized the SBAR and the I-5 Verification of Information Tool during hand-off communication process for a 3-week period. The post survey was completed evaluating the nurses' perception of the hand-off communication process using both tools.

Findings and Results

Ninety-one participants completed the pre survey and 31 participants completed the post survey for a final sample of 31 participants. Participation was voluntary and the participants remained anonymous by choosing a unique identifier for both the pre- and post-surveys. Of the 31 nurses, 10 (32.25%) had less than 5 years of nursing experience; eight (25.81%) had 5 to 10 years of nursing experience; three (9.68%) had 11 to 15 years of nursing experience; six (19.35%) had 16 to 20 years of nursing experience; and four (12.9%) had greater than 20 years of nursing experience. The level of education of the 31 nurses completing the pre- and post-survey consisted of 13 (41.94%) with an associate's degree in nursing; 16 (51.61%) with a BSN degree; one (3.22%) with an MSN degree; none with a doctoral degree, constituting 0% of the sample population; and one (3.22%)

with an "other" degree. Lastly, of the 31 nurses completing the pre- and post-survey, there were 14 (45.16%) who reported they worked day shift, and there were 17 (54.83%) who reported they worked night shift. (Appendix F).

A paired sample *t* test was performed using SPSS Version 22.0. The descriptive statistics for each question can be found in Appendix G. There was no statistically significant difference in the scores for Question 1 Pre ($m = 3.68$, $sd = 0.98$) and Question 1 Post ($m = 3.58$, $sd = 0.92$), $t(30) = 0.43$, $p = 0.67$. There was no statistically significant difference in the scores for Question 2 Pre ($m = 3.35$, $sd = 1.14$) and Question 2 Post ($m = 3.35$, $sd = 1.11$), $t(30) = 0.00$, $p = 1.0$. There was no statistically significant difference in the scores for Question 3 Pre ($m = 3.55$, $sd = 1.09$), and Question 3 Post ($m = 3.48$, $sd = 1.09$), $t(30) = 0.32$, $p = 0.75$. There was no statistically significant difference in the scores for Question 4 Pre ($m = 2.90$, $sd = 1.14$) and Question 4 Post ($m = 2.84$, $sd = 1.19$), $t(30) = 0.22$, $p = 0.83$. (Appendix H).

Discussion of Finding/Results

Based on the data analysis, the findings demonstrated that there was no statistically significant difference in the nurses' perception of the hand-off communication process when the nurse included the I-5 Verification of Information Tool. Although the analysis of data did not show statistically significant difference in the pre- and post-survey results, the literature supported the need to utilize a tool that will enhance the hand-off communication process. In addition, results of the post surveys did suggest a clinical significance for utilizing the I-5 Verification of Information Tool. According to Berger et al. (2012), engaging caregivers in an actual conversation by utilizing the

questions contained in the I-5 Verification of Information Tool leads to a more reliable hand off by clarifying the exchanged information.

According to TJC (2012), a standardized communication tool or checklist is needed to ensure that important information is shared at handoff. The use of the SBAR tool shares the information during handoff while the I-5 Verification of Information Tool verifies the information being exchanged. The opportunity for open dialogue enables the receiving nurse a chance to voice understanding and clarify the patient's plan of care and other pertinent information. Discussion surrounding the I-5 Verification of Information Tool statements helps to assure the sending nurse that the receiving nurse recognizes the next important steps in the care of the patient.

Cornell et al. (2013) discussed the need to utilize a tool that concentrates on the needs of the patients while prioritizing the information shared between the caregivers. Nurses desire a structured way to deliver report with the assurance that necessary information is being conveyed in a timely, effective manner (Downs et al., 2012; Gage, 2013; Kerr et al., 2011). When other vehicles are utilized, the health care member may become distracted and critical information may be lost in the translation. A structured-based hand-off communication process not only adds to the delivery of information about the patient, but keeps the health care provider focused on the content being exchanged (Blouin, 2012; Gage, 2013, Kerr et al., 2011). Nurses communicated that essential information must be exchanged to ensure patient safety and quality of care. In addition, the development of a hand-off tool has been shown to enhance communication between nurses and patients (Downs et al., 2012; Sears et al., 2014).

Research introduced many components for consideration in regards to standardized hand-off communication. The main approach for effective hand-off report was to create a standardized process. The consistency of the guidelines and the tools used created an environment of improved patient outcomes (Halm, 2013). The main features of using standardized hand-off communication processes were the reduction of missed information and consistency of care (Riesenberg et al., 2010). A consistent message regarding the need for a standardized tool for the hand-off communication process was supported by many authors (Downs et al., 2012; Gage, 2013; Halm, 2013; Kerr et al., 2011; Riesenberg et al., 2010).

Based on the responses of the pre- and post-surveys, although there was no statistical significance in the perception of the hand-off process before and after the educational intervention and the implementation of the I-5 Verification of Information Tool, the assumption of clinical significance was realized. Using the Likert scale for survey responses, where *strongly disagree* = 1, *disagree* = 2, *neutral* = 3, *agree* = 4, and *strongly agree* = 5, a decrease in the mean score indicated that participants perceived that the I-5 Verification of Information Tool improved the hand-off communication process. Responses to Question 1 (Things "fall between the cracks" when transferring patients from one unit to another) resulted in a mean score of 3.68 for the pre survey and 3.58 for the post survey. Responses to Question 2 (Important patient care information is often lost during shift changes) resulted in a mean score of 3.36 pre survey and 3.36 post survey indicating no change. Responses to Question 3 (Problems often occur in the exchange of information across hospital units) resulted in a mean score of 3.55 for the pre survey and

3.49 for the post survey. Lastly, responses to Question 4 (Shift changes are problematic for patients in this hospital) resulted in a mean score of 2.90 for the pre survey and 2.84 for the post survey. (Appendix G).

Although statistical significance was not realized in this population and setting, the evidence has demonstrated effectiveness of the I-5 Verification of Information Tool in other settings. By implementing the I-5 Verification of Information Tool into the hand-off process, improvement has been noted in the quality of information exchanged (Berger et al., 2012). The I-5 Verification of Information Tool has shown to contribute to a more reliable handoff by engaging the caregivers in an active conversation while clarifying information exchanged (Berger et al., 2012). The I-5 Verification of Information Tool consists of the following five statements that were addressed during the hand-off process: I know what is wrong; I know what to do; I know what to worry about; I know when to escalate; and I see what you see. These statements prompt additional explanation of the exchanged information. Adding the I-5 Verification of Information Tool has shown improvement in the quality of information shared between the caregivers (Berger et al., 2012).

Because both health care team members are responsible to manage the exchange of information, a tool with the ability to improve information organization, task completion, and read back verification of information is essential in the health care arena. The I-5 Verification of Information Tool helps to ensure that the giver and the receiver verified understanding of the information transferred between the caregivers (Berger et

al., 2012). The intent of the I-5 Verification of Information Tool was to place information in a structured format.

Implications for Practice, Research, and Social Change

Practice

Although the project results did not demonstrate statistical significance for using the I-5 Verification of Information Tool, hand-off communication continues to be a major area of opportunity to keep patients safe and ensure continuity of care (TJC, 2012). The SBAR has remained a favorite tool for hand-off communication and continues to be utilized in many health care organizations as it helps to standardize communication and expectations of the hand off process (Institute for Healthcare Improvement, 2015). Although the organization continues to utilize the SBAR tool as the standard tool for hand off communication, the literature supported the need to continually search for tools that improve hand off report by communicating patient specific information from one caregiver to another for the purpose of ensuring continuity of care (Berger et al., 2012; Sears et al., 2014; Street et al., 2011; TJC, 2012). The I-5 Verification of Information Tool will be encouraged as any tool that helps to clarify or deepen understanding of the shared information must be viewed as positive approach to patient safety.

Research

This project could influence further research by providing a more robust framework for future studies. In addition, this project could serve as a pilot project in order to be replicated to include additional units for a longer time period. Adding additional units and extending the time frame may have resulted in an increased number

of participants partaking in a hand-off process utilizing the SBAR and the I-5 Verification of Information Tool. The additional data may have provided a different set of results.

Suggestions for future projects for hand-off communication include the need to involve the end user to determine what tool appears to be the most effective in conveying information about the patient. Accurate exchange of information during patient hand-off process is paramount to patient safety. Additional recommendations for future projects on hand-off communication include conducting this study over a longer period of time including more departments. The lengthened time period would provide more opportunities for the hand-off communication process between the designated units. With a prolonged time period, the RN may become more confident in the use of the I-5 Verification of Information Tool allowing a more consistent and clearer exchange of information. Use of the emergency department (ED) as one of the designated units may have led to an increased amount of hand-off opportunities as the majority of patients are admitted to the acute care setting from the ED.

Future projects may include the collection of errors in care or event reports due to hand-off communication before and after the use of the I-5 Verification of Information Tool. Although the perception of the nurse including the I-5 Verification Tool was not statistically significant in this project, an objective finding of reduction in event reports or errors in care may impact nurses' support to add the I-5 Verification of Information Tool. Future study could analyze event reports or errors in care prior to and after the utilization

of the I-5 Verification Tool, determining if the tool aided in communication of pertinent and significant information while eliminating patient errors documented as near misses.

Social Change

According to Halm (2013), standardization of hand-off communication can impact many processes and patient outcomes, which has implications for social change. A concentrated effort during the hand-off communication process can enhance clinician performance by ensuring that the exchanged information is clear, accurate, and pertinent. Utilization of the I-5 Verification of Information Tool questions between nurses was to eliminate the need to re-clarify the exchanged information. Although not included in this project, reduction of errors and complications should occur when nurses have an opportunity to verify understanding of the information communicated (Halm, 2013). Using a standardized tool during the hand-off communication process allows the health care members to provide a structured, consistent, and comprehensive approach for the exchange of information (Cornell et al., 2013).

Project Strengths and Limitations

Strengths

Strength of the project included utilization of a valid and reliable measurement tool, the Hospital Survey on Patient Safety Culture (AHRQ, 2014). This tool is utilized in many health care settings to assess 12 different areas of patient safety (AHRQ, 2014). The questions used for the project were from the area regarding handoffs and transitions. In addition, the project received excellent support from the organizational leadership. The

electronic learning management system was available for use, which allowed for dissemination and collection of the survey results.

In addition, the sample population included 31 RNs that completed the pre- and post-survey. Of the 31 nurses, there were 10 (32.25%) with less than 5 years of nursing experience; eight (25.81%) with 5 to 10 years of nursing experience; three (9.68%) with 11 to 15 years of nursing experience; six (19.35%) with 16 to 20 years of nursing experience; and four (12.9%) with more than 20 years of nursing experience. The level of education of the 31 nurses completing the pre- and post-survey consisted of 13 (41.94%) with an associate's degree in nursing; 16 (51.61%) with a BSN degree; one (3.22%) with an MSN degree; none with a doctoral degree, constituting 0% of the sample population; and one (3.22%) with an "other" degree.

Limitations

Limitations of the project included the number of participants. Only 22.3% of the possible 402 participants completed the pre survey. Of the 90 participants that completed a pre survey, only 34.4% completed the post survey as they were involved in a hand-off communication. In addition, the total number of actual hand-off communication processes is unknown.

Additional limitations included the short time frame for the project, 3 weeks, and utilization of only two nursing units. A longer time period for implementation may have created more hand-off opportunities. Moreover, this project was conducted in two discreet units; therefore, the results did not represent the entire organization.

The educational platform could have been more interactive. The education was shared via the ELMS system. Although there was an opportunity for questions by contacting me as the project lead, a classroom setting and face-to-face interaction may have enhanced the educational process of the project. Lastly, responses were based on perceptions.

Recommendations

Although the project did not demonstrate statistically significant change in perception of RNs with the addition of the I-5 Verification of Information Tool to the hand-off process, assessing and implementing different tools to enhance the exchange of information continues to be a priority. This tool may continue to be helpful to some health care members during the hand-off communication process as each nurse has a unique perspective when evaluating effectiveness of a tool. Use of the tool will continue to be recommended for those RNs that found it helpful during the hand-off communication process.

Recommendations would include an incentive to participate in the project. Sending daily reminders or personal communication on a consistent base may have resulted in a larger sample size. A more robust sample size, with the ability to participate in a hand-off process, may have supported statistical significant findings. Extending the time frame may have enabled the actual participants to have multiple opportunities to utilize the I-5 Verification of Information Tool more consistently resulting in different survey responses. Having all nursing units in the organizations participate may have resulted in added opportunities for the hand-off communication process.

In addition, an enhanced education framework may have added to the project. Education was completed via power point education presentation in the ELMS. Face to face presentations may have improved the educational experience allowing an environment for questions and answers. Lastly, since the answers to the survey questions were based on perception, adding objective data such as event reports on the hand-off communication process would measure patient safety.

Analysis of Self as a Scholar and a Project Developer

Scholar

Nursing is a profession, but more importantly, it is a passion. The need to influence is a priority for me. The patient must always remain at the center of attention in the health care arena as their safety is vital. I have always enjoyed the profession of nursing. One can influence, support, coach, mentor, and make a difference all in one day.

My nursing career began immediately after high school when I was able to obtain a Nurse Aid position at a local hospital. It was at this time, I realized my calling. After completing a BSN program, I became an RN on a Medical Surgical Unit. After several years at this local hospital, I decided to become a traveling nurse. What an amazing adventure as this option opened so many more avenues of nursing. During my first 10 years as an RN, I had three opportunities in a leadership position. Although I gave each role 110%, leadership was not my passion at this time. It was 10 years later that I would apply and obtain a director role in my current organization. Now, as the Senior Director of Nursing, I cannot imagine myself in any other role. As a scholar, I have the ability to

assess the needs of the health care arena, review the evidence based practices, and create a project to bring the change needed.

Project Developer

The opportunity to develop a project to enhance health care has proven beneficial in many ways. It has given me the opportunity to assess the need for change and to search and appraise current literature for best evidence to support the change (Harris, Roussel, Walters, & Dearman, 2011). It has taken me on a journey to create a practice project including acceptance of the change, support from leadership of the organization, implementation, and evaluation of the results. Most importantly, it has shown me how important taking the necessary steps is to promote the change by creating the vision for the change, and support the process from beginning to end. Implementation of change for the benefit of the patient in regards to safety and quality are essentials in health care organizations.

Hand-off communication continues to be a priority for me. Our patients' safety depends on an effective hand-off report. Currently, I lead a team dedicated to improve the hand-off communication process. Although the use of tools helps to communicate needed data, it is the instilling of confidence to assume care of the patient based on the information exchanged that continues to be the challenge. Hand-off communication will continue to be a priority for me and my organization until we can ensure the process is the best it can be.

Summary

Hand-off communication remains a vital piece for patient safety. Although the I-5 Verification of Information Tool did not produce statistically significant results of nurses' perception of utilization of its use in this population, this tool is encouraged for use in the health care setting by national safety organizations. The questions contained in the I-5 Verification of Information Tool provides another avenue for the health care member to ask questions that may result in needed clarification of information.

Although many processes for effective hand-off report are suggested, effective transmission of pertinent data must be included when transferring a patient from one caregiver to another. Written tools are useful to structure and organize the information exchanged, but one on one communication is the more valuable way to transfer data (TJC, 2012). Highly dependable handoffs contain three essential elements: 1) two-way communication with the ability to ask and answer questions and clarify information, 2) a standardized tool or checklist, and 3) the exchange of information based on the needs or goals of the patient to return to optimal functioning, all of which are contained in the I-5 Verification of Information Tool (Beckett & Kipnis, 2009; Berger et al., 2012; Gage, 2013; Halm, 2013; Street et al., 2011; TJC, 2012).

Section 5: Scholarly Product

Executive Summary

Hand-off communication is a major contributor to patient safety (TJC, 2012). Incomplete or inaccurate information at hand-off report has been identified as a significant cause of patient mortality. The hand-off communication process creates a critical time for the patient as necessary information for the continuity of care must be communicated between providers. The Institute of Medicine (IOM) reports that miscommunication or omission of critical patient information contributes to preventable medical errors that result in 98,000 patient deaths each year (Cohen, 2013).

The hand-off communication process allows for verbal communication between care providers; however, it does not emphasize the need in communicating, receiving, clarifying, and understanding the information. Clarification of objective information and patients' preferences between providers not only supports continuity of care, but helps to ensure patient safety. Evidence supports a tool that allows for clarification of information between the providers at the time of patient handoff.

Improved patient care outcomes have been demonstrated by implementation of a standardized hand-off communication tool. Standardized tools that are valid and reliable are available for use, but are only effective when consistently implemented. Although ineffective communication may lead to unnecessarily repeating tests or procedures, increasing costs to the organization, or poor patient satisfaction scores, this is nothing compared to a loss of life or an irreversible injury to the patient that entrust the team to ensure their safety.

The purpose of this project was to evaluate the nurses' perception of the current hand-off communication process before and after an educational intervention and implementation of the I-5 Verification of Information Tool (Berger, et al., 2012). The nurses' perception is a vital piece in assessing the clarity of the hand-off communication process as nurses must feel comfortable knowing that the information exchanged will ensure continuity of care for the patient. In addition, nurses' perception of the hand-off communication process improved for nurse to nurse accountability when a solid hand-off communication process was established to keep the patient well informed of the plan of care (Maxson, Derby, Wrobleski, & Foss, 2012). The questions contained in the I-5 Verification of Information Tool provides another avenue for the health care member to ask questions that may result in needed clarification of information.

Evidence relates accurate hand-off communication to patient safety and improved outcomes. Organizations should continue to explore ways to improve hand-off communication processes by implementing evidence based tools, such as the I-5 Verification of Information Tool. Further study that includes actual patient outcomes prior to and after the addition of an evidence based tool may impact nurses' perception of tool effectiveness.

Nurses should be encouraged to consistently include a valid and reliable communication tool to verify information exchanged during the hand-off communication process. The I-5 Verification of Information Tool has been found to improve care outcomes in other settings (Berger et al., 2012). Although the results of this project did not demonstrate a statistical significant change in perception of RNs with the addition of

the I-5 Verification of Information Tool to the hand-off process, continued

implementation and evaluation of information continues to be a priority in the project

setting.

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Appendix A: The Participant Letter of Explanation

Dear ICU and Telemetry RNs,

You are being invited to voluntarily participate in the above titled practice project. The purpose of this practice project is to evaluate the nurses' perception of the current hand-off communication process before and after an educational intervention and implementation of the I-5 Verification of Information Tool.

The participants chosen for this practice project are the Registered Nurses (RNs) working in the ICU and the Telemetry units. You have been selected as participants because you have the potential to be involved in a hand-off communication process.

If you agree to participate, your participation will involve a pre and post survey that will take approximately 10 minutes of your time and the use of the I-5 Verification of Information Tool during hand-off communications for a three-week time frame. The survey will be conducted using the electronic learning management system. By completing the survey, you agree to participate in the project and allow me to study the data you provide. Your name will not appear on any forms at any time. There will be no cost to you to complete the survey and you may withdraw from the project at any time. Any questions you have will be answered by contacting the Project Lead. There are no risks from your participation and no direct benefit from your participation is expected. There is no cost to you except for your time. Once the surveys are completed and you have utilized the I-5 Verification of Information Tool, you have met the requirements for participating in this project and there will be no further obligation. Refusing to participate or discontinuation of participation involves no penalty.

Only the project lead will have access to your responses to the surveys. In order to maintain your confidentiality, your name will not be revealed in any reports that result from this project as you will be asked to create a code name for the survey use.

You will be able to obtain further information from the Project Lead, Maryann Bowersox, RN, MSN, DNP Student, at 480-220-3134 or via email at maryann.bowersox@dignityhealth.org.

If you have questions about your rights as a participant, you may contact Dr. Marilyn Murphy at Walden University via email address: Marilyn.murphy@waldenu.edu.

By participating in the survey, you are giving permission to the project lead to use your information for data analysis for the practice project.

Thank you,
Maryann Bowersox, RN, MSN
DNP Student, Walden University

Appendix B: Pre survey Tool for Hand-Off Communication

Please indicate your code word here: _____.
This is a word that will allow the data to be analyzed by comparing your before and after responses to the survey.

Please choose your response to the following demographic questions.

How long have you been a nurse?   <5 years   5-10 years   11-15 years
                                    16-20 years   >20years

Please indicate your educational level: Associates   BSN
                                         MSN Doctorate   Other

Do you work days or nights?   Days   Nights

Please indicate your response to the following questions regarding the current hand off process.

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
1. Things "fall between the cracks" when transferring patients from one unit to another					
2. Important patient care information is often lost during shift changes or hand off report					
3. Problems often occur in the exchange of information across hospital units					
4. Shift changes are problematic for patients in this hospital					

(AHRQ, 2014)

Appendix C: Power Point Presentation: Overview of the Practice Project and I-5

Verification of Information Tool Instructions

Hand-Off Communication
A Practice Project

Maryann Bowersox
Walden University
September 7, 2014

Frame 1

Hand-Off Communication

1.   The Joint Commission recognizes hand-off communication as an essential piece to patient safety (The Joint Commission, 2012).

1.   Although the hand-off communication process creates a vulnerable time for the patient, the literature continues to concentrate on the effects of ineffective handoffs such as adverse events and patient safety risks (Agency for Healthcare Research and Quality (AHRQ), 2008). More information is needed on the quality of the information that should be exchanged.

2.   Since healthcare has become more specialized adding an increase in the clinicians involved in each patient's care, more and more handoffs are encountered on a daily basis (AHRQ, 2008), creating more opportunity for error or omission.

Frame 2

Reasons for Ineffective Handoffs

1.   Interpersonal communication skill and experience level of the caregiver are the most acknowledged characteristics that can lead to poor quality exchange of information (Institute of Medicine (IOM), 2009).
2.   Additional reasons include:
       1.   Unsuccessful communication methods
       2.   Limited time to share information
       3.   The inability to confirm that the information exchanged was understood by the receiver

Frame 3

Reasons for Ineffective Handoffs

1. Interpersonal communication skill and experience level of the caregiver are the most acknowledged characteristics that can lead to poor quality exchange of information (Institute of Medicine (IOM), 2009).
2. Additional reasons include:
   1. Unsuccessful communication methods
   2. Limited time to share information
   3. The inability to confirm that the information exchanged was understood by the receiver

Frame 4

Problem Statement and Project Question

Despite best efforts, the current hand-off communication process utilizes SBAR format and allows for verbal communication; however, it does not emphasize the receiving nurses' responsibilities in communicating, receiving, clarifying, and understanding the information.

<u>The Problem Statement</u>

The hand-off communication process creates an opportunity for improvement due to the use of a limited communication method.

<u>Project Question</u>

Is there a difference in nursing perception of the current hand-off communication process before and after an educational intervention and implementation of the I-5 Verification Tool?

Frame 5

Objectives of the Practice Project

Objectives

1. 1) Evaluate the nurses' perception of the current hand-off communication process
2. 2) Educate the nurses on the I-5 Verification of Information Tool
3. 3) Evaluate the nurses' perception of the hand-off communication process after the education and implementation of the I-5 Verification of Information Tool.

1.   I-5 Verification Tool—Use of 5 statements during the hand-off communication process (Berger, Sten, & Stockwell, 2011).
   1. I know what is wrong
   2. I know what to do
   3. I know what to worry about
   4. I know when to escalate
   5. I see what you see.

Frame 6

Process for the Practice Project

Participants involved in the study:
1. Will complete a pre survey to evaluate the nurses' perception of the current hand-off communication process--SBAR
2. Will receive education regarding the use of I-5 Verification of Information Tool to be added during the hand-off communication process
3. Will conduct hand-off communication for 4 weeks utilizing both tools
4. Will complete a post survey to evaluate the nurses' perception of the current hand-off communication process after the educational intervention and the implementation of the I-5 Verification of Information Tool

Frame 7

Use of the I-5 Verification of Information Tool

After the exchange of information has been completed using the SBAR format, the receiving nurse will initiate the I-5 Verification of Information Tool to ensure a safe, complete handoff (Berger, et al., 2012).

The receiving nurse will initiate the five statements contained in the I-5 Verification of Information Tool and utilize the statements to clarify any of the information exchanged during the handoff.

The sending nurse will agree with the clarification or add/change any of the information as needed.

Frame 8
Thank You!!!

Frame 9

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Appendix D: Post Survey Tool for Hand-Off Communication

Please indicate your code word here: _____.

Did you have the opportunity to utilize the I-5 Verification of Information Tool? Yes No

If no, no further responses are needed.

Please indicate your response to the following questions regarding the hand-off communication process after an educational intervention and implementation of the I-5 Verification of Information Tool.

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
1. Things "fall between the cracks" when transferring patients from one unit to another					
2. Important patient care information is often lost during shift changes					
3. Problems often occur in the exchange of information across hospital units					
4. Shift changes are problematic for patients in this hospital					

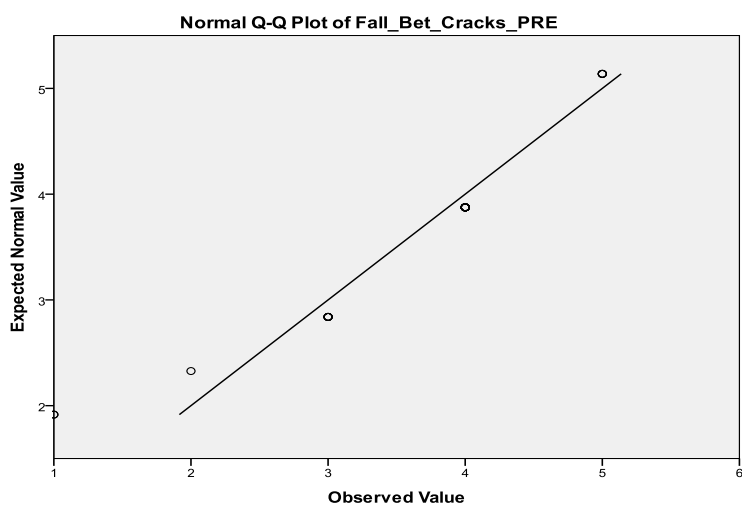(AHRQ, 2014)

Appendix E: Q-Q Plot Graphs

Figure E1. Question 1: Things "fall between the cracks" when transferring patients from one unit to another.
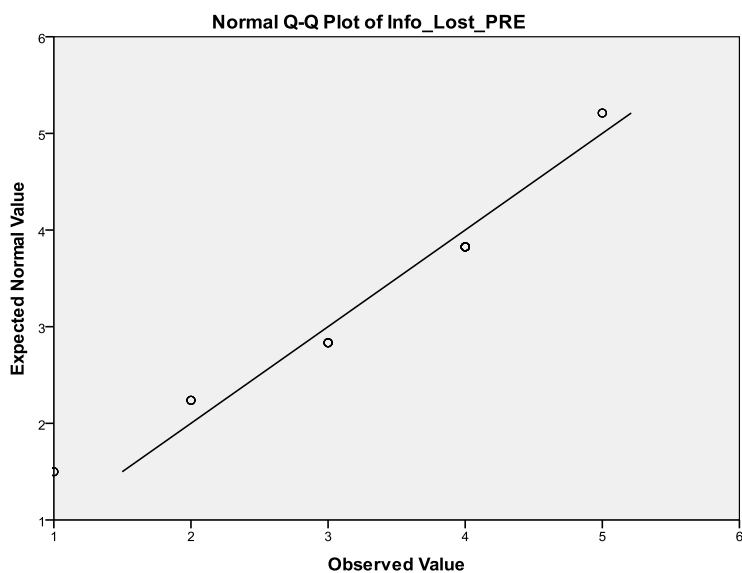

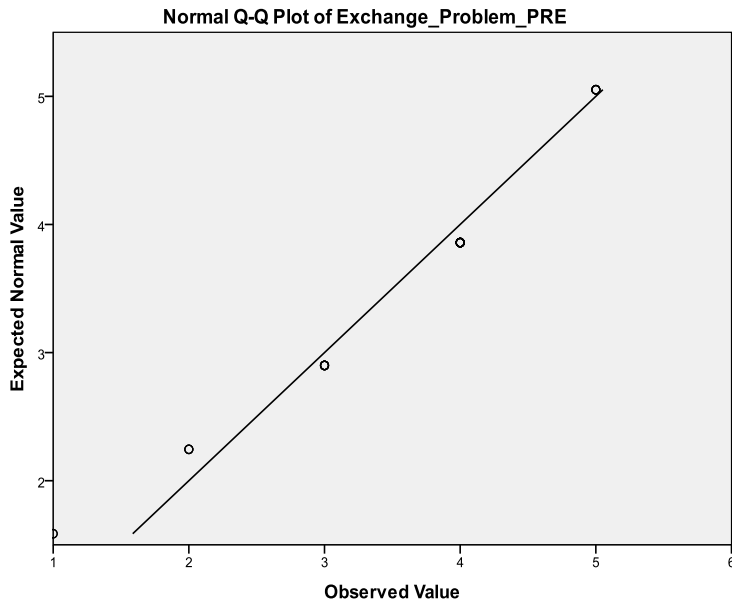*Figure E2.* Question 2: Important patient care information is often lost during shift changes.

Figure E3. Question 3: Problems often occur in the exchange of information across hospital units.
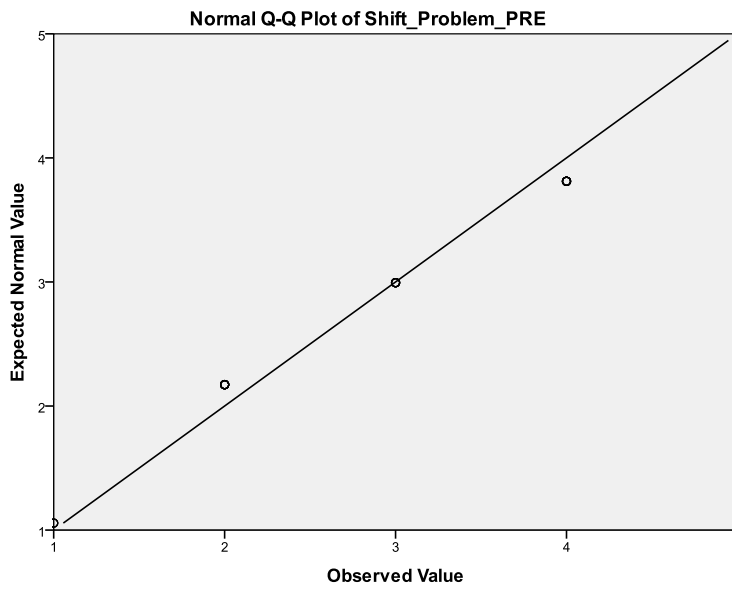

Figure E4. Question 4: Shift changes are problematic for patients in this hospital.

Appendix F: Demographic Data—Years of Nursing, Academic Degrees, and Shift

Worked

	Frequency	Percentage
Years of Nursing		
Less than 5 years	10	32.25%
Five to ten years	8	25.81%
Eleven to fifteen	3	9.68%
Sixteen to twenty	6	19.35%
Greater than 20	4	12.90%
Degree of Nursing		
Associate	13	41.94%
BSN	16	51.61%
MSN	1	3.22%
Doctorate	0	0%
Other	1	3.22%
Shift Worked		
Day	14	45.16%
Night	17	54.83

Appendix G: Paired Sample Results for Each Survey Question

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 Question 1 PRE	3.68	31	0.98	0.18
Question 1 POST	3.58	31	0.92	0.17
Pair 2 Question 2 PRE	3.35	31	1.14	0.21
Question 2 POST	3.35	31	1.11	0.20
Pair 3 Question 3 PRE	3.55	31	1.09	0.20
Question 3 POST	3.48	31	1.09	0.20
Pair 4 Question 4 PRE	2.90	31	1.14	0.20
Question 4 POST	2.84	31	1.19	0.21

Appendix H: Paired Differences for Each Survey Question

		Mean	Std. Deviation	t	df	p
Pair 1	Question 1 PRE Question 1 POST	0.10	1.25	0.43	30	0.67
Pair 2	Question 2 PRE Question 2 POST	0.00	1.07	0.00	30	1.00
Pair 3	Question 3 PRE Question 3 POST	0.07	1.12	0.32	30	0.75
Pair 4	Question 4 PRE Question 4 POST	0.07	1.61	0.22	30	0.83

Note. Significance set at $p < 0.05$