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Impact of a Standardized Tool on Handoff Quality in Nurse Change-of-Shift Reports

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Walden University

College of Health Sciences

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Wilma Ayala

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2017

Abstract

Impact of a Standardized Tool on Handoff Quality in Nurse Change-of-Shift Reports

by

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MS, Texas Woman's University, 1986

BSN, Philippine Women's University, 1976

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

Walden University

August 2017

Abstract

Within the context of healthcare delivery, human lives are at risk when health care professionals fail to communicate effectively. Audits by The Joint Commission from 1995 to 2005 revealed that 65% of sentinel events occurred as a result of staff miscommunication, prompting the requirement that standardized handoff tools be deployed. Therefore, this project was completed to improve safety in the hospital through implementation of a standardized tool that could enhance the quality of nurse handoff communication. Mohorek & Webb's (2015) linear model of communication, which emphasizes the importance of encoding, transmission, and decoding in the communication process, provided the framework for this project. Participants included 11 registered nurses (RNs) and 14 licensed vocational nurses (LVNs) who completed the pre-and-post intervention survey using the Handover Evaluation Scale. The RNs reflected significant difference in improvement in the perceived quality of handoff following the implementation of standardized handoff tool: pre-test ($M = 66.91$, $SD = 7.27$) compared to post-test ($M = 80.91$, $SD = 7.45$); $t(10) = -5.09$, $p = 0.000$. On the other hand, there was no statistically significant change noted with the LVN group before implementation of standardized handoff tool: pre-test ($M = 70.71$, $SD = 9.72$) compared to post- test implementation ($M = 73.57$, $SD = 7.73$); $t(13) = -1.06$, $p = 0.309$. The findings resulting from this project suggest that there are important differences in provider types when using standardized handoff tools and that more attention to this dynamic is warranted. The social change mandate of protecting the safety of patients is enhanced through effective communication among nurses and was demonstrated in the project.

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Dedication

I wholeheartedly dedicate this work to God who is my perpetual source of strength, my family who is my foundation and my rock, and my wonderful husband, Jaime, who brings love, joy, and meaning to my life.

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Thank you.

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Section 1: Nature of the Project

Communication is at the core of patient care. One of the most prominent communication processes is the handoff, also referred to in the literature as shift report, handover, nursing report, sign-out, change-of-shift-report, signoff, and inter-shift report (Hilligoss & Cohen, 2011; Kitson, Athlin, Elliott, & Cant, 2014; Staggers & Blaz, 2013). Handoff is a transactional activity involving the outgoing and oncoming health professionals to establish continuity of care through a process that includes the exchange of information and transfer of accountability for patient care (Cohen & Hilligoss, 2010).

It is important that those who participate in handoff understand that several factors in the hospital setting can complicate handoff communication. For instance, the increase in specialty referrals has expanded the number of providers caring for patients, resulting in higher frequency of handover and greater probability of communication error (McKechnie, 2015; Wheeler, 2015). Also, frequent transitions requiring a change in the level of care and personnel could lead to loss of information as responsibility is passed from one health care professional to another (Hilligoss & Cohen, 2011). In addition, regulations such as work-hour limit could create a culture of “shift-work mentality” (Szymczak, Brooks, Volpp, & Bosk, 2010, p. 352) that can compromise the quality of patient handoff, continuity, and accountability. Finally, individual differences in mental models could lead to disagreement on methods and types of information that a provider would consider essential when giving and receiving shift report (Drach-Zahavy, Godblatt, & Maizel, 2015).

The practice of handoff, while serving many desirable purposes, is also considered a major patient safety risk. In 1999, the Institute of Medicine called attention to problematic handoffs in health care, including human factors that resulted in the breakdown of communication and coordination within the team (Kohn, Corrigan, & Donaldson, 2000). The concerns were substantiated by the Joint Commission on Accreditation of Healthcare Organizations (2005) following the review of data collected between 1995 and 2005, which revealed that 65% of sentinel events occurred as a result of handoff failure. In response to the criticality of the situation, The Joint Commission (TJC, 2006) included the requirement for hospitals to have a standardized approach to handoff with an opportunity to ask and answer questions.

The loss of data during handoff is a frequent consequence despite efforts to increase the integrity of handoff by trying different reporting mechanisms such as written, verbal, or a combination (Matic, Davidson, & Salamonson, 2011). Although the literature is inundated with studies on handoff practices and topics (Staggers & Blaz, 2013), researchers and clinicians agree that there is still no definitive conclusion as to best practices, conceptual framework, and competencies that would make handoffs immune to errors (Ardoin & Broussard, 2011; Arora, Johnson, Meltzer, & Humphrey, 2008; Gordon & Findley, 2011; Mohorek & Webb, 2015; Reisenberg, Leitzsch, & Cunningham, 2010). There is no simple, single approach that can address the complex nature of handoff, and adverse clinical outcomes continue to occur as a result (Howley & Nolan, 2015; Johnson, Carta, & Thronson, 2015).

Nurses, who frequently participate in giving or receiving shift reports, find themselves at the center of the handoff crisis. They need facilitation and training interventions to gain knowledge, develop competencies, and apply tools to manage the intricate nature of handoff (Drach-Zahavy & Hadid, 2015). In this capstone project, I took a collaborative process improvement approach in the implementation of standardized tools and practices to optimize the quality of handoff and promote positive social change.

Problem Statement

Observation of current handoff practices at the practicum site revealed opportunities for improvement. The problem stemmed from the absence of standard methods for the content or process of shift reports. On units that were observed, handoff report occurred at the nursing station, work cubicles, or break room. Some handoffs were preceded by a group huddle where the off-going charge nurse presented a summary of significant events and follow-up actions for the oncoming shift nurse. Verbal face-to-face handoff is customary and can take the form of nurse-to-nurse or nurse-to-group report. There is no standard tool used to organize information. Nurses were observed referring to their worksheets or personal notes during the report. Distractions occurred frequently, often related to side conversations, use of personal devices such as cellular phones, and staff entering or leaving the room while handoff was in progress. The use of patients' medical record as a source of information during handoff was uncommon, random, and mostly to check test results. Bedside reporting was not observed, and joint rounding was noted only occasionally for the purpose of education such as showing how a piece of

equipment works or verification of information like checking IV infusion. There was noticeable variability in who should attend the end-of-shift report. In some areas, nurse managers were present for the handoff, and in one particular area the nurse practitioner, who is also a primary care provider for that unit, was present for the morning report. Unlicensed personnel, such as patient care technicians and nursing assistants, were not present during handoff but were seen doing start-of-shift routines like passing water or taking vital signs. These personnel were later observed meeting with the nurse to get a report on the assigned patients.

It was apparent from observed behaviors and methods that the issue of variability in handoff communication existed at the practicum site, which was problematic and could have led to communication failure. Conversations with nurses and nurse managers revealed some degree of dissatisfaction with the current process, a consensus that things could be better, and a convergent view that there is room for improvement. Among the concerns voiced include resistance to questioning; lack of congruence on content; inconsistencies in practice; incomplete, missing, conflicting, or wrong information; and lack of training.

Gaps and omissions in handoff communication could lead to errors in patient care (Staggers & Blaz, 2013). Review of organizational data collected from 2014 to 2016 showed that 10.3% of the total number of incidents that occurred were related to handoff communication issues. Other occurrences labeled as patient identification incident, delay in treatment, and delay in diagnosis may have resulted, in part, from failed communication. There were 10 recorded incidents that happened in the long-term care

unit of the study site hospital. These failures confirmed the presence of problems and the need to improve communication such as the conduct of handoff. Unless the adverse outcome is obvious, most occurrences are made known based on self-reporting. Therefore, the true magnitude of the problem may not be easily and accurately determined.

The most common difficulties experienced by nurses are the lack of guidelines for handoff and determining what information to report (O'Connell, Macdonald, & Kelly, 2008). Attention to the elements of handoff process including quality of information, efficiency, and individual interaction is also necessary to maximize the quality of handoff (O'Connell, Ockerby, & Hawkins, 2014). This capstone project was needed based on the recognition that there was a lack of structure and high variability in nursing handoff. The overarching goal was to work with management and staff on the implementation of a standardized handoff tool that would be best suited to the work setting and patient population.

Purpose

The purpose of this capstone project was to improve the quality of nurse handoff by implementing the use of a standardized communication tool for shift report. According to Mayor, Bangerter, and Aribot (2012), standardization is a way to ensure reliability. The approach for the change in practice that this project addressed was consistent with process improvement strategies that are used to standardize work, improve methods, and enhance outcomes (Klee, Latta, Davis-Kirsch, & Pecchia, 2012).

There is agreement in the literature that communication is a complex task, that variation in communication represents vulnerability, and handoff remains a risky and challenging activity (Drach-Zahavy & Hadid, 2015; Hilligoss & Cohen, 2011; Hilligoss & Moffatt-Bruce, 2014; Keenan, Yakel, Dunn Lopez, Tschannen, & Ford, 2013). Nurses routinely and frequently engage in handoffs when taking breaks, transferring patients, or finishing their shift. Handoffs occur as often as six times a day (Cornell, Gervis, Yates, & Vardaman, 2013). Risk of communication failure is higher for nurses who spend the greatest amount of time caring for patients and interacting with multidisciplinary teams (Thomas, 2010). Therefore, the opportunity to make an impact on patient safety goes hand-in-hand with the development of more reliable handoff practices for nurses. This performance improvement project addressed the following question: Will the use of a standardized handoff tool for change-of-shift report improve the quality of handoff?

Communication breakdown has contributed to the occurrence of patient care incidents at the practicum site. The absence of standardized procedures and tools represent a gap in practice. This evidence-based practice (EBP) project was designed to close the practice gap by implementing the use of a standardized handoff tool to increase the quality of handoff. Studies have shown that standardization is a way of establishing guidelines, and the use of structured handoff tools provides the means for determining which information is useful and relevant (Drach-Zahavy et al., 2015; Nasarwanji, Badir, & Gurses, 2016). This project added to the body of knowledge by addressing the experiences of nurses and their efforts to improve handoff communication. The Institute for Healthcare Improvement considers quality and performance improvement initiatives

essential to the implementation of significant changes in work practice and patient care outcomes (Weston & Roberts, 2013).

Nature of the Doctoral Project

Data for this project were gathered by observing the present state of nurse handoff on the participating unit and reviewing hospital documents on communication failure. Observation adds value by the direct perception of behaviors and situational factors while document review provides nonintrusive strategies for collecting data (Bonnell & Smith, 2014). In addition, I mapped existing handoff practices to determine how nurses perceive the task of giving and receiving shift reports. Process mapping not only address how individuals interact with each other and their environment but also are used to identify the strengths and weaknesses of the current process, which can then be used for standardization and improvement (Arora & Johnson, 2006). I conducted a review of the literature including multiple databases such as PubMed (NLM); CINAHL Complete (EBSCO); MEDLINE Complete (EBSCO); ProQuest Medical Sciences, Nursing and Public Health; the Cochrane Library; and Joanna Briggs Institute.

Finally, to determine the effectiveness of the intervention, I conducted a pre- and postimplementation survey of participants using the Handover Evaluation Scale (O'Connell et al., 2014). Data were organized using the Excel program, and analyses were done with repeated measures paired *t* tests to identify any statistically significant outcomes. The anticipated result from this DNP project was the improvement in the quality of handoff through the use of a standardized communication tool.

Significance

Communication is a critical factor in the delivery of safe patient care (Radtko, 2013), and how that process evolves can impact outcomes. In the United States, about 98,000 deaths occur yearly as a result of medical errors (Kohn et al., 2000), and an estimated 80% of serious errors are due to communication failure (Monegain, 2010). According to Monegain (2010), the alarming frequency of errors arising from miscommunication prompted the initiation of the Hands-off Communication Project in 2009, which showed that handoffs were defective 37% of the time and caregivers were dissatisfied with handoff quality 21% of the time. Monegain added that deficiencies in handoffs could lead to delay in care, inappropriate treatment, extended hospital stay, psychological or physical harm, serious injuries, and deaths. These unnecessary burdens affect clinicians, managers, and administrators, but the greatest impact involves patients and families particularly when harm or death ensues.

Nurses are considered the “central integrator of information” for the health care team (Keenan et al., 2013, p. 245), which makes information management and information exchange critical functions for nurses. However, communication among nurses remains ineffective, and handoff continues to be a major source of nursing errors despite the routine clinical practice of giving or receiving report (Keenan et al., 2013). According to the linear model of communication (Mohorek & Webb, 2015), there are three errors zones where communication can go wrong: the transmitter who encodes the message, the channel of transmission, and the receiver who decodes the message. These zones can be adversely affected by the presence of external, internal, and semantic noises.

This model provided a suitable conceptual framework that was used to explain the nature of handoff. Drach-Zahavy and Hadid (2015) emphasized the need to establish “risk-aware handover strategies” (p. 1135), which the linear model of communication reinforced by emphasizing the criticality of encoding, transmitting, and decoding during handoff.

The absence of a handoff tool created variability and more time spent on organizing work. Therefore, priority was given to the implementation of a standardized handoff tool that has been shown to help expedite communication, provide consistent guidelines, and generate shared mental models (Cornell et al., 2013; Halm, 2013; Holly & Poletick, 2014). Targeted solutions such as standardized practice and tools can be applied to other patient care settings to provide benefits that include cost containment, better coordination, continuity of care, improvement in quality, and above all promotion of safety for patients (Keenan et al., 2013).

The desired social change from this project, apart from improvement in patient safety, was the positive experience of nurses about handoff. Studies have shown that nurses feel the information given during handoff is often poor, subjective, and irrelevant; the handoff process is time-consuming; and handoff is impaired by frequent interruptions (O’Connel et al., 2008). This project was designed to address these concerns through standardized practice and a tool suited to the work setting and patient population. Stagers and Blaz (2013) expressed that handoff methods should be structured to fit the nurses’ function and related needs.

Summary

Communication at all levels is an essential component of health care as patient safety relies heavily on how well communication transpires between the caregiving team. Interventions to safeguard patients from bad handoffs remain inadequate despite the research done on the topic. A gap in practice was noted regarding the absence of structure in handoff communication, which this capstone project aimed to correct through the implementation of a standardized handoff tool suited to the work setting and patient population. The linear model of communication provided the framework for this project. Section 2 of this paper provides an explanation of relevant concepts and the justification for the use of the linear model as the framework. In addition, I present a synthesis of seminal and scholarly works on nurse handoff communication.

Section 2: Background and Context

Handoff communication continues to receive considerable attention based on concerns that communication failure presents a significant threat to the quality of care and safety of patients (Hilligoss & Moffatt-Bruce, 2014). Poor communication was found to be the cause of as much as 60% of sentinel events (Joint Commission on Accreditation of Health Care Organizations, 2007), prompting the requirement to add structure to handoff as part of national patient safety goals. The use of the standardized method is supported by evidence from the literature, which indicates that consistency in reporting practices and the use of structured tools for communication help improve the quality of handoff (Renz, Boltz, Capezuti, & Wagner, 2015; Sand-Jecklin & Sherman, 2014). The purpose of this process improvement project was to enhance safety and quality of care through standardization of nurse-to-nurse communication. The practice-focused question addressed whether the use of a standardized handoff tool had a positive impact on handoff quality. In this section, I explain how selected concepts and a framework were used to guide the development of the DNP project. I also describe the relevance of the project to nursing practice, including the project site, and my role in the project.

Concepts, Models, and Theories

Concepts

Concepts are like building blocks linking ideas to create meaningful relationships and provide structure for conceptual thinking. The concepts in this study had both general and specific applications in that they were relevant to multiple health disciplines but could be specific enough to apply to nursing practice only. Fitzpatrick and McCarthy

(2016) explained that central to nursing professional practice are the metaparadigm concepts of person, environment, health, and nursing. Fitzpatrick and McCarthy recommended linking nursing concepts to metaparadigms and enriching the knowledge base by making the meaning of a concept an explicit depiction of nursing views. The concepts of communication, standardization, nurse-to-nurse handoff, and handoff process are explored along with an explanation of how each concept related to the current project.

Communication. The act of communication involves sending a message from one person or group to another (Finkelman & Kenner, 2016). Methods of delivery include body language, spoken words, or written messages. Raphael-Grimm (2015) expressed that every encounter in the hospital setting is an opportunity for communication, not just for giving information but also for creating understanding. Communication breakdown in health care, particularly in the nursing profession, is not uncommon and may be linked to differences in educational preparation, experience, model of care, cultural background, generational gaps, ethnicity, gender, and professional socialization (Barry, 2014; Raphael-Grimm, 2015).

A report from The Joint Commission showed that communication breakdown was a contributing factor in nearly 70% of adverse events, with 75% resulting in deaths (Barry, 2014). Communication failure is a concern because any form of communication breakdown places the patient at risk for errors, omission of care, or delay in treatment (Barry, 2014; Klee et al., 2012). In this project, I considered communication a primary nursing function and that nurses have an important role in the promotion of patient safety through the accurate transfer of information during handoff.

Standardization. Standardization refers to “consistency in the processes and content of staff’s work” (Drach-Zahavy et al., 2015, p. 593). The concept of standardization in handoff pertains to the organization of structures that include both content and order and may involve the use of tools like checklists, mnemonics such as situation-background-assessment-recommendation (SBAR), and technological solutions (Manser & Foster, 2011). Standardization, when applied to nursing handoff, involves similarly constructed tools like SBAR to frame the flow of conversation and clarify domains of information needed for shift report (Cohen & Hilligoss, 2010; Jukkala, James, Autrey, Azuero, & Miltner, 2012). The use of standardized tools can improve the quality of nurse-to-nurse communication (Ardoin & Broussard, 2011; Barry, 2014; Berger, Sten, & Stockwell, 2012; Jukkala et al., 2012). Inconsistencies in practice have been shown to cause harm (Wheeler, 2015); therefore, I recognized the value of standardization as an intervention for establishing a culture of safety in the handoff process.

Nurse-to-nurse handoff. The act of transferring responsibility and giving information about a patient’s condition and care from one shift nurse to the next constitutes nurse-to-nurse handoff (Carroll, Williams, & Gallivan, 2012). The most common information shared during handoff includes the patient’s demographics (i.e. age, sex), primary and secondary diagnoses, attending physicians, medications, vital signs, code status, tests, procedures, adverse events, and plan of care. The handoff is technical and relational, where the technical component pertains to the transfer of information and the relational aspect applies to interpersonal communication (Carroll et al., 2012). Handoff fulfills many functions, primarily the transfer of information, but also the

creation of mutual understanding (Hilligoss & Moffatt-Bruce, 2014) or “shared mental model” (Hilligoss & Cohen, 2011, p. 106). Although the primary emphasis of handoff is continuity of care, the focus has expanded over time to include highlighting the importance of patient safety (Kitson et al., 2014).

Nurse handoff takes place in a variety of settings that may include the nursing station, break room, conference room, or patient’s bedside (Evans, Grunawait, McClish, Wood, & Friese, 2012). Reports, which may or may not include the use of structured tools, are delivered in multiple ways such as face-to-face verbal interaction or through audiotapes or electronic medical records (Carroll et al., 2012). Variations in practice create a vulnerability that can be further aggravated by related factors such as memory lapses, information overload, and distractions (Hilligoss & Cohen, 2011). It is reasonable for clinicians and researchers to engage in the creation of a more robust handoff. Drach-Zahavy et al. (2015) proposed standardization and resilience strategies in handoff where standardization represents consistency and resilience is the ability to respond to situations of uncertainty. In a similar view, Hilligoss and Cohen (2011) mentioned the application of ritualistic acts to create efficiency and flexibility to enhance the ability to respond to changes or unexpected circumstances. The use of knowledge during handoff is gaining recognition with the idea that nurses are “knowledge workers” (Matney, Maddox, & Stagers, 2014, p. 185) and can use knowledge to understand data and their connection to patient problems and plan of care.

Handoff process. Handoff is a process entered into by oncoming and outgoing health care providers to communicate patient-related information (Mayor et al., 2012)

and transfer responsibility (Wheeler, 2015). Handoff requires an interaction between two parties, where one gives up responsibility or control while the other receives it (Hilligoss & Cohen, 2011). Inherent in the handoff process is the fundamental assumption that handoff facilitates the transfer of accurate information that establishes continuity and effective plan of care (Staggers & Blaz, 2013). Staggers and Blaz also expressed that accuracy during handoff can be affected by work designs, technology support requirements, and purpose or needs.

The handoff process serves multiple functions such as information exchange, discussion of patient care issues, debriefing, and giving or receiving emotional support (Hopkinson, as cited in O'Connell et al., 2014). O'Connell et al. (2014) described effective handoff in terms of the quality of information, level of staff interaction and support, and overall efficiency. O'Connell et al. used the same descriptors as subscales in the construction of a measurement tool used to evaluate nurses' perception of an effective handoff process.

Theory

The framework for this project was the Shannon-Weaver linear model of communication described by Mohorek and Webb (2015), who expressed that studies on handoff need to include descriptive research that focuses on interventions as well as clarification studies that concentrate on theories and predictions. Mohorek and Webb explored the application of communication theory as a form of clarification study that provides a foundation for handoff research. Mohorek and Webb viewed communication as a linear process with three distinct components that are also potential error zones: the

messenger who encodes the message, the channel that transmits the message, and the receiver who decodes the message. According to Mohorek and Webb, communication mishaps could occur during the encoding, transmission, or decoding of messages in an environment that may be corrupted by internal, external, and semantic noises. A schematic presentation of the communication process is shown in Figure 1.

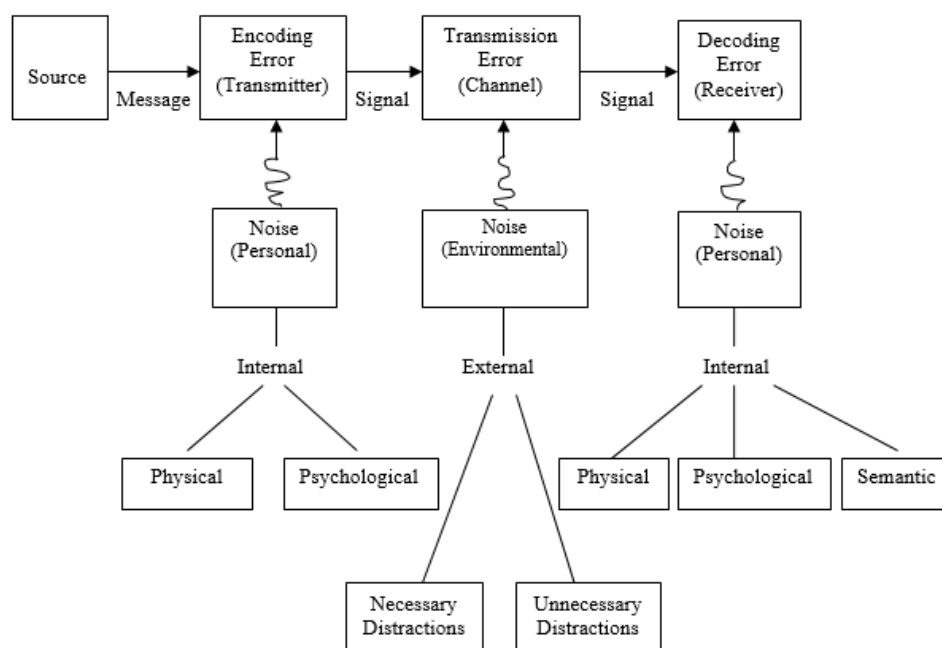


Figure 1. The linear model of communication. The model shows potential error zones and interference arising from internal, external, or semantic noises. Adapted from “Establishing a Conceptual Framework for Handoffs Using Communication Theory” by M. Mohorek and T.P. Webb (2015), *Journal of Surgical Education*, 72(3), 404.

External noises relate to environmental distractions, such as monitor alarms, whereas internal noises reside in the individual and can be psychological, such as anxiety, or physiological, like sleepiness. Semantic noises are related to such factors as race, culture, or mental models. Miscommunication can occur when the quality of encoding, transmission, or encoding is diminished due to external, internal, and semantic noises. It

is important to recognize these noises and take steps to eliminate them. In this model, the process of encoding messages represents an error zone that can occur due to lack of experience, the presence of internal noise, or both. In handoff, the lack of experience can cause erroneous interpretation of information, and internal noise can cause distractions leading to communication failure. The second error zone is transmission. During this process, messages traveling through the channel can be distorted by external noises leading to transmission errors. This can be minimized by controlling or eliminating external noises. The third error zone is the process of decoding messages, which can be affected by internal noise, lack of experience, or semantic noise. Internal noise can be managed by paying attention to oneself, and the lack of experience can be addressed by training and mentoring. Lastly, semantic noises, which could cause the receiver to inaccurately decode a signal, can be managed by strategies like read-back and the application of listening skills.

The following description based on the work of Mohorek and Webb (2015) shows the components of the linear model in action between Nurse A and Nurse B where Nurse A's brain (source) has the information (message) for Nurse B's brain (destination). In this example, Nurse A's brain (source) perceives that the patient is not breathing and has no pulse (information). Nurse A encodes the information into a language that conveys urgency (message) and promptly shouts for "Help" (signal) using her vocal cords (transmitter). The shout for help is conveyed by sound waves (channel). Nurse B's ears and brain (receiver) decode "Help!" into information for Nurse B's brain (destination) to process where the thought is interpreted as an emergency. Nurse B rushes to the patient's

room to help. Throughout the entire process, internal noises like emotional distress and external noises such as competing sounds from multiple equipment alarms can distort message interpretation and delivery.

In summary, the use of the linear model was considered appropriate for this project because it shows the elements of communication during handoff. The model provides an organized approach for how to improve communication by paying attention to the function of the messenger, transmitter, and receiver. In addition, the linear model of communication can be used to identify interventions for managing potential error zones where messages might be corrupted.

Relevance to Nursing Practice

My review of current literature indicated that problems associated with failed communication during handoff continue to occur and cause harm even though considerable research has been done on the promotion of effective handoff. For instance, handoffs received only 45% positive ratings in the Agency for Healthcare Research and Quality Hospital Survey on Patient Safety Culture indicating a less than optimal process (Sorra, Famolaro, Dyer, Khanna, & Nelson, 2011). In addition, more than 43% of malpractice claims occurred as a result of failed communication, and only 43.9% of information is accurately transferred during handoff (Barry, 2014). The Joint Commission (2016) maintained its position related to handoff in its statement on national patient safety emphasizing the significant role of communication in health care.

There remains a lack of agreement as to the consistency of information to be shared during handoff (Johnson & Cowin, 2013) despite several strategies for structuring

handoff that include communication aids such as checklists, templates, and SBAR; read-back method; and walking rounds. Additional recommendations for future practice and research have been presented including patient participation during handoff (Johnson & Cowin, 2013), use of video-stimulated recall and role play for teaching (Wang, Liang, Blazeck, & Greene, 2015), resilience-based approaches (Drach-Zahavy et al., 2015) and integration of handoff applications in the electronic health record (McKechnie, 2015; Vawdrey, Stein, Fred, Bostwick, & Stetson, 2013).

My review of the literature also revealed the use of multiple theories in handoff research including those that focus on role responsibility (Berger et al., 2012), experience (Carroll et al., 2012; Keenan et al., 2013), resilience (Drach-Zahavy et al., 2015), situational awareness (Frankel et al., 2012), change (Clarke & Persaud, 2011; Renz et al., 2015), agency and organization (Gordon & Findley, 2011; Hilligoss & Cohen, 2011), caritas and caring quality (Herbst, Friesen, & Speroni, 2013), cognition and knowledge (Birmingham, Buffum, Blegen, & Lyndon, 2015; Hilligoss & Moffatt-Bruce, 2014; Matney et al., 2014), contingency and uncertainty (Mayor et al., 2012), and evidence-based practices (Sherman, Sand-Jecklin, & Johnson, 2013).

Handoff communication remains an incomplete science (Frankel et al., 2012; Matic et al., 2011), and research in nurse handoff communication continues to be an underdeveloped field of study (Ardoin & Broussard, 2011; Kitson et al., 2014). The application of continuous quality improvement methodology in nurse handoff communication research has been shown to produce positive outcomes (Klee et al., 2012). Therefore, I initiated this process improvement project to correct the gap in

practice related to unstructured methods of handoff communication which could compromise the quality of care and safety for patients. This project supports evidence-based practice and the use of standardized communication tool for nurse-to-nurse handoff.

Local Background and Content

There is a gap in practice at the project site related to inconsistencies in handoff communication and tools. My review of hospital data from 2014 to 2016 showed that communication breakdown was the primary source of error in 10.3% of the total number of reported incidents. In particular, 10 documented adverse events linked to handoff communication issues occurred on the unit where I conducted the project.

I conducted my project at a teaching hospital in the south-central region of the United States. The hospital is one of six facilities that form the health care system. There are 853 combined beds and services include primary, tertiary, and long-term care. There are 4,700 employees serving more than one thousand patients and delivering one million episodes of outpatient care each year. The project site is a major research center with about 90 primary investigators and 400 research staff. The vision of the hospital is to be the healthcare provider of choice by ensuring a continuous focus on quality, safety, value, patient-centered care, and servant leadership.

Role of the DNP Student

I was the primary coordinator of this project. I am a full-time employee of the organization but I do not have any direct association with the staff or management team where the process improvement project was conducted. My motivation was based on my

professional commitment to help my colleagues advance in knowledge and skills, uphold the safety of our patients, and elevate the standards of care to the highest level possible. Potential biases such as those associated with individuals were controlled by conducting the project on a patient care unit where I do not have a direct relationship with anyone.

Summary

Much has been done to understand the impact of communication in health care but many questions remain unanswered, and communication failure continues to distress the health care system. It is only befitting to continue to investigate the practice of handoff as it is not yet fully understood.

Variations in communication represent a gap in practice that could compromise the quality of care and safety of patients (Frankel et al., 2012). This capstone project was designed to minimize variation in handoff communication through the implementation of standardized handoff tool. The project was carried out on a selected unit to evaluate the strength of evidence and generate new knowledge.

Section 3 of this paper presents the evidence from previous studies including organizational data which support the need for intervention. In addition, I include a discussion on participants and data analysis.

Section 3: Collection and Analysis of Evidence

Problems in nurse-to-nurse handoff continue to occur, and communication failure remains a primary cause of patient care errors (Bates & Gawande, as cited in Carroll et al., 2012). The lack of a standardized process for nurse-to-nurse handoff was identified as an institutional problem that led to this process improvement project, which was intended to address the practice gap by establishing consistency through the use of a standardized handoff tool to improve the quality of communication. The theoretical framework for this study was the linear model of communication, which describes communication as a linear process involving the sender, channel, and receiver. Communication occurs through the stages of encoding, transmission, and decoding, and errors result from the presence of internal, external, and semantic noises.

In Section 3, I clarify the practice-focused question, project purpose, and key concepts. I also describe the sources of evidence and how they supported the research project. I present the method for conducting the literature search, the selection of participants, the use of a measurement tool for data collection, ethical considerations, and statistical analysis of data.

Practice-Focused Question

There is an organizational policy that supports standardized nurse-to-nurse handoff, but it is not consistently practiced. Adding to the variations in practice is the expressed lack of education on handoff methods leading to some degree of dissatisfaction. Furthermore, errors in patient care, such as the omission of treatment or duplication of orders, continue to occur as a result of handoff failure. A gap in practice

associated with lack of standardized process and tools has been shown to exist on the selected patient care unit. This EBP project addressed the following practice-focused question: Will the use of standardized handoff tool for change-of-shift report improve the quality of handoff?

Results from previous studies indicated that standardization is a strategy that can be used to improve communication and patient care outcomes (Barry, 2014; Carroll et al., 2012; Nasarwanji et al., 2016). The purpose of this doctoral project was to address the variability in handoff practices by implementing the use of a standardized tool to guide communication during handoff. The perceived quality of handoff was measured before and after the process improvement intervention to determine the impact of using a standardized handoff tool. The following key terms were defined for the purpose of this doctoral project:

Handoff: “The exchange between health professionals of information about a patient accompanying either a transfer of control over or of responsibility for, the patient” (Cohen & Hilligoss, 2010, p. 494). Synonymous terms include *nursing handover*, *sign-over*, and *shift report*. On the unit selected for this project, the term is often replaced with *giving report*.

Handover Evaluation Scale (HES): An instrument used to measure the perceived quality of handoff based on three subscales: quality of information, interaction and support, and efficiency (O’Connell et al., 2014).

Mnemonics: Patterns of letters or words that are used as memory aids to help with recall of information and communication (Nasarwanji et al., 2016). An example of a

mnemonic is *SBAR*, which stands for situation, background, assessment, and recommendation. It is a standardized tool and a structured method of communicating patient information (Renz, Boltz, Wagner, Capezuti, & Lawrence, 2013).

Nurse: A registered nurse (RN) or licensed vocational nurse (LVN) working full time (40 hours per week) on the patient care unit selected for the capstone project.

Sources of Evidence

The decision to conduct this project was based on multiple sources of evidence. Interaction with nursing staff and observation of shift report indicated a need for a structured method for handoffs. Furthermore, analysis of organizational data revealed the occurrence of errors associated with failed communication. A review of seminal and empirical literature on nurse handoff showed that “variable language of handover” can weaken the quality of communication (Kitson et al., 2014, p. 1237) while “local standardization, with variation across settings” can strengthen it (Nasarwanji et al., 2016, p. 243). These findings provided direction for the EBP intervention. The following section presents a more detailed explanation of each source of evidence.

Published Outcomes and Research

A wide search of the literature was conducted using multiple databases: PubMed (NLM); CINAHL Complete (EBSCO); MEDLINE Complete (EBSCO); ProQuest Medical Sciences, Nursing and Public Health; The Cochrane Library; and Joanna Briggs Institute. Key search terms included *nurse*, *nursing*, *shift report*, *handoff*, *hand-off*, *patient handoff*, and *handover*. In CINAHL, hand off (patient safety) was used alternatively with shift reports or shift report (Iowa NIC). The handoff term was

expanded to include SBAR technique. In PubMed and MEDLINE, the term patient handoff was used. The search term patient handoff was used as a major term, but in cases where retrieval was small, the search was broadened to patient handoff as a minor term. Patient handoff was used as a major term for the search related to communication in handoffs.

The scope of the literature search included studies with a primary focus on nursing handoff published in English between January 2011 and July 2016. Seminal works on handoff communication and other studies frequently cited in the literature were also included. Reference lists were examined for other relevant studies. The literature search was comprehensive based on the period covered and the number and types of databases searched.

Relevant studies were analyzed for theories and evidence that could lend support to the problem statement. The search yielded 382 articles. Duplicate studies were removed including those with a highly specialized focus (e.g., operating room). The abstract or title was used to gauge applicability to the current project, leaving a total of 26 articles. A literature review matrix (Appendix A) was constructed to present selected studies. The matrix included the level of evidence suggested by Fineout-Overholt, Melnyk, Stillwell, and Williamson (2010):

- Level I: Systematic review or meta-analysis,
- Level II: Randomized controlled trial,
- Level III: Controlled trial without randomization,
- Level IV: Case-control or cohort study,

- Level V: Systematic review of qualitative or descriptive studies,
- Level VI: Qualitative or descriptive study (includes evidence implementation projects), and
- Level VII: Expert opinion or consensus.

Archival and Operational Data

The organization's operational data included continual incident reports collected by the Department of Quality-Safety-Value. Permission was granted to obtain organizational data that were relevant to the DNP project, which included incident reports associated with handoff communication issues. Certain records are protected under U.S. Code 5705 as part of the medical quality assurance program. Such records are considered privileged and were disclosed by exception only. Records were de-identified for privacy before any disclosure was made.

The patient safety section of the hospital receives and reviews approximately 300 incident reports each month. Incident reports and root cause analyses, which include human factor review, yielded valuable information on the types and sources of error associated with handoff failures. Of note is the limitation that incidents presented for analysis constituted a representative sampling and may not have accurately reflected the extent of the problem because discovery depends to some degree on self-report.

Evidence Generated for the Doctoral Project

Participants. The sampling frame for this project involved 14 RNs and 18 LVNs working full time (40 hours per week) on the long-term care unit of the partner organization. Participants were recruited from this unit, and all were invited to participate

(Appendix B) except 1 LVN whom I was unable to meet due to conflicting work schedules. Nurses from the float pool or contract agencies were excluded from the sample because their sustained participation in the study could not be guaranteed. Employees on work restrictions or modified assignment or those waived from direct patient care were also excluded. Those who were unable to participate for a considerable amount of time (2 weeks or more during project implementation) were not included. The final sample included 11 RNs and 14 LVNs.

Procedures. I conducted random observations before project implementation because observation allows for the gathering of relevant data from interaction with participants (Grove, Burns, & Gray, 2013). In particular, observations focused on how assignments were made, the location of handoff, the level of staff interaction, tools and forms used during report, duration of handoff, and attendees.

The Handover Evaluation Scale (HES) was used with permission, and I made necessary adjustments for the purpose of this project (Appendix C). Permission to publish the instrument in the doctoral project paper was also granted (Appendix D). The HES tool, which was initially referred to as the Clinical Handover Staff Survey (O'Connell et al., 2008), included three sections: demographics (Section A), description of current handover process (Section B), and perceptions of handover (Section C). The demographic section was used with minor adjustments. Section B was not used because it pertains to the structure of handoff for one particular shift only. Section C was used to determine pre- and postintervention outcomes for all shifts. Section C includes six open-ended questions and a 14-item measurement of the quality of handover processes based

on the three subscales of quality of information, interaction and support, and efficiency. Items were scored using a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Negatively worded items were reverse scored so that high scores were associated with positive perceptions and low scores were associated with negative perceptions. A fourth subscale, patient involvement, was not considered a good measure of handover and was therefore excluded (see O'Connell et al., 2014).

Construct validity and reliability of the Handover Evaluation Scale were discussed by O'Connell et al. (2014). Reliability was established using exploratory factor analyses with the minimum value of reliability set at Cronbach's alpha of 0.7. The first factor (quality of information) had a Cronbach's alpha of 0.80 while the second factor (interaction and support) showed a Cronbach's alpha of 0.86. The Cronbach's alpha was low at 0.64 for the third factor (efficiency), but its mean inter-item correlations were 0.41 and well within the recommended range of 0.15-0.50 (Clark & Watson, as cited in O'Connell et al., 2014).

The validity of the HES tool was demonstrated using multiple approaches including confirmatory factor analysis. Standardized path loadings were shown to vary from 0.51 to 0.72 for quality of information, 0.57 to 0.84 for interaction and support, 0.59 to 0.69 for efficiency, and 0.51 to 0.72 for patient involvement. A second-order model revealed patient involvement having a low loading of 0.12, accounting for only 1% of the variance in perceptions of handover. This construct was therefore removed from the model. The resulting model included three domains (quality of information, interaction and support, and efficiency) that were shown to contribute to perceptions of handover

with standardized loadings from 0.50-0.99, $p < 0.001$ (O'Connell et al., 2014). This model was replicated using a validation sample that revealed similar patterns and significant path loadings ($p < 0.001$). In addition, the relationships between the three constructs showed that they were equally represented as separate but related scales. The validity of the HES instrument was further demonstrated by checking for differences in the three scales on demographic factors, and no differences were established. Finally, floor and ceiling effects were evaluated, and there was no evidence that either existed (O'Connell et al., 2014).

Protections. Meetings with staff on all shifts including the unit management team were arranged to build relationships, create opportunities for collaboration, provide a project overview, and offer opportunities to ask and answer questions. The decision to participate was voluntary based on the ethical principle of self-determination (Grove et al., 2013). The ability of participants to remain in the study was ensured to reduce attrition (see Grove et al., 2013). Those who agreed to participate in the capstone project were given the option to withdraw at any time without consequences (see Fry, Veatch, & Taylor, 2011). Records were locked in a secure place for privacy and were de-identified to ensure participants confidentiality. There were no incentives associated with participation other than personal motivation to improve patient care processes and the occasional provision of food during and after the project to recognize the efforts of participants. Approval to proceed with the project was granted by the Walden University Institutional Review Board (IRB), approval number 01-24-17-0473795. However, this

project was considered by the partner organization to be a performance improvement initiative and was exempted from approval requirements by the facility IRB.

Analysis and Synthesis

Participants were asked to complete the demographic questionnaire (Appendix E) and the pre- and postintervention survey using Section C of the HES tool (Appendix F). The RN and LVN surveys were separated, and different color survey forms were used for each group. I distributed and collected survey tools in person. Survey response forms were checked for missing information, and decisions were made to exclude records that had numerous missing data and those in which essential information had been omitted (see Grove et al., 2013).

Briefing and debriefing sessions with management team and participants on each shift were held before, during, and at the conclusion of the project to discuss project goals, progress, and outcomes. I created the template for nurse-to-nurse handoff communication tool using the SBAR format found in the hospital policy as a guide. The content of the tool was enhanced based on staff input and information from current literature. Also, the I-5 tool (Berger et al., 2012) was incorporated into the report sheet as a reminder to staff of the need to verify information and understanding. Permission to use the I-5 tool was obtained (Appendix G). I asked the nurse manager, assistant nurse manager, and two representatives, an RN and an LVN, from the day, evening, and night shift to review the SBAR template for form and content. Three items namely appointments, side rail preference, and power of attorney were added to fit the unit setting and patient population. The final nurse-to-nurse handoff communication tool

(Appendix H) has four pages printed front-to-back and folded notebook style so each nurse working a full shift or part of a shift (e.g., four hours) has his or her section of the worksheet to use. The tool, which was initiated by the night shift, was used during handoff and passed from one shift to the next for continuation of written report of patient's condition and events over a 24-hour period. A new sheet is started every night.

Formative evaluation was done to accommodate desired changes. The nurse-to-group handoff was changed to nurse-to-nurse approach based on feedback from staff. This new method was sustained even after the completion of the capstone project. The overall success of the project was assessed using impact evaluation (see Hodges & Videto, 2011).

Summary

This section of the paper covered important considerations in the collection, handling, and analysis of evidence; description and protection of participants; and the process for getting permission to conduct the capstone project. Section 4 of this paper presents the interpretation of research findings; the implications, strengths, and limitations of the DNP project; and recommendations for future research.

Section 4: Findings and Recommendations

This evidence-based DNP project evolved from an identified problem in the organization where there was a lack of standardization in handoff practices and tools. Evidence from multiple studies indicated that standardized communication patterns, such as the use of written support tools, helped improve handoff communication (Ardoin & Broussard, 2011; Barry, 2014; Clarke & Persaud, 2011; Johnson, Sanchez, & Zheng, 2015; Jukkala et al., 2012; Nasarwanji et al., 2016). The purpose of this performance improvement project was to improve safety in the hospital by implementing the use of a standardized handoff tool to reduce errors related to poor communication. The problem statement addressed whether the use of a standardized tool would improve the quality of handoff. Evidence for this project came from the observation of nurses during handoff, review of organizational data, and an extensive literature search involving multiple databases. Responses to a demographic questionnaire were examined using descriptive statistics, and a repeated measures paired *t* test was conducted to analyze results from the pre- and postsurvey of participants.

Findings and Implications

The purpose of this project was to promote patient safety by improving the quality of handoff through standardization. This purpose was met by introducing an EBP intervention that involved designing and implementing an SBAR tool specific to the patient population and the needs of the staff where the project was done. The HES tool was used to measure outcomes of the intervention. The survey instrument included two parts: a 14-item Likert scale questionnaire and six open-ended questions that asked about variations in handoff

communication, effectiveness of each shift in giving report, strengths and weaknesses of handoff practices, recommendations for improving handoff, and other issues related to shift report. The Likert scale questionnaire included three subscales pertaining to handoff quality, which were broken down into quality of information, interaction and support, and efficiency. There were six questions on the quality of information subscale, which addressed up-to-date information, sufficient information, opportunity to clarify information, information that is easy to follow, important information, and keeping one's mind focused on information. Five questions associated with the interaction and support subscale addressed opportunities to debrief, workload, difficult clinical situations, asking questions, and getting education about patient care. The three questions on the efficiency subscale addressed time spent in report, getting relevant information, and receiving information in a timely manner. The Likert scale was coded on a 7-point scale as follows: 1 = strongly disagree; 2 = disagree; 3 = slightly disagree; 4 = neither disagree nor agree; 5 = slightly agree; 6 = agree; 7 = strongly agree. There were three items that were negatively worded and reverse scored so that higher scores indicated favorable perceptions and lower scores indicated negative perceptions of handoff.

The sample included 14 RNs (45.17%) and 17 LVNs (54.84%) who completed the demographic questionnaire. Most participants were female (77.4%), and 51.6% had worked as a nurse for 16 years or more. Most had been employed at the practicum site for 1-3 years (38.7%) and on the same unit where the project was conducted (35.5%). The ethnicity subsets included Asian Americans (45.17%), African Americans (29.04%), Caucasians (9.68%), and 3.23% each for African and American Indian. Three

participants (9.68%) did not specify their ethnicity. The age range for RNs was 36 to 55 (mean 38.5), and the range for LVNs was 23 to 69 (mean 40.4). Nine participants (29.0%) did not provide their year of birth.

Participants were asked how they wanted the handoff report conducted. Most RNs preferred nurse-to-nurse report whereas LVNs preferred either nurse-to-group or nurse-to-nurse. Table 1 shows the preferences for handoff method, and Table 2 shows the preferences for handoff location.

Table 1
Preferred Method for Handoff

	Nurse to group	Nurse to nurse
RNs	35.7% (<i>n</i> = 5)	57.1% (<i>n</i> = 8)
LVNs	47.1% (<i>n</i> = 8)	47.1% (<i>n</i> = 8)

Note. *N* = 29. Percentages do not add up to 100 because 1 RN and 1 LVN selected both methods and their answers were not included in the analysis.

Table 2
Preferred Location for Handoff

	Nurse's station	Bedside	Break room
RNs	15.38% (<i>n</i> = 2)	53.84% (<i>n</i> = 7)	30.76% (<i>n</i> = 4)
LVNs	25.0% (<i>n</i> = 4)	31.25% (<i>n</i> = 5)	43.75% (<i>n</i> = 7)

Note. *N* = 29. Two participants, an RN and an LVN, selected more than one option and their answers were not included in the analysis.

Data analysis included a repeated measures paired *t* test to examine perceived quality of nurse-to-nurse handoff preintervention and postintervention. The design was

appropriate for this project because the same participants provided data at two points in time, before and after the EBP intervention (see Corty, 2014). The design was similar to the pre- and postevaluation approach used by O'Connell et al. (2014). There were two groups of participants: 11 RNs and 14 LVNs. Three RNs and three LVNs completed only the pretest survey, and their responses were excluded from the final data analyses. Participants were surveyed using the HES instrument prior to the intervention and 4 weeks after the implementation of the standardized communication tool. Responses from the 14-item HES instrument were analyzed using a repeated measures paired *t* test to compare pre- and postsurvey summative scores. The level of significance was 0.05.

The RN responses indicated a significant improvement in the perceived quality of handoff following the implementation of the standardized handoff tool: pretest ($M = 66.91, SD = 7.27$) compared to posttest ($M = 80.91, SD = 7.45$); $t(10) = -5.09, p = 0.000$. However, there was no statistically significant change noted with the LVN group before and after implementation of the standardized handoff tool: pretest ($M = 70.71, SD = 9.72$) compared to posttest ($M = 73.57, SD = 7.73$); $t(13) = -1.06, p = 0.309$.

The variability in perceptions of handoff quality as evidenced by this project may have something to do with differences in educational preparation between RNs and LVNs and how they are socialized in their roles. Researchers have pointed out the lack of common ground (Patterson, 2012) suggesting that LVNs and RNs who are educated differently may not share the same views and could experience disagreements on what and how information is encoded, transferred, and interpreted. The absence of common ground may result in erroneous processing of information leading to errors (Toccafondi et

al., 2012). Also, employer and state regulations of professional scope of practice (Garbin & Chmielewski, 2013) may have contributed to socialization of LVNs in roles that focus on routine tasks while RNs concentrate on clinical management decisions. This professional practice orientation could influence the nurse's characterization of what constitutes a good or bad handoff. Differences between RNs' and LVNs' perceptions were also found in the open-ended questions of the survey.

Open-ended survey questions were answered by several participants regarding handoff quality. Respondents were asked about variations in shift report, and most RNs (73%) and LVNs (73%) indicated the presence of variations in handoff communication. Participants were also asked which shift was most effective in giving report. The RNs were evenly split between the morning and night shift (45%) while the LVNs perceived the morning shift as most efficient (71.43%). Strengths related to handoff practices included the following:

- handoff starts promptly and takes less time ($n = 7$),
- nurse-to-nurse report allows for time to ask questions and gather more information ($n = 10$),
- greater teamwork ($n = 3$), and
- information received is relevant/pertinent/accurate ($n = 10$).

Weaknesses identified by respondents included the following:

- nurses do not know as much about the other patients on the unit when report was changed from nurse-to-group to nurse-to-nurse ($n = 6$),
- the new handoff tool takes time to complete ($n = 5$), and

- missing or incomplete information, lack of detail ($n = 5$).

Participants were asked to provide suggestions for improving the quality of handoff. One recommendation was to have a morning huddle to receive a brief report from the charge nurse on important information about patients and other issues. This would address the concerns of those who felt that switching from group report to nurse-to-nurse report limited their ability to know about the other patients on the unit. Another participant recommended having the handoff tool in electronic format, and a second participant suggested reducing the handoff sheet to one page to make it easier to fill out and use. No comments were provided pertaining to issues with shift report not covered in the survey.

Findings from this project were consistent with other studies on the variability of handoff practices. Carroll et al. (2012) found that not only did handoff differ from unit to unit, but also differed in terms of how it was done and what tools were used. Jukkala et al. (2012) also noted inconsistencies in handoff among nurses in a hospital setting where a standard format for conducting report was lacking.

The three indicators of handoff quality considered in this capstone project were quality of information, efficiency, and degree of interaction and support among staff. The intended outcome of quality of information was only partially met because problems with missing or incomplete information continued, to some degree, after the implementation of the structured handoff tool. This outcome was similar to the findings from Halm (2013) in which openness and quality of information did not improve despite the structured change. The lack of quality in information transmitted during handoff may be

explained in part by Hilligoss and Moffatt-Bruce (2014) who found that structured tools, while serving some purpose, are also limited in generating understanding due to their fragmented presentation, suggesting that holistic understanding is best achieved through narrative thinking that creates meaningful part-to-whole relationships. Matney et al. (2014) determined that most handoffs focused on information transfer and little emphasis was placed on promoting knowledge. Matney et al. expressed that knowledge generates wisdom, which improves the quality of handoff by linking content to patient problems.

Efficiency is a desirable characteristic of high-quality handoff. Ratings on the measurement tool showed that this project was able to create efficiency through the homogenous order of handoff. A noticeable reduction of time spent in handoff was reported by the LVNs following the implementation of the SBAR tool. However, some participants ($n = 5$) remarked that it took longer to prepare for report. This could be explained by Renz et al.'s (2015) observation that nurses are not always cognizant of essential versus extraneous information and sometimes take longer to complete their report. In favor of efficiency, Cornell et al. (2013) found that SBAR proved to be an accessible and portable tool that facilitated concise communication and did not increase report time. On the other hand, a cautionary statement was made by Hill and Nyce (2010) that efficiency is not often guaranteed, suggesting that clinicians develop adaptive and predictive abilities to minimize the impact of inefficiency.

The purpose of this project was to improve the quality of interaction and support among nurses. However, the element of interaction and support was not significantly improved by the introduction of the EBP intervention. Cornell et al. (2013) showed that

nurses were more engaged with one another and had higher levels of verbal communication with the use of SBAR. Mayor et al. (2012) also called attention to the social aspect of handover, noting that nurses facing higher task uncertainty showed lesser tendency to share emotions. In addition, Birmingham et al. (2015) pointed out that good handoff involves interactive dialogue in which nurses have the opportunity to ask and answer questions. This dialogue is most likely to happen when nurses trust and respect each other.

Findings from this EBP project created an opportunity to implement systems support such as having sufficient time overlap between shifts, evaluating task and workload distribution to reduce task uncertainty, implementing team-building strategies, conducting stress-management training, and strengthening interpersonal communication and group dynamics. This project promoted positive social change by targeting risk points in handoff communication and providing solutions, such as standardization techniques, to minimize errors and improve patient safety.

Recommendations

The small sample size limited the generalizability of findings from this project. Further research is recommended involving multiple units and a larger number of participants. Also, the complexity of health care organizations and their nonlinear processes could increase the risk of error. Nurses at the partner site could be taught resilience strategies to help them bounce back from and manage the unexpected. Drach-Zahavy and Hadid (2015) emphasized the importance of flexibility and resilience as complementary elements to standardized handoff procedures.

In this project, I addressed the technicality of handoff by implementing the use of structured communication tool. It is recommended that future projects also explore human factors, such as stress and fatigue, as they could influence the quality of communication during handoff (Jukkala et al., 2012). Several participants expressed the desire to do bedside reporting. Studies have shown multiple benefits from bedside reporting that include improvement in staff satisfaction, reduction of time spent in handoff, improved prioritization, reduction in clinical incidents such as falls, and reduction of incidental overtime (Evans et al., 2012; Herbst et al., 2013; Johnson et al., 2015; Mardis et al., 2016; Sand-Jecklin & Sherman, 2014). It is therefore suggested that future process improvement projects consider the implementation of bedside shift report or a form of blended handoff that involves verbal face-to-face report between the oncoming and outgoing nurses followed by bedside rounding.

The practice orientation of nurses and their educational preparation could be contributing factors to the conduct of handoff. Findings from this project revealed variations in perception of handoff quality between RNs and LVNs which suggest that there are important differences in provider types when using standardized handoff tools. Therefore, more attention to this dynamic is warranted.

Health care organizations should not stop at a single handoff standard since patient care settings differ from one to the other and population characteristics vary. Stagers & Blaz (2013) recommend handoff practices that are “highly tailored to nurses and their contextual needs” (p. 247). A handoff tool that is specifically designed for its

staff and patient population should be considered for practical application and meaningful use.

Strengths and Limitations of the Project

Strengths

The fundamental strength of this project rested upon the successful introduction and use of SBAR tool. This performance improvement project added to the existing body of knowledge by discerning the differences in perceptions of handoff between RNs and LVNs. Another strength is the avoidance of selection bias which was accomplished by giving nurses on all shifts the opportunity to participate in this project.

A clinically significant outcome pertained to participants showing motivation to improve communication within their unit by identifying and addressing factors intrinsic to the work setting, staff, and patient population. The group recognized the need for standardization as evidenced by their willingness to use the handoff tool and participate in measuring its effectiveness.

At the conclusion of this project, a follow-up action was initiated by the management team and staff to further refine the handoff tool with the commitment to sustain the gain earned from having a standardized process. Finally, findings from this project could provide opportunities for the next DNP student to continue the process of research translation in pursuit of ongoing evaluation and improvement of handoff practices.

Limitations

This project was conducted on one unit with a small sample size which presented limitations associated with lack of statistical power. Also, the abbreviated period of four weeks for project management limited my ability to determine the sustained impact of the EBP intervention.

The problem of “social desirability bias” (Jukkala et al., 2012, p. 245) is another limitation as participants may have responded to self-report questionnaires based on what they believe their peers would prefer rather than on the basis of their experience or opinion.

Findings from this project showed some statistically significant outcomes. However, Jukkala et al. (2012) cautioned about the Hawthorne effect as a limiting influence in the interpretation of results because behaviors may have improved not from the intervention itself but by the awareness of participants that their performance is subject to evaluation.

Summary

This section of the paper focused on the discussion of findings and recommendations for future capstone projects. The strengths and limitations of the project were identified. Section 5 presents the plans for dissemination of my doctoral project. It also includes a self-analysis of my roles and abilities as a DNP graduate.

Section 5: Dissemination Plan

Dissemination of scholarly work is a way for practitioners and nurse leaders to fulfill their role as change agents. The spread of evidence-based practice outcomes could motivate research translation and help close the research-to-practice gap. Through this diffusion of knowledge opportunities are found that could improve individual and systems performance (Ploeg et al., 2010). My plan to disseminate the outcome of my capstone project at the organizational level is to use the power of networking to create a broader and more robust communication channel that could transcend many disciplines in a complex health care system (see Crawford, Johnson, & Valdez, 2011). I also intend to conduct executive briefings and other methods of presentations using the poster, webinar, and podium format to influence a change in individual practice. I would also consider publishing my work in nursing journals to reach a broader audience.

Time is a major barrier to EBP implementation especially for practitioners who struggle to find time to read and reflect on EBP findings. This obstacle limits the potential to introduce EBP changes. The lack of time was evident in a study by Ousley, Swarz, Milliken, and Ellis (2010) in which 80% of survey participants admitted having adequate access to EBP information but only one third felt they had time to read EBP findings. Another approach I will consider is to publish my abstract in nursing journals as well as locally circulated bulletins or newsletters. Busy clinicians may be more inclined to read a one-paragraph abstract than a multiple-page document. Abstracts can convey the essence of the study even if the reader does not read the entire manuscript.

Furthermore, abstracts that are presented using powerful words can stimulate curiosity (Foster, 2014).

Analysis of Self

The doctor of nursing practice (DNP), which builds on the foundation achieved through the completion of baccalaureate and master's programs, is considered the terminal academic degree in nursing, and graduates are prepared to assume leadership roles in practice, academic, and research environments (Terry, 2015). My commitment as a DNP graduate is to be actively involved in the search for new knowledge, the application of evidence, and the refinement of nursing practice. This implies having the ability to fulfill many roles that touch on advocacy, health care policy, ethics, systems thinking, research and research translation, technology, performance improvement, and continuous learning.

Practitioner

My journey through this doctoral program and the practicum component of the course, which culminated in a DNP project, made it possible for me to combine knowledge with action to transform care at the bedside. My focus as a DNP graduate is to promote population health through the adoption of evidence-based practice. Furthermore, I am prepared, as a DNP graduate, to fulfill leadership roles in matters related to policy and meaningful change (see Udulis & Mancuso, 2015). This involves the application of skills regarding leading teams and also collaboration and effective communication.

The practicum experience helped me concentrate on things that could make a difference in patient care and organizational outcomes. I found myself thinking about the

principles of total quality that include attention to the customer, continuous improvement, and teamwork (Kelly, 2011). I realized that participation in practice-focused studies is important in expanding the practice capacity of the nursing profession. I decided to concentrate on handoff communication and focus my project on effective and efficient communication in health care, which became my practice improvement initiative.

Scholar

Part of the scholarly work I accomplished during this practicum involved researching the literature for knowledge and understanding. It was one of the most time-consuming activities I undertook in this program but was also the most enriching as I looked through multiple databases for relevant research findings. The experience helped me develop my skills in synthesizing information and evaluating the strength of evidence (see Kearney, 2016). I also realized that researchers see problems from different perspectives. It made sense to compare studies to determine similarities and differences. In the process of doing this, I became acutely aware of how much can be learned from the literature review.

As a DNP scholar, I see myself taking part in activities that foster the growth of nursing knowledge. This includes information sharing for the advancement of others either through publications in academic journals or presentation at professional meetings and symposiums. I can also take part in clinical research or pursue scholarly writings in any of the categories that include “evidence-based guidelines, program evaluation, and opinion” (see Redman, Pressler, Furspan, & Potempa, 2015, p. 126). Furthermore, I can

assume roles in the academic setting or be a clinical faculty for the education of future nurses.

Project Manager

The implementation of my DNP capstone project gave me the opportunity to apply evidence-based knowledge to address a particular practice problem. White and Zaccagnini (2011) viewed the development of the DNP capstone project as systematic and rigorous. White and Zaccagnini also expressed the need to relate the capstone project to a practice specialty. My field of concentration is management, and I work in a practice environment where meeting performance measures is critical. Therefore, I identified a project that could improve a specific performance measure that is meaningful to my organization. My practice site supports research, which made the process of adopting research evidence an easier task for me.

Stanley, Malone, and Shields (2016) explained that a project begins with the idea that something needs to be developed or changed. With that in mind, I selected communication as the problem to be addressed primarily for its role in many adverse clinical events and preventable harm. Some staff had heard about standardized handoff and others, with a second job elsewhere, had used a standardized tool, but staff in the unit where the project was implemented had not had experienced such a tool. The idea of a standardized communication tool has been around for some time, but I had to remind myself that for my project site, the tool was new. White and Dudley- Brown (2012) explained that the concept of newness is not necessarily measured in terms of time but rather the extent by which an individual perceives the idea as new.

As a project manager, I had to be mindful of the stages in the lifecycle of project management. The major stages include the initial phase, the intermediate phase, and the final phase (Stanley et al., 2016). Stanley et al. expressed that the major concerns during the initial phase of project management have to do with inputs such as project teams, agreements, role delineation, timeframe, money, and project scope. The focus then shifts to outputs during the intermediate phase, which includes action plans, identifying the baseline, and evaluating progress. Lastly, the final phase of project management includes hand over, reports, and closure. All these phases became real as I went through the process of presenting an idea, executing it, evaluating the outcomes, and letting go.

It also became clear to me, as a project manager, that evaluations are essential. They need to be timely and purposeful. The formative evaluation agreement allowed for changes to be made during the project implementation phase. Minor adjustments were done on the content and format of the tool in addition to changing from nurse-to-group reporting to nurse-to-nurse handoff.

As with most change innovations, some stakeholders express uneasiness as they move from traditional ways of doing things to a process where they might experience ambiguous control (White & Dudley-Brown, 2012). White and Dudley-Brown suggested the use of adaptive structures and capacity building strategies to minimize the adversarial impact of change. These include interventions like knowledge sharing and creating a work culture that fosters integration, joint problem-solving, and modeling transformative behaviors. In the end, the staff at the study site felt valued by being part of something

new, especially because many had not had the opportunity to participate in the application of research findings.

Summary

This project provided the opportunity for participants to apply the process of translating research into practice. The involvement of management and staff in tool development facilitated collective decision-making on what the team considered essential and helpful information to include in handoff. This capstone also called attention to the value of shared mental models, communication, and information management which are critical components of an effective handoff. Also worth noting is the recognition of differences in provider types and how the dynamics of RN and LVN education and professional practice roles may affect handoff quality. Through this project, I was able to create a positive social change by enhancing patient safety through effective communication among nurses.

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Appendix A: Literature Review Matrix

Reference	Framework	Research Question(s)/ Hypotheses	Research Methodology	Analysis & Results	Grading the Evidence
Ardoin, K. B., & Broussard, L. (2011). Implementing handoff communication. <i>Journal for Nurses in Staff Development</i> , 27(3), 128-135.	Change theory	Propose SBAR as the model for standardizing handoffs	Performance improvement	Queries, chart audits, and risk management reports showed enhancement of nurse-to-physician communication, improvement in medication reconciliation, and reduction in medical errors.	Level VI
Berger, J. T., Sten, M. B., & Stockwell, D. C. (2012). Patient handoffs: Delivering content efficiently and effectively is not enough. <i>The International Journal of Risk & Safety in Medicine</i> , 24(4), 201-205.	Dual responsibility model	Determine the effectiveness of using a structured handoff receiver tool (I-5 Tool)	Pilot test	Handoff failures occurred despite use of standardized handoff tool. Institutional redesign consisted of emphasizing the need to verify received information using the I-5 tool with both parties establishing an accurate, shared mental model and sharing responsibilities for managing the handoff process.	Level VI
Birmingham, P., Buffum, M. D., Blegen, M. A., & Lyndon, A. (2015). Handoffs and patient safety: Grasping the story and painting a full picture. <i>Western Journal of Nursing Research</i> , 37(11), 1458-1478.	Constructivist grounded theory	Identify processes that promote or hinder patient safety intra-shift and during handoff	Semi-structured interviews and ethnographic observations	Data were analyzed using constant comparison and open, focused, and theoretical coding. Two safety-promoting processes were found: grasping the story (intra-shift) and painting a full picture (during handoff). Disruptions in the practice environment hinder patient safety	Level VI
Carroll, J. S., Williams, M., & Gallivan, T. M. (2012). The ins and outs of change of shift handoffs between nurses: A communication challenge. <i>BMJ Quality & Safety</i> ,	From novice to expert (Benner)	Provide background information about shift report practices and collect data associated with patient handoffs	Multi-method study that includes interview using critical incident technique, survey questionnaire, audio taping, direct observation,	N= 28 Self-reported effectiveness of handoffs was high (mean of 6.72 and 6.49) on 7-point Likert scale, with 7 as strongly agree. There was no correlation of handoff communication between incoming and outgoing	Level VI

21(7), 586-593.			<p>post handoff questionnaire, coding of nursing records, and transcribed handoffs</p> <p>30-minutes interviews of more and less experienced nurses to determine what nurses perceive as good handoff.</p> <p>30-minute survey questionnaire to gather demographic information and other item not reported in the article.</p> <p>Audio taping and direct observation of 77 handoffs during 40 shift changes. 23/28 observed during shift report: 21 as incoming nurses, 15 as outgoing nurses and 13 as both</p> <p>One-page questionnaire about each handoff that the nurse had participated in.</p> <p>Coding of nursing records for each patient handoff from 48 hours prior to and up to the time of handoff.</p>	<p>nurses ($r = -0.07$ and -0.09) suggesting that perceived effectiveness was based on other factors other than the transfer of information. Ratings of handoff effectiveness correlated highly with positive connections with other nurses ($r=0.66$ and 0.59).</p>	
Clarke, C. M., & Persaud, D. D. (2011). Leading clinical handover	4-stage change model (Smith and Kaluzny)	Fundamental changes in handover policies and	Application of the 4-stage change model to provide	Strategies related to stages of change include: - Enhancing awareness of handover problems	Level VII

improvement: A change strategy to implement best practices in the acute care setting. <i>Journal of Patient Safety</i> , 7(1), 11-18.		practices may be possible through handover knowledge building	practical guidance in improving the safety and effectiveness of handoff	and opportunities - Identifying solutions by applying and adapting best practices - Implementing locally adapted best practices - Institutionalizing practice change	
Cornell, P., Gervis, M. T., Yates, L., & Vardaman, J. M. (2013). Improving shift report focus and consistency with the situation, background, assessment, recommendation protocol. <i>JONA</i> , 43 (7/8), 422-428.	Not discussed	H1: Use of SBAR will decrease overall time for completing shift report. H2: Reports would be more consistent, with increased time on shift report tasks. H3: There will be less transcribing and more discussion with greater use of SBAR report as primary source of information. H4: Use of computer will increase with the availability of electronic SBAR. H5: There will be reduction in use of personal, handwritten notes.	Experimental design.	Three waves of observation took place during the 8-month study: at baseline, paper SBAR report, and paper and electronic SBAR report. N= 75 H1: Not supported $p=.34$ H2: Supported $p<.03$ H 3: Supported $p<.01$ H4: Not supported, no significant differences H5: Supported $p<.01$	Level III
Drach-Zahavy, A., Goldblatt, H., & Maizel, A. (2015). Between standardization and resilience: Nurses' emergent risk management strategies during handovers. <i>Journal of Clinical Nursing</i> , 24(3-4), 592-601.	Resilience theory	Determine how nurses manage handovers at shift change and strategies used to maintain patient safety.	Qualitative study	Data collected through in-depth semi-structured interviews over a 10-month period. N= 18 nurses Nurses on outgoing shift focused on organizing strategies to transmit information while nurses on the incoming shift focused on cross-checking strategies to verify accuracy of information.	Level VI
Drach-Zahavy, A., & Hadid, N. (2015). Nursing handovers as	Reason's three-bucket model	Examine the relationship between nurses' handover	Mixed-method prospective study combining	Data collected from 200 randomly selected handovers in 5 internal wards. Nearly one-fifth	Level VI

resilient points of care: Linking handover strategies to treatment errors in the patient care in the following shift. <i>Journal of Advanced Nursing</i> , 71(5), 1135-1145.		strategies and the number and types of treatment errors in the following shift	observations, surveys, and gathering data from patients' charts	of files reviewed showed wrong medication dosage, nearly one-third showed delay in carrying out orders, and nearly half had partially missing documentation.	
Evans, D., Grunawalt, J., McClish, D., Wood, W., & Friese, C. R. (2012). Bedside shift-to-shift nursing report: Implementation and outcomes. <i>MEDSURG Nursing</i> , 21(5), 281-285.	Not discussed	Reduce time spent in report Improve nursing satisfaction with the report process Facilitate clear transition of care	Process improvement. Development and evaluation of an intervention to relocate nursing shift report to the bedside.	Bedside report increased nursing satisfaction, help nurses prioritize workflow, decreased amount of time spent on report.	Level VI
Frankel, R. M., Flanagan, M., Ebright, P., Bergman, A., O'Brien, C. M., Franks, Z., Allen, A., Harris, A., & Saleem J. J. (2012). Context, culture and (non-verbal) communication affect handover quality. <i>BMJ Quality & Safety</i> , 21(Suppl 1), i121-i128,	Situation Awareness framework	Some ways of physically sharing space and time are more conducive to high-quality handovers than others.	52 handovers were videotaped and analyzed using immersion /crystallization methods of qualitative data analysis.	Four patterns of non-verbal behavior were observed: joint focus of attention, the 'poker hand', parallel play, and kerbside consultation. Joint focus of attention was deemed to have the best potential for high quality and reliability but this pattern occurred infrequently.	Level VI
Gordon, M., & Findley, R. (2011). Educational interventions to improve handovers in health care: A systematic review. <i>Medical Education</i> , 45(11), 1081-1089.	Organizational theory	Determine the characteristics of educational interventions used to enhance handovers and establish the effectiveness of these interventions.	Standardized search of online databases involving handover by doctors and nurses. Data extraction and quality assessment were completed, followed by content analysis of interventions, and extraction	N= 10 Strength of conclusion was variable among the studies selected. Themes identified include teamwork and leadership, professional responsibility related to error prevention, and information management systems. Education methods used include simulation and role-play, and group discussion or lectures.	Level V

			of key themes.		
Halm, M. A. (2013). Nursing handoffs: Ensuring safe passage for patients. <i>American Journal of Critical Care</i> , 22(2), 158-162.	Not discussed	What effect do standardized nursing handoffs have on patients', clinicians', and financial outcomes?	Database search yielded 4 quality improvement, 1 prospective observational, 1 intervention study, and 1 systematic review.	Highly reliable handoffs incorporate three key elements: face-to-face 2-way communication, structured written forms/templates/checklists, and shared understanding.	Level VI
Herbst, A. M., Friesen, M A., & Speroni, K. G. (2013). Caring, connecting, and communicating: Reflections on developing a patient-centered bedside handoff. <i>International Journal for Human Caring</i> , 17(2), 16-22.	Watson's caritas literacy dimensions	There is a need for change in the handoff process to support a more interactive communication process.	Process improvement, pilot study	A team of nurses from various specialties from five hospitals in a multihospital health system was convened in a performance improvement effort facilitated by a Lean consultant and a project manager.	Level VI
Hilligoss, B., & Cohen, M. D. (2011). Hospital handoffs as multifunctional situated routines: Implications for researchers and administrators. <i>Advances in Health Care Management</i> , 11, 91-132.	Organization theory	Handoffs as multi-functional, situated organizational routines	Inductive analysis of existing research	Current focus on standardizing the content of handoff communication could have unintended consequences with significant organizational impact.	Level V
Hilligoss, B., & Moffatt-Bruce, S. D. (2014). The limits of checklists: Handoff and narrative thinking. <i>BMJ Quality & Safety</i> , 23(7), 528-533.	Theory of cognition (Bruner)	Improving safety and effectiveness of handoff requires attention to narrative thinking. The narrative mode of thought is most essential to resilience.	NA	Paradigmatic mode of thinking (e.g. use of checklist) organizes knowledge into hierarchical categories. It is procedural, technical, rigid, and easily reproducible but not reliable in situations of ambiguity and unpredictable variability. Narrative mode of thinking organizes knowledge temporally into a plot, linking specific events into a unified whole by emphasizing	Level VII

				<p>consequential connections among them.</p> <p>Humans rely on different modes of thoughts when dealing with different types of problems.</p>	
<p>Holly, C., & Poletick, E. B. (2014). A systematic review on the transfer of information during nurse transitions in care. <i>Journal of Clinical Nursing</i>, 23(17-18), 2387-2395.</p>	Not discussed	To examine the qualitative evidence on dynamics of knowledge transfer during handoffs	Systematic review	<p>29 qualitative studies were included in the sample. Synthesized findings include:</p> <ol style="list-style-type: none"> 1. Individual nurses influence patient care nurse as the gatekeeper of information handed off that is used for subsequent care decisions. 2. There is an embedded hierarchy in relation to the handing over of information that serves as a method of enculturation into the nursing unit. 	Level 1
<p>Jukkala, A. M., James, D., Autrey, P., & Azuero, A. (2012). Developing a standardized tool to improve nurse communication during shift report. <i>Journal of Nursing Care Quality</i>, 27(3), 240-246.</p>	Clinical microsystem framework	Develop and use of an MICU communication tool (MCT) to improve communication during shift report	Process improvement,	<p>N= 61.4% RNs at baseline N= 48.5% at follow-up Total scores on MICU Shift Report Communication Scale showed significant improvement in the perception of handoff communication.</p>	Level VI
<p>Keenan, G., Yakel, E., Dunn Lopez, K., Tschannen, D., & Ford, Y. B. (2013). Challenges to nurses' efforts of retrieving, documenting, and communicating patient care information. <i>Journal of the</i></p>	From novice to expert (Benner)	To examine the information flow and uncover potential sources of error and opportunities for systematic improvement.	Qualitative study	<p>Sample of 8 medical-surgical nursing units from 4 diverse hospitals. Direct work observations were conducted for a total of 200 hours, gathering related documentation artifacts for analyses. Data were coded using qualitative content analysis and then synthesized and organized by themes.</p>	Level VI

<i>American Medical Informatics Association</i> , 20(2), 245-251.					
Kitson, A. L., Athlin, A. M., Elliott, J., & Cant, M. L. (2014). What's my line? A narrative review and synthesis of the literature on registered nurses' communication behaviours between shifts. <i>Journal of Advanced Nursing</i> , 70(6), 1228-1242.	Not discussed	Describe, appraise and synthesize seminal and empirical literature on registered nurses' communication behavior during handoff	Meta-narrative review with narrative synthesis in systematic review methodology	29 papers were reviewed. Communication behavior revealed 7 themes and 2 communication processes.	Level V
Matney, S., Maddox, L. J., & Staggers, N. (2014). Nurses as knowledge workers: Is there evidence of knowledge in patient handoffs? <i>Western Journal of Nursing Research</i> , 36(2), 171-190.	Data-information-knowledge-wisdom framework	Determine whether knowledge and wisdom are exchanged during handoffs and how these are expressed.	Secondary data analysis using deductively driven, directed content analysis	The sample included 25 different nurses giving report on five different medical and surgical units. Researchers focused only on nurses giving report and data were collected equally across nurse expertise, units, and shift changes. Knowledge was evident in the sample of 93 nursing handoffs. Expression of knowledge was noted but the amount varied widely. Majority of the 25 nurses reported information more than knowledge, but 9 nurses reported more knowledge than information.	Level VI
Mayor, E., Bangerter, A., & Aribot, M. (2012). Task uncertainty and communication during nursing handovers. <i>Journal of Advanced Nursing</i> , 68(9),	Contingency theory	H1: Handover duration is higher in units with more task uncertainty compared with the unit type where it is lowest. H2: Topic variety during	Quantitative analyses	Nurse unit managers of 80 care units in 18 hospitals were interviewed about topics and functions of handover communication and duration. Interviews were content-analyzed. Unit type with higher uncertainty showed higher handover duration	Level VI

1956-1966.		handover will be lower in units with more task uncertainty. H3: There is a linear relationship between task uncertainty and various topics of handover. H4: There is linear relationship between task uncertainty and functions of handover.		per patient, discussed fewer topics, and demonstrated less emotion-sharing. Other functions (H4) were not significantly affected by unit type.	
Nasarwanji, M. F., Badir, A., & Gurses, A. (2016). Standardizing handoff communication: Content analysis of 27 handoff mnemonics. <i>Journal of Nursing Care Quality</i> , 31(3), 238-244.	Not discussed	Determine what information should be communicated during handoff.	Qualitative data analysis	Data were analyzed using clustering and content analysis approaches. The card-sorting technique was used with clustering. There were 178 fragments of information and 108 unique fragments of information identified from the 154 letters used in the 27 mnemonics analyzed.	Level VI
Renz, S. M., Boltz, M. P., Capezuti, E., & Wagner, L. M. (2015). Implementing an SBAR communication protocol: A quality improvement project. <i>Annals of Long-Term Care: Clinical Care and Aging</i> , 23(7), 27-31.	Kotter's Eight Step Change theory	Does the use of SBAR facilitate collection and communication of patient data? Does the implementation of SBAR protocol reduce unplanned hospital transfers?	Quality improvement project	Fewer overall unplanned hospital transfers and fewer 30-day hospital re-admission. The low rate of avoidable hospital transfers was maintained.	Level VI
Sand-Jecklin, K., & Sherman, J. (2014). A quantitative assessment of patient and nurse outcomes of bedside nursing report implementation.	Not discussed	Determine the impact of change to bedside report on patient and nursing satisfaction, patient falls, nursing overtime, and	Quasi-experimental pre- and post-implementation design	Reduction noted in the number of patient falls during shift change, no significant change in nurse overtime data, increased patient involvement in care, decreased medication error at 3 months post implementation.	Level VI

<i>Journal of Clinical Nursing</i> , 23(19-20), 2854-2863.		medication errors.			
Sherman, J., Sand-Jecklin, K., & Johnson, J. (2013). Investigating bedside nursing report: A synthesis of the literature. <i>MEDSURG Nursing</i> , 22(5), 308-318	Rosswurm-Larrabee model for evidence-based practice change	Identify the advantages and drawbacks of bedside nursing report	Systematic review	12 studies were included in the systematic review. Many benefits were reported but little reproduction of results has occurred. All had either small sample size with undetermined statistical significance or they only provided qualitative support.	Level V
Staggers, N., & Blaz, J. W. (2013). Research on nursing handoffs for medical and surgical settings: An integrative review. <i>Journal of Advanced Nursing</i> , 69(2), 247-262,	NA	Synthesis of the literature to guide future computerization of handoffs	Integrative literature review	A total of 247 references found, 81 were evaluated for relevance and research quality, and 30 met selected criteria- 20 qualitative, 4 experimental, and 6 descriptive studies.	Level V

Appendix B: Invitation to Participants

My name is Wilma Ayala. I am a student in the Doctor of Nursing Practice program at Walden University. I am conducting a process improvement project on the use of standardized handoff tool. This project may be helpful in identifying factors that could increase the quality of nurse-to-nurse handoff communication and improve patient care outcomes. The time commitment for this project is four weeks.

I am requesting your voluntary participation in this project. Your participation or non-participation will not be a factor in your employment. You may withdraw at any time. Those who chose to participate will attend group meetings, implement the use of selected handoff tool, complete a pre and post intervention survey, and attend the debriefing session to evaluate project impact. The survey constitutes a packet containing the demographic questionnaire and the handover evaluation scale. Completion of survey tools could take approximately 20 minutes. To ensure anonymity, you will be asked to create your identification code which will be known only to you. You will also be asked not to write your name or any identifiable marks on the measurement tools. Findings from the project will be given as group data, and access to response data is available only to me.

I hope you will choose to participate in this project.

Appendix C: Permission to Use the Handover Evaluation Scale



MonashHealth

Centre for Nursing Research – Deakin University and Monash Health Partnership

November 1, 2016

Wilma Ayala
Walden University

Dear Ms. Ayala,

Thank you for your interest in our handover research and, in particular, our staff survey.

We hereby provide you with permission to use our survey. We also provide you with permission to make adjustments to the survey, as necessary, to suit your local context.

Our original work using this survey was published in 2008 [O'Connell, B., Macdonald, K., & Kelly, C. (2008). Nursing handover: It's time for a change. *Contemporary Nurse*, 30(1), 2-11]. Since then we have conducted further analyses to establish the psychometric properties of the survey. A second paper was published in the *Journal of Clinical Nursing* and we suggest that you include this reference when acknowledging the source of the survey. We have not made any changes to the survey since this publication.O'Connell, B., Ockerby, C., & Hawkins, M. (2014). Construct validity and reliability of the Handover Evaluation Scale. *Journal of Clinical Nursing*, 3(3-4), 560-570. doi: 10.1111/jocn.12189

Please find attached a PDF copy of the survey which is titled the Handover Evaluation Scale (HES). Our recent analysis has focused on Section C: Perceptions of Handover.

If you would like further information, please contact me via email: beverly.oconnell@umanitoba.ca.

Kind regards,

Bev O'Connell

Dean, College of Nursing, Rady Faculty of Health Sciences
University of Manitoba, Winnipeg, MB, Canada
Honorary Professor, School of Nursing and Midwifery, Deakin University, Australia

Appendix D: Permission to Publish the Handover Evaluation Scale

Beverly O'Connell

Apr 22

Dear Wilma

You have my permission to publish the instrument in your thesis and doctoral papers.

Kind Regards

Bev

Appendix E: Demographic Questionnaire

1. What gender are you?

Male Female

2. How long have you been a nurse?

less than 1 year 1-3 years 4-6 years 7-9 years

10-12 years 13-15 years 16 years and above

3. How long have you been employed at this facility?

less than 1 year 1-3 years 4-6 years 7-9 years

10-12 years 13-15 years 16 years and above

4. How long have you worked on this unit?

less than 1 year 1-3 years 4-6 years 7-9 years

10-12 years 13-15 years 16 years and above

5. What is your title?

RN LVN

6. What is the highest education you have attained?

LVN BSN MS Other (specify)

7. Please specify your ethnicity: _____

(Example: White, Hispanic or Latino, Black or African American, Native American or American Indian, Asian / Pacific Islander, Other – specify)

8. What year were you born? _____

How do you want the report given?

Nurse-to-group _____ Nurse-to-nurse _____

Where would you prefer to conduct the handoff?

Nurses' station _____ Bedside _____ Breakroom _____

Appendix F: Section C of Handover Evaluation Scale



43143

Section C: Perceptions of Handover

Handover can have several purposes including the transfer of patient information, staff debriefing, support, and nurse education.

Please indicate the extent to which you disagree or agree with the following statements from the perspective of a nurse commencing a shift on your current ward.

	Strongly Disagree	Disagree	Slightly Disagree	Neither Disagree nor Agree	Slightly Agree	Agree	Strongly Agree
17. I have the opportunity to discuss difficult clinical situations I have experienced.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. I am able to check the patient during handover. (optional item)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. I am provided with sufficient information about patients.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. I have the opportunity to debrief with other colleagues when I have had a difficult shift.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. I have the opportunity to discuss workload issues.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. I am often given information during handover that is not relevant to patient care.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. The way in which information is provided to me is easy to follow.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. I am often interrupted by patients and their significant others during handover. (optional item)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. I am able to clarify information that has been provided to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. Patient information is provided in a timely fashion.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. I have the opportunity to ask questions about things I do not understand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. I find handover takes too much time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29. The information that I receive is up to date.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. Patients are involved in the handover process. (optional item)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31. I am able to keep my mind focused on the information being given to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32. I am educated about different aspects of nursing care.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33. I feel that important information is not always given to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please turn the page to continue →



34. Is there variation between the morning, afternoon and night handover in the way handover is conducted on your current ward?

- No Yes

If yes, please describe the difference

35. In your opinion, which handover is the most effective on your current ward?
(Please select ONE option only)

- Morning Afternoon Night

36. What are the strengths of the afternoon handovers in your ward?

37. What are the limitations of the afternoon handovers in your current ward?

38. In what ways could the afternoon handover be improved in your current ward?

39. Are there any other issues with afternoon handover that have not been covered in this survey?
If yes, please describe?

**Thank you for your time in completing this questionnaire.
Please place your form in the designated box on your ward once completed.**

Appendix G: Permission to Use the I-5 Tool

Wilma Ayala

To

Dstockwell, John Berger

Jan 9 at 10:38 PM

Gentlemen,

Thank you for your great article “Patient handoffs: Delivering content efficiently and effectively is not enough” (International Journal of Risk & Safety in Medicine, 2012). It provided many valuable information and practical approaches to handoff.

I would like to get your permission to introduce the use of I-5 tool to a group of nurses who are participating in my capstone project on nurse-to-nurse handoff. I agree that handoff is a dual responsibility which is best served by using structured tools when giving and receiving end-of-shift report. I am anticipating that the use of I-5 as handoff receiver tool will yield positive outcomes for this project.

I am hopeful that permission will be granted.

Sincerely,

Wilma Ayala

wilma.ayala@waldenu.edu

Stockwell, DAVID

To

Wilma Ayala Berger, John

Jan 10 at 8:46 AM

Thanks for the interest and certainly fine to use the tool. If you wouldn't mind, at some point after implementation, let us know how it goes.

Thanks again and best of luck,

David

Appendix H: Nurse-to-Nurse Handoff Communication Tool

NURSE-TO-NURSE HANDOFF COMMUNICATION TOOL

Date:	Nurse:	Shift:
SITUATION (Why is the patient here?)		
Name	Room No.	Age
Diagnosis		
Attending MD:		
Treatment Plan: Long-term care		Short-term care for:
Consulting MD/Clinic:		
Appointments (where/when):		
BACKGROUND		
Medical/Surgical History:		
Code Status (CIRCLE ONE):		Full Code
		DNR (date ordered):
Allergies:		
Side rail preference:		
Precautions/Isolation:		
Power of Attorney (name/relationship)		Telephone Number:
Family contact (name/relationship):		Telephone Number:
ASSESSMENT (What is your assessment of the current situation? What have you done? What happened on this shift?)		
Vital Signs/Weight:	Last BM (date):	Mobility:
Diet/Feeding Tube:		
Lab/Test Results:	Blood Sugar/Treatment:	
IV access/IV device:	IV fluid:	
Output: (voided/Foley/condom):	Ostomy/Drains/Tubes:	
Medical Equipment in use:		
Incision/Wound:		
Wound care done/dressing change:		
Patient/Family Education:		
If/Then... situation:		
PRN medication given and effect:		
Problems noted on the previous shift and this shift/Actions taken:		
RECOMMENDATION/PLAN (What needs to happen next?/Follow-up actions required?)		
24 hours chart check:	Pending test results:	
Stat/One time order/New Medication /IVF/treatment that needs to be started:		
Pending consults/tests/procedure:		
Discharge Plan:		
Patient/family education:		
VERIFICATION		
I know what is wrong * I know what to do * I know what to worry about * I know when to escalate * I see what you see		