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An Evidence Based Evaluation of the Nursing Handover Process for Emergency Department Admissions

Karen Sue Delrue
Grand Valley State University

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AN EVIDENCE BASED EVALUATION OF THE NURSING HANDOVER PROCESS
FOR EMERGENCY DEPARTMENT ADMISSIONS

Karen Sue Delrue

A Dissertation Submitted to the Faculty of

GRAND VALLEY STATE UNIVERSITY

In

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For the Degree of

DOCTOR OF NURSING PRACTICE

Kirkhof College of Nursing

April 2013
Dedication

In Memory of

*Philip Gene Smith*

September 13, 1934 – March 18, 2011

&

*Lila Jean Smith*

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Abstract

The handover between the emergency department (ED) and in-patient units is a complex process that involves a transfer of responsibility with a change in care providers and physical location (Horwitz et al., 2009). Inadequate communication handovers have been identified as the primary root cause in sentinel events (Adamski, 2007; Patterson & Wears, 2010). The different unit cultures and contexts and the resulting lack of collaboration and cohesion between nurses create increased risk for adverse events (Behara et al., 2005). An evidence based practice project was completed with a team of staff nurses from the ED and in-patient environments. Donabedian’s structure, process, and outcome framework was utilized. The unit culture and context and the differences in perceptions for the ED admission handovers were analyzed. Using information from a literature review, perception surveys, and a collaborative review of the existing ED admission handover process, the work resulted in seven recommendations for improvements. In addition, the nurses developed an appreciation for the challenges of the different work environments. Setting aside unit preferences and focusing on patient safety allowed the staff to develop consensus and cohesion for the process of the ED admission handover event. The recommendations are fiscally neutral and within the locus of control of the staff involved in the process.
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On a daily basis, in every healthcare facility, the responsibility for the care of patients is transferred between care providers. This process occurs in active and interruptive environments that are typical of those in healthcare today. The communication of patient information to the next care provider can be known as “report,” “end-of-shift report,” “handoff,” or “handover.” This communication is the exchange of information necessary for patient care to continue as planned; and for the purpose of this project, the term “handover” will be used. Three primary things are transferred during every handover: information, authority and responsibility (Behara et al., 2005). Traditionally handovers have occurred in different ways and can vary depending upon the caregiver’s roles, hierarchies, circumstances and traditions (Athwal, Fields, & Wagnell, 2009). Standardizing this process to ensure accurate and pertinent information exchange with the opportunity for clarifying questions has been identified as a priority for improving patient safety (Nadzam, 2009). To date, there is a lack of standardization in this process and a gap in the knowledge regarding how to structure this event.

The Electronic Medical Record (EMR) is a clinical information system dedicated to collecting, storing, manipulating, and making available clinical information important to the delivery of patient care. Some EMR systems automatically monitor clinical events by analyzing patient data to predict, detect and potentially prevent adverse
events from occurring. The clinical events monitored by an EMR include physician orders, radiology and laboratory results, and other data from ancillary services or provider notes. The lack of a standardization process for “handovers” makes it difficult to leverage the potential available through the use of the EMR to ensure a safer process (Nelson & Massey, 2010; Riesenber, Leitzsch, & Cunningham, 2010; Staggers, Clark, Blaz, & Kapsandoy, 2011a; Staggers, Clark, Blaz, & Kapsandoy, 2011b). While handovers occur at every level of care and between every healthcare role, the focus of interest for this project is the handover that occurs at the time of admission to an in-patient unit from the Emergency Department (ED) and between the ED and the in-patient nursing staff.

**Significance**

The Joint Commission (TJC) identified the importance of developing a standardized approach to handover communication by designating it as a National Patient Safety goal in 2006 (Arora & Johnson, 2006). As such, “handover communication” is a standard that is evaluated by the Joint Commission as part of the accreditation requirements (Patterson & Wears, 2010). A “sentinel event” is defined by TJC as any unanticipated event in a healthcare setting resulting in death or serious physical or psychological injury to a patient or patients, not related to the natural course of the patient’s illness. Patients may be moved frequently during their hospital stay, especially if the intensity of the level of care changes. Each transfer or transition has the potential to create an adverse impact on patients. Effective transfer of information is critical as it has been shown that breakdown in communication between care providers is a major contributing factor in sentinel events. A review of 3000 sentinel events demonstrated that
a communication breakdown occurred 65-70% of the time (Adamski, 2007). It has been discovered that poor communication handovers have resulted in adverse events, delays in treatment, redundancies that impact efficiencies and effectiveness, low patient and healthcare provider satisfaction, and more admissions (Patterson & Wears, 2010). Common issues that have been identified include incomplete medical records and omission of essential information (Hughes, Friesen, White, & Byers, 2008). With the increasing availability of electronic medical records (EMR), work has been underway to leverage the potential for using an electronic solution for standardizing the content of information exchanged during a handover (Benham-Hutchins, 2008; Blouin, 2011; Collins, Stein, Vawdrey, Stetson, & Bakken, 2011). Unfortunately 20-30% of the information exchanged in the current verbal methods is information that is never documented in the EMR (Patterson & Wears, 2010) and establishing use of the EMR into traditional handoff workflows is complicated by context and culture of the work environment (Staggers, Clark, Blaz, & Kapsandoy, 2011).

**Implications for Nursing**

While a structured communication process has been set as a standard, evidence for best practice for handovers has not been established. Systematic reviews of nursing and physician literature highlighted several issues and opportunities for development (Arora et al., 2009; Riesenberg, Leitzsch, & Little, 2009; Riesenberg, Leitzsch, & Cunningham, 2010). Lack of quality research on handovers was noted. The communication patterns between physicians and nurses were found to have high rates of interruptions with 30% of all communication events considered interruptive, and 10% of communication occurred while performing other tasks (multi-tasking) (Alvarez & Coiera,
Poor communication between physicians and nurses creates gaps in knowledge regarding patient needs and changing condition, establishing the opportunity to make errors in judgment and clinical decisions that have the potential to impact patient safety (Alvarez & Coiera, 2006; Nadzam, 2009).

While a format to use for a handover was the topic of study in several of the nursing studies (Riesenber, Leitzsch, & Cunningham, 2010; Staggers, Clark, Blaz, & Kapsandoy, 2011a; Staggers, Clark, Blaz, & Kapsandoy, 2011b), accuracy of content and outcomes were not included. Barriers and facilitators to nursing handovers were identified, but evidence for best practice was not evident. Staggers et al. (2011a) noted that there is little research available to inform on this topic. Nurse reports have been identified as a “ritual” that involves complex, cognitively intense activities that are influenced by the context and culture of the unit where the nurse works. The process is variable even within organizations across nursing units (Staggers et al., 2011b).

The intent of the patient handover is to provide for continuity of care, to address changes in patient condition and to track and to communicate patient response to the care that is being provided. Cohen & Hilligoss (2010) describe the function of the handover as increasing the effectiveness of the actions taken by the receiving party as they assume responsibility for the patient’s care. Lingard (2012) noted that communication is a central factor for safe high quality teamwork in complex systems and that “Without effective communication, competent individuals form an incompetent team.” (p. 18).

Patient care is a complicated process with multiple providers that work within complex systems that is the current healthcare environment. This environment is chaotic and fluid, requiring healthcare providers to constantly balance and process information in
a milieu where there are multiple demands and constant interruption. A review of the concept of communication handovers brings up related concepts that highlight the complexity of the issue, with references to hierarchical models, human factors, high reliability, resilience in healthcare, interruptions, multi-tasking and complexity science (Anderson, Crabtree, Steele, & McDaniel, 2005; Grundgeiger & Sanderson, 2009; Jeffcott, Ibrahim, & Cameron, 2009; Laxmisan et al., 2007; Norris, 2009). When focusing on the handover process at the time of admission from the emergency department, it is important to understand the unique context of this transition. Horwitz, Moin, Krumholz, Wang, & Bradley, (2009) identified and described the vulnerabilities in the emergency department for internal medicine admissions. It was found that “…vulnerabilities in communication, environment, information technology, patient flow and assignment of responsibility…” (p. 703) contribute to the complexity of handovers from the emergency department. The transition from the ED spans changes in three domains – provider, department (nurse) and physical location – and adding to the complexity is the fact that these changes rarely occur simultaneously (Horwitz et al., 2009).

**Project Proposal**

Sparrow Hospital is a large tertiary care center located in Lansing, Michigan and it was the assigned clinical site for an immersion experience. As part of the immersion experience, a process improvement project was designed to demonstrate the utility of using evidence based practice to improve handovers and ultimately healthcare quality in the context of perceived barriers and facilitators. The purpose of this clinical practice project was to engage nursing staff from the Emergency Department and selected in-
patient units to participate in an evidence based inquiry exploring the issue of handovers for admitted patients from the ED. Objectives for this demonstration experience included the conduction of (a) A systems assessment by DNP student; (b) The establishment a staff nurse team with representatives from the ED and in-patient units; (c) The critique and synthesize of handover literature; (d) A critical evaluation of current ED admission handover processes; (e) The identification of opportunities to improve ED Admission handoffs and; (f) The development of recommendations for process changes.

Sparrow Hospital was also poised to implement an electronic medical record. In the interest of using the EMR to facilitate handovers, this project provided the opportunity for clinical bedside nurses to develop an understanding of the context and culture of the ED to in-patient handover process. This knowledge will help inform any future work on the development of an EMR generated tool designed to support communication handover of patient information.
CHAPTER 2
LITERATURE REVIEW

The intent of this project as stated in Chapter One was to provide an environment rich with evidence of best handover practices in which a staff team could evaluate a current handover event and envision potential process improvement in the interest of patient safety. The literature review was approached from the concepts identified related to the process of transitioning the care of a patient from one care provider to another.

The databases that were utilized included ovidMEDLINE, CINAHL, PubMEd and Google Scholar. Inclusion criteria were limited to publications in English and published between the years of 2000-2012. Search terms included the key words; report, nurse report, handovers, handoffs, shift report, care transitions, physician sign-off, communication handoffs, communication handovers, end-of-shift report, electronic health record, “EMR”, “EHR”, quality, safety, emergency department, and in-patients. Manual searching was done by reviewing an article’s reference citations and also investigating articles that were noted to have cited the original article of interest.

The findings from the literature review are organized from a high level generic exploration of the concept down to specifically mentioned strategies and ideas being presented as options and solutions for improving handover processes. At the highest level the literature describes the situation and supports the relevance of communication handovers in relationship to patient safety. The second level focuses on the background literature that demonstrates the development of the understanding of the significance of the concept. The third level provides an assessment of the evidence in the form of systematic reviews that have been completed on the concept of communication
handovers. The fourth level covers the recommendations most commonly cited in the literature for further study and potential solutions for improving a handover process.

**High Level – The Situation**

Interest in communication handovers has increased due to the attention raised by the Institute of Medicine (IOM) report of medical errors contributing to unwarranted patient deaths; the international attention of the World Health Organization; national initiatives such as those demonstrated by the The Joint Commission(TJC) in the United States; and the work being done around communication handovers in Australia (Arora & Johnson, 2006; Hughes, Friesen, White, & Byers, 2008a; Wakefield, 2000; Wolfe, 2001; Wong, Yee, Turner, 2008). This focused attention is valid as the numbers of handovers within complex health care processes continue to increase and the communication of information between healthcare providers is fundamental to patient care. The definition of handover varies and there are a multitude of synonymous terms that are used to describe the event that occurs when the care of a patient is in transition between care providers (Hughes, Friesen, White, & Byers, 2008b). Common definitions acknowledge that the handover is an event where patient information, responsibility, and authority are transferred from one or a set of caregivers to oncoming or new staff (Behara et al., 2005).

Within nursing, the giving of report has been historically established and is recognized as a nursing ritual that is part of nursing tradition and culture (Wallis, 2010). Patient risk and vulnerability at the time of handover is well documented (Adamski, 2007). It has been discovered that poor communication handovers have resulted in adverse events, delays in treatment, redundancies that impact efficiencies and effectiveness, low patient and healthcare provider satisfaction, and more admissions
(Patterson & Wears, 2010). High risk scenarios in clinical handover such as inter-profession handover, and inter-departmental handover, have been identified in addition to shift to shift handover, and hospital to community handover (Wong, Yee, Turner, 2008).

With the increasing availability of electronic medical records (EMR), work has been underway to leverage the potential for using an electronic solution for standardizing the content of information exchanged during a handover (Benham-Hutchins, 2008; Blouin, 2011; Collins, Stein, Vawdrey, Stetson, & Bakken, 2011). Unfortunately, 20-30% of the information exchanged in the verbal methods is information that is never documented in the EMR (Patterson & Wears, 2010) and establishing use of the EMR into traditional workflows is complicated by context and culture of the work environments (Staggers, Clark, Blaz, & Kapsandoy, 2011a; Staggers, Clark, Blaz, & Kapsandoy, 2011b).

This literature supports the relevancy of this process improvement project. The handover that occurs at the time a patient is admitted to an in-patient unit from the ED involves inter-profession (physician and nursing) as well as inter-departmental handovers, both of which have been identified as high risk occasions for patients undergoing this transition.

**Second Level - The Background**

The significance and importance of communication handovers to patient safety gained attention in 1999 when Wakefield (2000) began the investigations into adverse events. These investigations led to the discovery that failures in communication have significant potential for patient harm. In this section of the literature review, the
development of understanding regarding the concept of communication handover will be presented in basic chronological order.

In 2003, Donchin and colleagues completed a concurrent incident study that looked at human factor engineering and causes of human errors in an intensive care unit. In the study, errors were reported by physicians and nurses as soon as they were recognized. Over a four month period, 554 human errors were reported. An evaluation of these identified error events found that communication problems between nurses and physicians were identified in 205(37%) of these events. It was also noted that errors peaked for nurses around the time of shift change (Donchin, et.al, 2003).

In 2004, Sexton, Chan, Elliot, Stuart & Crookes undertook a study to investigate the value and content of nurse to nurse shift report because of criticisms related to time expenditure, content, accuracy, and usefulness of shift report within the role of “modern” nursing. Twenty-three handovers were audio taped on a medical ward in a Sydney, Australia hospital. The content was analyzed and classified according to location in the medical record. The findings demonstrated that 84.6% of the information discussed in report could be found in existing documentation structures. Information not relevant to the patient’s care was discussed 9.5% of the time. Actual information exchanged that was not in current documentation only accounted for 5.9% of the handover content. Evidence of this type over the years has contributed to handover models that attempt to reduce redundancy, resulting in handover processes where verbal exchanges between sending and receiving parties are minimized or eliminated in favor of review of existing documentation.
Saxton et al. (2004) also observed that the nature of the handovers was haphazard, there were no formal sources of information, and the reports were anecdotal. The researchers also noted that throughout the recorded handovers it was apparent that the handover process involved more than just information exchange for the nursing staff. This information reinforced previous studies that suggested the nursing handover is a complex process involving elements of socialization, debriefing, containment of anxiety, ritual, as well as the transfer of clinical information (Sexton et al., 2004). The authors concluded with a recommendation to develop guidelines in an attempt to improve the structure and delivery of nurse handover to reduce the length of the process and to improve the quality of the result (Sexton et al, 2004).

In the search for evidence to build a culture of safety for the handover process, Wakefield (2000) noted that the healthcare industry could look to other industries that deal with high consequences for communication failure. Patterson, Roth, Woods, Chow & Gomes (2004) analyzed observational data from 21 handover strategies used in high risk industries. They completed observations and interviews at NASA Johnson Space Center, two Canadian nuclear power plants, a railroad dispatch center in the United States, and an ambulance dispatch center in Toronto, Canada.

Twenty-one strategies were observed and it was noted that in these high risk environments, communication handovers were interactive, verbal, face-to-face interactions between the outgoing and incoming person (Patterson, Roth, Woods, Chow, & Gomes, 2004). The researchers noted that an incomplete or poor communication handover could result in: having incomplete or incorrect information on current state; being unaware of significant events; being unprepared to deal with impacts from previous
events; failing to anticipate future events; lacking knowledge that is necessary to perform
tasks, dropping or re-working activities; and creating an unwarranted shift in goals
(Patterson, Roth, Woods, Chow, & Gomes, 2004). All of these risks are relevant to the
handovers that occur in healthcare environments, in particular to the handovers that occur
at the time of an ED admission. The information from these high risk industries was
offered as a basic place to start in the evaluation and re-design of healthcare
communication handovers (Patterson, Roth, Woods, Chow, & Gomes, 2004).

From 2005 -2007, four separate studies identified barriers that contribute to poor
communication (Alvarez & Coiera, 2006; Alvarez & Coiera, 2005; Laxmisan et al., 2007;
Patterson, Roth, & Render, 2005). Alvarez and Coiera did an exploratory study
observing communication between health care workers and found that high interruptive
communication patterns accounted for 37% of the total communication (2005). In 2006,
Alvarez and Coiera looked at communication between physicians and nurses and again
noted that 30% of the communication was interrupted and that another 10% of
communication also involved multi-tasking. Alvarez and Coiera observed that in
healthcare the biggest information repository was contained in the conversations that
occurred between clinical providers and the web of conversations that guided the actions
of these individuals (2006).

In an exploratory observational study, Patterson, Roth and Render (2005)
identified a barrier to an effective handover. It was noted there was large variability in
the methods and content of communication handovers between nursing units and within
nursing units over time and individuals. The researchers observed the use of an audio
tape format for shift to shift nurse handover that prevented the opportunity for on-coming
staff to ask questions. The variability within and across the nursing units led the
researchers to note that standardizing the process would require substantial changes
within the organization (Patterson, Roth, & Render, 2005).

Laxmisan et al. (2007) observed the communication handovers occurring within
an Emergency Department environment. These observations also demonstrated that
interruptions were prevalent and diverse; and that gaps in information flow were created
by multi-tasking and shift changes (Laxmisan et al., 2007). Laxmisan et al. (2007) also
noted that the nature of communication processes in the ED were complex and
cognitively taxing for clinicians.

Pothier, Monteiro, Mooktiar & Shaw (2005) identified that there was no empirical
evidence that assessed the resilience of handover methods or identified which method
was the most effective and reliable for transferring patient information. The authors
observed nursing handovers for 12 simulated scenarios over five consecutive handover
cycles. Their findings were that all data were lost after three cycles when a purely verbal
handover style was used. A written note taking style resulted in the retention of 31% of
the data at the end of five cycles, while a combination of a verbal with a written format
resulted in minimal data loss at the conclusion of five handover cycles. This reinforced
the findings of Patterson, Roth, Woods, Chow, & Gomes, (2004) as noted previously in
the observation of effective handovers in organizations with high consequences for
communication failure.

In 2006, Arora and Johnson reported that since the Accreditation Council for
Graduate Medical Education established limits for resident duty hours, one of the
unintended consequences was an increase in the number of physician handovers during
patient care. January 1, 2006 was also the implementation date of the Joint Commission National Patient Safety Goal (NPSG) to “Improve the Effectiveness of Communication Among Care Givers” (Arora & Johnson, 2006). This safety goal required hospitals to implement a standard approach to handover communications and to provide an opportunity for staff to ask and respond to questions about a patient’s care. It was observed in this literature review that by 2006 there was increasing interest in the concept of handovers, the search for a standard, and the implications for patient safety. In particular, studies focused on Emergency Department handoffs for admitted patients as well as for physician shifts were found (Cheung et al., 2010; Horwitz, Moin, Krumholz, Wang, & Bradley, 2009; Lawrence, Tomolo, Garlisi, & Aron, 2008) adding to the literature another dimension on the handover process.

An interesting finding regarding communication handovers was noted in the Nurses’ Early Exit Survey (Meißner et al., 2007) which investigated the working conditions of nurses and variables influencing nursing retention. The survey was distributed in 10 European countries and had a 51% return rate representing 22,902 registered nurses. Within the survey was a single closed ended question “Are you satisfied with staff handovers when shift changes?” (Meißner et al., 2007, p.537). The responses showed dissatisfaction that ranged from 22% in England to a high of 61% in France. Main reasons cited most frequently were, “too many disturbances” followed by “lack of time”(p. 538). Dissatisfaction was associated with education levels and seniority but not position or shift worked. The authors made several interesting observations that contributed to understanding the context of handover in nursing. “…handover has a social and emotional context. It may be a forum for group cohesion…may promote the
development of familiarity and initiation within a social group” (p.536). It was also noted that there was a significant “lack of research” in regards to nursing handover content and structure (Meißner et al., 2007). This article provided evidence to the existence of nurse perception of handover processes and identified the level of dissatisfaction with the process among the participants.

Horwitz. et al. (2009) undertook a study to identify, describe and categorize vulnerabilities in the emergency department for internal medicine patient transfers. Among the 139 Internal Medicine and Emergency Department physician respondents to a survey, 29% reported a patient adverse event or near miss after an ED to floor transfer. Six patients were identified as needing a transfer to ICU within 24 hours of admission and there were 36 specific clinical errors in the areas of diagnosis (n=13), treatment (n=14) and disposition (n=13) identified. Vulnerabilities in the transition process from the ED environment to the in-patient environment were identified as occurring in the areas of communication type, environment workflows, differences in information technology, patient flow and assignment of responsibility (Horwitz et al., 2009).

Cohen and Hilligoss (2009) completed a review of the literature on handovers and organized the results into six themes: 1. The definition of handovers; 2. The function of handovers; 3. The challenges and difficulties of the process; 4. The costs and benefits associated with standardization; 5. Potential protocols for standardizing handovers; 6. Unanswered questions and methods of research. They concluded that the literature shows handovers are highly sensitive to variations in context and handover activities account for multiple functions within a hospital that range beyond patient safety. Within a highly
differentiated hospital setting, standardizing handovers will need to address the different tensions associated with the diversity of the environment (Cohen and Hilligoss, 2009).

Expanding on previous research, Hilligoss & Cohen (2012) focused on the understudied aspect of “between-unit” handovers. Using the emergency department admission process as the example, they reported on the differing structural features of between-unit handovers which contributed to increased vulnerability of patient safety during these handover events. Citing that approximately one half of hospital admissions in the United States come through emergency departments, resulting in more than 29 million admission handovers annually, the scope of the issue was identified (Hilligoss & Cohen, 2012).

Between-unit handovers within hospitals have significant structural and contextual factors that need to be coordinated. Structural features to consider include: (a) change in patient illness trajectory; (b) irregular occurrence; (c) Change in care required by patient; (d) unit boundaries; (e) interactions between members of different units; (f) different specializations, routines, and physician spaces (Hilligoss & Cohen, 2012).

The contextual factors that challenge the between unit handover that must be considered are: (a) interprofessional differences; (b) unequal distribution of power among units; (c) lack of established relationships among involved parties; (d) infrequent face-to-face communication; (e) lack of awareness of the other unit’s status; (f) the fact that the responsibility and control of patients are transferred separately (Hilligoss & Cohen, 2012).

**Third Level – Assessment of Evidence**

The interest in communication between healthcare providers and the acknowledgement of risk for patients has been a topic of focus since the IOM report
(Wakefield, 2000). Since then, the search has been underway to identify the evidence that will support the development of a means to standardized communication handovers. This portion of the literature review focuses on evidence and best practice standards for communication handover, with attention to recent systematic reviews of both the nursing and physician literature published from 2009 to 2012.

**Physician Focused Literature**

Two systematic reviews from the physician’s literature were found to have similar findings (Arora et al., 2009; Riesenber et al., 2009). Riesenber et al. (2009) completed a systematic review of the residents’ and physicians’ handover literature published in English between 1987 and June of 2008 and focused on communication barriers and strategies. The articles were reviewed by two independent reviewers who used a quality scoring system to assess both the experimental and observational studies. Among 401 publications, 46 articles met inclusion criteria. It was found that 71.7% of these 46 articles were published between 2005 and 2008. Of these, 18 were identified as research studies that were included in the systematic review (Riesenber et al., 2009). The eighteen studies were found to be of poor quality, with no clear identification of best practices for physician communication handovers. The conclusion of this systematic review was that in spite of the known negative consequences for poor physician communication handover, very little research has been completed to identify best practice (Riesenber et al., 2009). The authors called for high quality studies that focused on system factors, and the effectiveness of structured protocols and interventions (Riesenber et al., 2009).
Arora et al. (2009) attempted to focus on hospitalist handovers to identify interventions that were specifically designed to improve handovers at shift change or service change by any health professional (Arora et al., 2009). From 374 articles, 10 met the inclusion criteria. Of these, three were from nursing literature and the remaining seven were tests of technology solutions. Technology solutions were examined as a potential intervention to improve physician handovers. From the review it was concluded that technology solutions offered were not standardized nor commercially available. The lack of recommendations for hospitalist handovers using technology was the result of the lack of evidence-based practice (Arora et al., 2009).

Nursing Focused Literature

Risenberg, Leitzsch & Little (2009) completed a systematic review of the literature looking at nurse handovers in the United States and the use of mnemonics. Among 95 articles, 20 were included in the systematic review with the majority of the publications published since the introduction of the National Patient Safety Goal in 2006. The SBAR (Situation, Background, Assessment, Recommendation) mnemonic was found to be the one most cited, but the authors also noted that there was no evidence that indicated that the mnemonic had been through validation or testing. The authors called for well defined studies that would assess mnemonic effectiveness, elements of the handover that improve patient outcomes, the best mnemonics for different settings and practitioners and identification of the best implementation strategies for the use of mnemonics (Riesenber, Leitzsch, & Little, 2009).

In addition to the reviews completed on the physician literature and the mnemonics used in nursing, Riesenberg and colleagues also completed a systematic
review of the nursing literature in relation to handovers (Riesenberg, Leitzsch, & Cunningham, 2010). Of the 95 articles identified as meeting inclusion criteria, only 20 were nursing research studies. Repeating observations made in the other systematic reviews, it was strongly suggested that there is a lack of quality nursing research on handovers. While the format for handovers (verbal, audio-taped, written) was the topic of study in several of the identified nursing studies, accuracy of content and outcomes were not included. Barriers and facilitators to nursing handovers were identified, but evidence for best practice was not evident. The authors noted that “…there’s little empirical evidence delineating what constitutes best handoff practices” (Riesenberg, Leitzsch, & Cunningham, 2010, p.30).

**Intra-facility Communication Handovers**

Historically the handover literature has focused on the handovers that occur at the change of shift between professionals with the same role. Recently, interest has been expressed in the handovers that occur within a healthcare organization when intra-facility transfers occur, such as between the Emergency Department and in-patient units. This type of handover is the area of interest for this evidence based practice project. Ong and Coiera (2011) identified that the handovers between units present challenges that are not part of the shift handovers. With intra-facility handovers the distinct needs of the specific clinical settings involved in the patient transfer must be considered (Ong & Coiera, 2011).

Two systematic reviews were found that specifically searched for best evidence for intra-hospital inpatient transfers (Ong & Coiera, 2011; Scott, Ross, & Prytherch, 2012). Similar to the other systematic reviews, no evidence was found to define “best
practice” for intra-hospital handovers. Scott, Ross, Penny and Prytherch (2012) did note that in the literature there are recurring themes that establish some guiding principles that can be used as guidance for a handover improvement program, the themes were identified as: structured protocol and information content; IT solutions; formal education; socio-technical approach; continuous quality improvement; cultural issues; improve cooperation; involve patients; indirect functions of handover.

Handover Quality

Foster and Manser (2012) completed a systematic review of the available evidence to determine handover characteristics and subsequent impact on safety outcomes. Handover outcomes were defined as any events that occurred after completion of the handover or were related to patients who had been handed over or their treatment (Foster & Manser, 2012). Eighteen articles were reviewed that reported 37 statistical associations between handover characteristics and outcomes. The only handover characteristic reported in more than one study was a standardized handover sheet. Due to the high heterogeneity of the handover characteristics, only the studies that looked at the outcomes related to the use of a standardized handover sheet were evaluated. Each of the studies involved a different handover sheet; there were no studies analyzing what makes an effective handover sheet. Therefore the results reported were not conclusive regarding the benefits of using a standardized handover sheets to affect handover outcomes (Foster & Manser, 2012).

Level Four – Recommendations Commonly Cited

Systematic reviews identified that there are gaps in the knowledge regarding what constitutes a “quality”, evidence-based handover. Interest in the topic and work around
defining best practice is evident in the literature. There are studies that focused on improving the empirical evidence that could potentially contribute to the search for best practice handover standards. For the purpose of this literature review, these studies were organized into categories of measuring the quality of handovers; potential for electronic adjuncts for handovers; issues with electronic adjuncts for handovers; development of and use of nurse perception instruments to measure quality of handover; and strategies for the implementation of changes in the handover process.

**Measuring Quality of Handovers**

Jeffcott, Evans, Cameron & Ibrahim (2009) proposed that to improve the gaps in knowledge around the concept of handover, it would be important to be able to measure the safety and quality of the handover. Developing a conceptual framework to support further research agendas was undertaken. They proposed a hybrid framework using Donabedian’s model for evaluating quality and a normative model for primary healthcare was proposed and ratified by a group of 25 clinicians, researchers and policy makers. The framework consisted of three handover elements – information, responsibility/accountability and system, in relation to three key measurement elements – policy, practice and evaluation (Jeffcott, Evans, Cameron, Chin, & Ibrahim, 2009). This framework was designed to provide a systematic approach to the evaluation of clinical handovers and a means to measure safety, quality and efficiency benefits of designed interventions. The framework identified key handover concepts and means to investigate them( Jeffcott, Evans, Cameron, Chin, & Ibrahim, 2009).

In 2010 a study was published that aimed to develop and test a rating tool for the quality of patient handoff at care transitions (Manser, Foster, Gisin, Jaeckel, &
The research question was, “What constitutes a safe and effective handoff?” The researchers reviewed existing assessment tools, completed interviews of healthcare providers, and conducted unstructured field observations. This led to the development of a 16-item rating tool that described the handover in terms of information transfer and teamwork. The tool was used for a total of 126 patient handoffs in a tertiary care hospital. Three different clinical settings were used to ensure that the instrument could be used across multiple settings. Each handover was evaluated by three reviewers: the clinician handing off the patient, the clinician taking responsibility for the patient, and a human factors observer. Two analytical steps were completed, specifically a dimensionality exploratory factor analysis and a predictive validity stepwise regression analysis. Three factors that predicted handover quality were identified: information transfer, shared understanding, and working atmosphere. The authors stated in summary that this study has implications for understanding the complex nature of handover quality and how it can be effectively measured (Manser, Foster, Gisin, Jaeckel, & Ummenhofer, 2010).

**Potential for Electronic Adjuncts**

Edwards et al. (2009) completed a qualitative time and motion observational study looking at the inter-clinical communication behaviors, workflows, and the use of information communication technologies (ICTs). Observations were completed over five days in the Emergency Department of a tertiary teaching hospital. Nurses and physicians were observed and several key observations were made. Multi-tasking was observed to greatly impact communication flow, accounting for 17.2% of the observed communication events. Time was lost to interruptions 22% of the time for physicians.
and 20.4% of the time for nursing. Communication occurred in the preferred “face-face” format 70% of the time. The authors noted that ICTs would need to overcome the preference for the face-to-face communication evident in this study environment (Edwards et al., 2009).

Flanagan, Patterson, Frankel and Doebbeling (2009) did an observational study on a computerized patient handover tool (PHT) that pulled information from the patient’s medical record into a printed form that was given to the on-coming physician. It was found that the tool performed well but was limited to the information being entered and available in the electronic medical record. It was noted that 25% of the time there was a need for more information than was available on the tool (Flanagan, Patterson, Frankel, & Doebbeling, 2009).

Benham-Hutchins and Effken (2010) completed a descriptive study to investigate the communication patterns demonstrated by healthcare providers during patient handovers between patient care units. The study was completed in the Emergency Department of a 255 bed urban, university based hospital. Physicians, nurses, a medical social worker and a pharmacist participated. They found that multiple methods of communication were observed, including person to person conversations, over the phone, the paper medical record and the electronic medical record. It was noted that none of the emergency communication networks had a centralized structure. A single provider coordinating the information exchange was not observed. The overall patterns of communication varied with each handover. They also found that the communication patterns used were strongly influenced by the information needs of the staff accepting responsibility of the patient (Benham-Hutchins & Effken, 2010).
Johnson, Jefferies and Nicholls (2012) undertook a qualitative study to identify the scope of information currently being used by nurses at the time of clinical handover and related processes to compare to a generic Nursing Handover Minimum Data Set (NH-MDS) that was created for electronic documentation systems to complement the verbal nursing handover. An observational approach using digital recordings was used that included process (location, team members, and leaders). A total of 195 recordings, across 10 different clinical settings were completed along with observations of handovers and the development of field notes. The content of these handovers was studied and it was determined that there were specific data elements that were included in the NH-MDS that were consistently addressed indicating that the data set captured content from handovers across specialties. It was concluded that the electronically prepared printed summary based upon the NH-MDS would provide a complement to verbal handovers (Johnson, Jefferies, & Nicholls, 2012).

**Issues with Electronic Adjuncts**

Acknowledging that the World Health Organization (WHO) and others promote the use of information technology to improve communication in healthcare, a qualitative study was undertaken to begin to fill the gap in research about the use of information technology during nursing handovers (Staggers, Clark, Blaz, & Kapsandoy, 2011a). This study was designed to explore information management and use of electronic tools by nurses during handover. The study sites were two hospitals in the western United States that have “robust” electronic health records (EHR). A total of 93 end-of-shift handovers completed by 26 nurses on five medical-surgical units were studied. Data collection included observations, field notes, audio-recording and semi-structured interviews. It was
observed that none of the nurses used the EHR as their main source of information for handover even though an electronic handover form was available (Staggers, Clark, Blaz, & Kapsandoy, 2011a).

In a second article expanding on the significance of these findings, it was noted that the fact that nurses continue to rely on paper-based forms is a new and important finding (Staggers, Clark, Blaz, & Kapsandoy, 2011b). The electronic summary forms did not contain the information that the nurses deemed important. Further, the formatting was deemed not user friendly as they could not find the information they were seeking “at a glance”. It was noted that any interface designed for computerized nursing handovers would need to have the ability to highlight information that an individual nurse deemed critical. The interface would need to have the ability to display trends in data with highlighted abnormal findings that were tailored for each patient. The authors concluded that “The results indicate that it is imperative to redesign the electronic summary reports and that different technology is needed to match the way nurses think and do work” (Staggers, Clark, Blaz, & Kapsandoy, 2011b, p.221).

**Measuring Nurse Perception of Handover Quality**

The Clinical Handover Staff Survey was developed in Australia to study the nurses’ perception of handover process strengths and weaknesses (O'Connell, MacDonald, & Kelly, 2008). The instrument was developed based on the literature and in consultation with expert nurses. The survey collects information on demographics, details of the handover process, nurse perceptions and open-ended questions regarding the handover process. In the original study using this instrument, a Mann-Whitney U-test was used to compare differences between the morning and afternoon nursing staff. The
Spearman’s rho was also used to examine correlations between variables. The survey was completed by 176 nurses from 21 different wards. Demographics were collected and identified full time versus part time workers, gender, age, years of experience and length of employment at the organization. Three items with the highest mean scores suggested that nurses positively relate to being able to clarify information that is provided in handover, being provided with enough information about patients, and being able to easily follow the handover information.

Significant differences (p< .05) between the responses of full time and part time nurses, as well as length of employment in the organization and years of nursing experience were found. Full time nurses agreed that they were given irrelevant information during handover compared to part time nurses (p <.05). Nurses with fewer years of employment (p < 0.05) and less years of experience (p <0.01) reported that they were better able to obtain relevant information directly from the patients’ charts compared to those with more years of experience as an RN and longer length of service within the organization. The authors concluded that the study supported previous results regarding nurses’ continued dissatisfaction with the handover process (O'Connell, MacDonald, & Kelly, 2008).

In two studies published in 2011, the Staff Clinical Handover Survey was also used to measure nurse perception (Kerr, Lu, McKinlay, & Fuller, 2011b; Street et al., 2011). Kerr, Lu, McKinlay and Fuller (2011) used the tool to study the handover practices in an acute tertiary hospital in Australia to explore the opinions of clinical nurses regarding the quality of current shift to shift handover practices. Descriptive statistics were used including mean, median, standard deviation and percentages. The
study found that the existing handover practices were time-consuming, lacked patient involvement and essential information, and varied in style. Despite these negative perceptions, it was also noted that 82% of the staff surveyed (153 RNs from 23 wards) expressed reluctance to change current handover style.

The Staff Clinical Handover Survey was completed by 259 nurses in a pre/post pilot implementation of a new bedside handover process using SBAR, active patient checks, and checking of documentation (Street et al., 2011). The survey showed variation in the duration, location and method of handover. Significant differences were seen in the experience of nurses employed full time versus part time. Following implementation of the pilot intervention, significant improvement was demonstrated (Street et al., 2011).

Change Strategies

Dufault, et al. (2010) discussed the use of Roger’s Diffusion of Innovations Theory as a framework for translating research into the development of a standardized handover protocol for use in practice at a Magnet-designated community hospital in the United States. The first three steps of the model were utilized to guide a change in handover practice and included: Identification of the clinical problems related to handovers; Appraisal and evaluation of the theoretical, empirical and clinical evidence; Translation of the evidence into a patient-centered, standardized protocol for nurse-to-nurse shift handovers (Dufault et al., 2010). It was noted that the type of report had a significant effect on the receiving nurses’ ability to plan patient care. Effectiveness and efficiency of handovers improve with structure, verbal face-to-face handovers, and limited distractions and interruptions. The recommendations from the Joint Commission
that handovers should include clear language, a standardized approach, and the use of
effective communication techniques with technology as adjunct were included in the
design considerations.

Dufault developed a protocol for nursing shift handoffs identifying a standard
SBARP format (Situation, Background, Assessment, Recommendation, and Patient).
Each component was further defined to identify those components of patient information
that were to be reviewed in a desired sequence. Expectations for the on-coming and off-
going nurse were identified. The patient component included a meeting with both nurses
and the patient to allow for introductions, an opportunity to identify and discuss patient
concerns, and discussion of the plan for the next shift with the goal of moving the
patient towards discharge or transition to the next level of care (Dufault et al., 2010).

A key component to the development and implementation of this protocol was the
participation of the bedside clinicians in partnership with the nurse researchers. Together
the evidence based practice implementation was coordinated between the reality of the
clinical environment and the empirical evidence. The result was a standard that was
supported and tested by the clinicians and it was noted that expansion of the project into
other settings was in process (Dufault et al., 2010).

Conclusions

In conclusion there are several points from the literature review that contribute to
this project. The first is that despite evidence of the critical nature of communication
handovers, there is no recommended standardized handover format. A second key point
is that nurse handover is embedded in culture and context of the unit work environment
and nurse participation in communication handover solutions is key to adaption and
utility. Frontline nurses need to understand the significance and complexity of handovers. The third key point is that intra-facility communication such as the ED admission handover, occur in complex, interruptive environments and inherently have more risk than shift to shift communication handovers. While the use of the electronic medical record is not within scope for this project, the literature review did reveal that electronic solutions built upon the EMR may have potential. However before they can be developed, the structure, process and outcomes of communication handovers need to be understood from the nurses’ perception in order for the electronic solution to be helpful and adopted into practice.
CHAPTER 3
CONCEPTUAL FRAMEWORK

This evidence based practice project focused on the evaluation of work processes that contribute to the quality and safety of patient handovers that occur between the ED and in-patient environments at the time of admission. The efficiency and effectiveness of these handovers are critical, and are affected by the complexity of the environment. Within the clinical perspective, the measures for evaluating effectiveness are associated with the health system, the institution, and the patient (Aday, Begley, Lairson, & Slater, 2004). To understand the context that contributes to the handovers process, elements from each of these perspectives need to be taken into consideration. Donabedian’s structure, process, outcome (SPO) framework was utilized for identifying the organizational context for this evidence based practice implementation project.

The initial work and presentation of the SPO framework for use with the monitoring of medical care quality was published in 1966 (Donabedian, 1966). Sales (2009) noted that Donabedian’s framework for understanding factors that influence quality of care is widely adopted in health quality improvement (QI) literature. The basic premise of the model can be stated as follows: the structure of health services influences the process of care and together these factors influence outcomes (Sales, 2009). This model assisted in the evaluation of the contextual factors that have been
identified as contributing to the complexity of the handover process. The components of
the SPO framework are interdependent and are linear in arrangement so that each
dimension impacts the next whether positively or negatively (Smitz Naranjo &
Viswanatha Kaimal, 2011).

Dimensions of the SPO Framework

Structure

The structure dimension is defined as the setting where the care is given. The
setting is multi-faceted and includes material and human resources as well as
organizational factors (Smitz Naranjo & Viswanatha Kaimal, 2011). Quality and patient
safety cultures provide context for clinical care and are included in the structural element
for consideration. The structural dimension can be applied at the organizational,
institutional and care delivery unit level depending upon the scope of the desired
improvement. Being able to flex this dimension as applicable makes it possible to
evaluate and improve the effectiveness of care in all types of settings (Aday, Begley,
Lairson, & Slater, 2004). The healthcare environment is complex and the organizational /
unit’s structure, policies, procedures, culture and quality standards need to be considered
in order to develop a comprehensive understanding of current practice. These structural
elements also need to be considered when making recommendations for any process
change (Alvarado et al., 2006; McMurray, Chaboyer, Wallis, & Fetherston, 2010; Van
Eaton, 2010).

The structure dimension includes a variety of elements that were assessed and
understood specific to the Emergency Department and in-patient units. Presented in
descending order from a system to a bed-side perspective, these elemental structural elements were considered:

- Organizational structure
- Quality assurance program
- Level of information technology functionality
- Nursing leadership support
- Practice model
- Nursing unit leadership
- Staffing model
  - Years of experience
  - Degree completion
- Staff participation in unit decision making
- Institutional handover policies
- Established standards in place for handovers
- Staff perception

Understanding the communication handover event and adapting best practices into local contexts, are significant change strategies (Clarke & Persaud, 2011; Nadzam, 2009). Consideration of the structural dimensions provides this contextual assessment.

**Process**

Process is the second dimension of Donabedian’s SPO framework and is described as the intervention that provides patients with an improved outcome (Smitz Naranjo & Viswanatha Kaimal, 2011). It is the manipulation of this intervention, and the structure within which it resides, which has the potential to improve effectiveness and
therefore patient outcomes (Aday, Begley, Lairson, & Slater, 2004). Theoretically, standardizing the process can enhance handovers by providing an opportunity to restructure how they are conducted (Perry, Wears, & Patterson, 2008). In addition to the structure elements already identified, the handover process elements to be considered include communication handover workflows (timing of the report, preparation for the report, length of the report, location where the report occurs); the frequency of handover communication events; the format utilized (verbal, recorded, written, EMR adjuncts); distractions and interruptions; and the complexity of the patient populations involved.

**Outcome**

“Effectiveness concerns the results achieved in the actual practice of healthcare with typical patients and providers…” (Aday, Begley, Lairson, & Slater, 2004, p.57); these results are the outcomes. Donabedian’s framework provides the premise that the structural elements within a healthcare setting have a positive or negative impact on the patient care process which in turn has a positive or negative impact on the patient’s health outcomes (Aday, Begley, Lairson, & Slater, 2004). The outcome of a communication handover event can take many forms. Staff perception of the effectiveness and efficiency of the transition of the patient’s care is one outcome to consider. The patient’s perception of the transition is another. The safety outcome for a communication handover event can be looked at from the perspective of staff perception as well as anecdotal and recorded adverse patient care events attributed to the handover process.

**Linkages**

An overview of the SPO framework dimensions with associated elements to consider for an evaluation of ED admission handovers is presented in Figure 1.
Figure 1. Dimensions and Elements of Donabedian’s SPO Framework

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<th><strong>Structure Elements</strong></th>
<th><strong>Process Elements</strong></th>
<th><strong>Outcomes</strong></th>
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<td>Handover workflows</td>
<td>Staff perception of Effectiveness</td>
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<td>Quality assurance program</td>
<td>for the ED</td>
<td>Efficiency</td>
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<td>Level of information</td>
<td>Handover workflows</td>
<td>Patient safety</td>
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<td>technology functionality</td>
<td>for the in-patient</td>
<td>Patient perception</td>
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<td>Nursing leadership support</td>
<td>unit</td>
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<td>Practice model</td>
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<td>Nursing unit leadership</td>
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<td>Staffing model</td>
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<td>Years of experience</td>
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<td>Degree completion</td>
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<td>Staff participation in unit</td>
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<td>decision making</td>
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CHAPTER 4
PROJECT PLAN AND METHODS

The purpose of this chapter is to describe in detail the project plan and methodology. This is organized by sequenced phases. During Phase 1, an assessment of the organization was completed, guided by the structural and process elements of Donabedian’s structure, process, outcome (SPO) framework. Outcomes refer to the results achieved as a result of the process improvement effort. The baseline status and assessment data are critical for substantiating the need for change, and for evaluating the success of the improvement effort. The intent of this assessment was to become familiar with the organization and verify the baseline; and to identify the focus of a communication handover project. This assessment led to Phase 2 in which the appropriate methods to use for the communication handover process improvement project were determined.

The setting for the project was Sparrow Hospital, located in Lansing Michigan. Founded in 1896, the hospital is a 733 bed facility that is a subsidiary of Sparrow Health System. Affiliated with Michigan State University, the hospital is a community-based, teaching hospital. The Senior Vice President of Patient Care Services and Chief Nursing Officer served as the preceptor for an administrative immersion experience from January – December, 2012.

**Phase 1: Organization and System Assessment**

This phase occurred during the months of January through May, 2012. The organization and system assessment included activities that resulted in the identification of the focus for the evidence based process improvement project. Guided by the SPO
framework, this information was obtained using a variety of assessment techniques: interviews with staff and nursing leaders; review of organizational documents, policies and procedures; and intentional observations within the clinical areas. Each of these activities will be discussed in detail.

**Identification of Interest - Determination of Project Focus**

The concept of communication handovers as a topic of interest for a dissertation project was established prior to the beginning of the immersion experience. Due to the scope and potential for work involving communication handovers, time was spent orientating and becoming familiar with the organization. Designated time was spent with the Chief Nursing Officer (CNO) who served as a preceptor; and opportunities to meet the nursing leadership team to become familiar with nursing priorities were provided. Focused discussions were had regarding the potential for a practice project around the concept of communication handovers. Interest in the topic was articulated and information on the current work in the organization on communication handovers was assessed.

The organization had previously identified communication handovers as a target for process improvement. A project focused on a new format for the bed-side shift report on the in-patient units was underway. Bed-side shift report is a communication handover between nurses at the change of work shifts. The new format included information on patient status, goals and outcomes discussed at the patient bedside, and inclusion and participation of the patient. Plans were in place to start the phased roll-out of this practice change on the in-patient nursing units starting in April of 2012. Nursing leadership was
actively involved in this pending practice change. Interest in the communication handover between nurses at the change of shift was evident.

With the bed-side report project being well underway, consideration of additional points where communication handovers could be improved was explored. An interest in a project looking at the handover between the Emergency Department (ED) and in-patient units at the time of admission to the hospital was expressed by the CNO. As a component of the Emergency Department throughput process, opportunities for improvement in the transition of patients from the ED to the in-patient bed environment were being considered. Discussions with the nursing directors from the Emergency Department, Nursing Operations and Critical Care validated that there was interest to look at the admission handover. This interest led to determining the scope of the project.

**Assessment of Structural Elements**

Structural elements specific to the nursing systems at Sparrow Hospital and relevant to the environment where ED admission handovers occur were assessed. In particular, attention was given to the division of nursing; the units identified as sites for the project; organizational policy and established handover standards; documentation models including the availability of an electronic medical record; quality monitoring structures for handover events; and the culture and context of the environment in regards to ED admission handovers.

**Division of nursing.** Sparrow hospital achieved designation as a Magnet hospital in 2010. This designation is awarded by the American Nurses’ Credentialing Center (ANCC) and recognizes the hospital for nursing excellence. Nurses within a Magnet organization participate in the decisions that impact direct patient care, and are focused
on excellence in patient outcomes. The nursing staff at Sparrow Hospital is represented by the Michigan Nurses Association and the UAW local 4911.

**Characteristics of the units.** The Emergency Department at Sparrow hospital is a Level 1 Trauma Center and has an annual patient volume of 90,000 a year (Sparrow Hospital, 2012). The emergency department has a daily admission rate of 24% which results in approximately 65-70 admissions a day.

The in-patient units that participated in the project were the Cardiac Progressive Care unit on 4 Foster (annual patient volume of approximately 14,000 patient days) and the Cardiac Stepdown unit on 4 South (annual patient volume of approximately 11,000 patient days). All of the units operate 24 hours, 7 days a week. The units are staffed by registered nurses with either an Associates or Bachelor degree in nursing, who typically have a 4:1 patient assignment with support from assistive personnel and unit clerks.

Each of the units has a Nurse Manager and Assistant Department Managers (ADM) who are responsible for the daily operations of the units. The Nurse Managers from 4 South and 4 Foster report to the Director of Nursing for Critical Care. The ED Nurse Manager and ADMs report to the Director of Emergency and Trauma Services.

**Organizational policy, handover standards.** A policy for communication handovers written in 2007, needed to be updated to reflect the organization’s work on communication handovers. Though not included in the policy, it was identified through conversations with nursing leaders that there was a communication handover template at Sparrow that is called the “SBAR”. This is a paper document that uses the acronym frequently cited as a handover adjunct in the literature. SBAR stands for: S – Situation, B-Background, A – Assessment, and R – Recommendation. This paper document resides
in the patient chart and includes patient information that is important to keep in a visible, easily accessible location. During orientation to the organization, it was shared by nursing leadership that the SBAR tool is used to guide the communication handover.

**Documentation, use of an electronic medical record (EMR).** Another structural element reviewed was the documentation model in use within the organization. It was found that while the majority of the organization still works within a paper medical record, the Emergency Department has been using a commercially available ED specific EMR called “the T-system” since 2008. All nursing documentation in the ED is entered into this system. It was found, however, that there was limited access to this information on the in-patient units. The unit charge nurses have access and can print a copy of the ED nursing notes, while staff nurses cannot.

A comprehensive EMR implementation project was underway at the organization with a planned system wide implementation of EPIC scheduled for go-live on December 1, 2012. EPIC is an integrated software package for clinical, access, and revenue functions, suitable for mid-size and large medical groups, hospitals and integrated healthcare. With implementation, full electronic processes to include physician order entry, nursing documentation, and medication bar code scanning would be activated, allowing the ED and the in-patient units to use the same documentation system, to include unlimited access to the patient’s medical record.

**Quality monitoring.** The structure of the quality monitoring for communication handovers was investigated. Discussions with the Directors revealed their perceptions that adverse events had occurred that could potentially be attributed to poor communication handovers. However, no processes were found to be in place that would
monitor for communication failures. Despite several queries to find Quality and/or Risk data that would provide a baseline for the project, no records of adverse events associated with poor ED admission handovers were available.

Since establishing a baseline assessment of adverse events associated with communication handovers was desirable, a process was developed and implemented to assess for adverse events associated with ED admission handovers. A log was developed for the patient placement department to use for one month to record how often an admitted patient from the ED subsequently required a transfer to a higher level of care within twelve hours of admission to an in-patient unit. At the end of the month, the audit revealed that there were four patients out of the approximately 1800 admissions to in-patient units (60 – 65/day) from the ED that required a transfer to a higher level of care within 12 hours of admission to the in-patient unit. One of the four patients required transfer to intensive care, the other three were moved from medical-surgical units to either Cardiac Progressive Care or the Cardiac Stepdown units. A manual review of the paper medical records was not undertaken due to issues with manual extraction and no clear way to identify what communication did or did not occur.

Culture and Context. It was discovered during the course of assessment that there was a well defined difference of opinion regarding the ED admission handover process in place. Emergency Department leadership and staff were very articulate in their expectation that the medical record be used for patient information and that the handover event should only need minimal time and interaction to be completed. On the other side, in-patient staff and leadership expressed concern over the safety of the process and validity of the information exchanged. When asked, none of the staff from the ED could
articulate what the inpatient environment is typically like at the time of a patient admission from the ED; and likewise, in-patient nurses were not aware of the typical ED environment when admission to an in-patient unit is necessary. Getting the patient out of the ED quickly was the primary focus noted on the sending side, while balancing a new arrival and trying to determine the need to know information was the focus on the in-patient side.

**Assessment of Process Elements**

To understand the admission process, and the role of communication handovers in that process, time was spent developing an understanding of how admissions to an in-patient unit from the emergency department were actualized in this organization. This process involves the interaction between three key departments: patient placement, the emergency department and the receiving in-patient unit. To develop an understanding of this complex process, time was spent in inquiry and observation. Discussions with the Directors, Managers and staff within these departments as well as the CNO and other nursing leaders were held. Attendance at organizational meetings concerned with capacity management and throughput in the ED also contributed to learning.

Observation time was spent in both the Emergency Department and on the in-patient units. Approximately eight hours were spent monitoring the ED staff calls to give admission handovers. Approximately 20 admission handovers were observed from the ED perspective. During the observations, it was noted that frequently the Assistant Department Manager or Charge nurse would call to facilitate the admission. When asked a question the common response was “Did you look at the T-system?” When the ED nurse was unable to answer a question the response was often, “I didn’t take care of this
patient”. During another observation period in the ED, twelve ED admissions were accompanied to the in-patient locations in order to monitor the processes in the ED and the receiving in-patient unit. Emergency Medical Technicians (EMTs) are employed as technicians in the ED and all of the admissions observed were transported by EMT staff. On arrival to the in-patient units there was a period of time upon arrival before the in-patient staff arrived in the room to assist.

A summary of the assessment of handover activities follows. The process starts when a request is made to admit a patient from the ED. The patient placement department determines a location where an appropriate bed is available and sends a page to that in-patient unit. The in-patient charge nurse receives the page and has a period of 15-30 minutes to log into the ED electronic documentation system to review the patient information and determine if the patient meets criteria for admission to that unit. At this time, there may be a patient with a scheduled discharge still occupying the assigned in-patient bed. The Emergency Department is not notified of the bed assignment until after the designated bed has been determined to be available. This notification occurs with a second page from the patient placement department that informs the ED of the assigned bed, and informs the in-patient charge nurse that the ED has been notified of the bed assignment.

At this point, the ED is preparing the patient and the medical record for transition to the in-patient environment. On the receiving in-patient unit, the charge nurse is accessing and printing a copy of the ED documentation and assigning the patient to an in-patient nurse who will assume responsibility for the patient upon arrival. It is the expectation that the assigned in-patient nurse reviews the ED documentation and
determines if there are any questions regarding the patient status, care plan, etc. The ED nurse waits for approximately 15-30 minutes before calling to allow for the in-patient nurse preparation for handover.

When the ED nurse calls to “give report” they ask the in-patient nurse, “Do you have any questions?” Any information exchanged from that point forward is driven by in-patient nurse inquiry. During the course of observation, it was noted that there was no structure or script for the information that is reviewed. When asked about the use of the SBAR for communication handover, the ED RNs would acknowledge that it was an expectation but that the form did not function well in the ED environment. The paper SBAR form was observed to be placed on each admission chart, but no patient information had been manually added. After the phone conversation, the patient is transported to the in-patient unit. The technicians in the Emergency Department are trained EMTs and do a majority of the admitted patient transports. It was observed that there is little information exchanged between the EMT and the RN upon arrival, and introductions of the patient to the new nurse were variable and inconsistent.

Several issues were identified with this admission process by the in-patient nurses. In addition to organizational oversight, the charge nurses also have a patient assignment. If a notification page regarding an ED admission occurs while involved in patient care activities, there is a delay in accessing the ED patient’s information. When the in-patient charge nurse receives the page, there is a period of 15-30 minutes to log into the ED electronic documentation system to review the patient information and determine if the patient meets criteria for admission to that unit. Only the charge nurse has the ability to access and print a copy of the ED electronic record. This means another
handover actually occurs between the charge nurse and the nurse assigned, even before any communication from the ED. When the ED nurse calls, it is not unusual for there to have been no time for the assigned nurse to have reviewed the patient information.

**Phase 2: Development of Project Plan - Identification of Methods**

The development of the project plan occurred between May and August of 2012. During this phase, a refined literature review was completed to specifically focus on ED Admissions and Intra-facility communication handovers. The CNO identified the two nursing units with a predictable high volume of ED admissions as units for participation in the project: the Cardiac Progressive Care unit on 4 Foster and the Cardiac Stepdown unit on 4 South.

**Staff Participation**

Staff participation was identified as a key method to develop mutual understanding of the complexity for ED admissions from the perspectives of both the ED and in-patient nurses. Staff participation was also identified as a key element in obtaining staff engagement and support for any proposed changes to the ED admission handover process. Meetings were held with the department directors and nurse managers to discern interest and support for the project involving their clinical areas, including the participation of staff. The directors and managers all voiced support as well as enthusiasm for the proposed project.

As a Magnet organization with an active shared governance structure, the clinical units have a council composed and led by staff nurses that focus on practice and quality issues within their clinical areas. It was determined that the recruitment of staff to participate on the project team would be from these unit based councils (UBCs). The
project was presented to the ED staff at a UBC meeting by the project leader. In-patient staff was approached for participation by their nurse managers.

With a comprehensive organizational assessment and a review of the relevant literature as a context, the follow project methods were developed.

**Nursing Staff Perceptions**

From the literature, it was found that context and culture around nursing report is a critical element to consider. Comprehension of the complexity of the practice is imperative and the focus initially should be on developing an understanding of the existing handover process and opportunities for improvement (Clark & Peraud, 2011). Two instruments were found that were identified as being a means to assess nurse perception of handover and quality of handover. It was determined that the instruments would be distributed to all staff on the three nursing units and collected over a defined period of time, providing important assessment data regarding current context and culture on the project units. It was anticipated that the results would further solidify the motivation for the process improvement by promoting dialogue and shared understanding of perceptions.

**Handover Quality Rating Form.** While metrics for measuring the effectiveness of communication handovers have thus far remained elusive, work has been done to develop a rating tool that can be utilized to measure the quality of the patient handover (Manser, Foster, Gisin, Jaeckel, & Ummenhofer, 2010). Permission to use the instrument was made through e-mail communication. Permission (Appendix A) was granted and a copy of the tool was provided (Appendix B).
Developed at the University of Aberdeen in the United Kingdom, the Handover Quality Rating Form was developed to be able to measure the quality of a handover in a variety of practice settings and as a self-assessment by the clinicians involved. The tool was piloted during 126 handovers performed in three different clinical settings: paramedic to emergency department staff, anesthesia provider to post-anesthesia care unit (PACU), and PACU nurse to in-patient nurse. Each handoff was measured independently by three reviewers, the clinician handing off the patient, the clinician accepting responsibility for the patient and a human factors observer (Manser, Foster, Gisin, Jaeckel, & Ummenhofer, 2010).

Two analytical steps were completed by the developers, dimensionality of the rating tool and predictive validity of the rating tool. Exploratory factor analysis revealed three factors that accounted for 49.96% of the variance: (a) information transfer which is concerned with the technical aspects of transmission and organization of the handover information; (b) shared understanding between the sender and the receiver of the information; and (c) working atmosphere which is concerned with the environment within which the handover occurs (teamwork, tensions, respect for the patient) (Manser, Foster, Gisin, Jaeckel, & Ummenhofer, 2010).

These three factors all had good predictive validity as determined by correlational and multiple regression analyses. Information transfer \( (r = 0.54, p \leq 0.001) \) showed the highest correlation with perceived handover quality. Shared understanding \( (r = 0.040, p \leq 0.001) \) and working atmosphere \( (r = 0.19, p \leq 0.01) \) followed. The first step of a stepwise regression analysis included the context variables, and demonstrated the same relationship between the factors and perceived quality of handoff: information transfer.
(β = 0.59, p ≤ 0.001), shared understanding (β = 0.28, p ≤ 0.001) and working atmosphere
(β = 0.16, p ≤ 0.01) (Manser, Foster, Gisin, Jaeckel, & Ummenhofer, 2010).

**Clinical Handover Staff Survey.** This instrument was developed to gather
information from nurses on their perceptions of the shift to shift handover process
(O’Connell, MacDonald, & Kelly, 2008; Street et al., 2011). Developed by nurse
researchers at Deakin University in Victoria, Australia, the use of the instrument and
results has been published for three separate studies on nurse perception of shift to shift
handovers (Kerr, Lu, McKinlay, & Fuller, 2011a; O’Connell, MacDonald, & Kelly, 2008;
Street et al., 2011). Consisting of three sections, the tool collects information on
demographics, current handover structure, and perceptions of the shift to shift handover.
Non-parametric tests were used to compare differences between groups of nurses
(O’Connell, MacDonald, & Kelly, 2008). Differences in perceptions were identified
based upon years of experience and number of hours worked. Aspects of shift handover
that could be improved were identified and included: (a) the subjectivity of the handover;
(b) the time taken to conduct handover; (c) repetition of information included in the
handover that was available in documentation; and (d) getting handover from someone
who has not been responsible for providing care to the patient (O’Connell, MacDonald, &
Kelly, 2008).

In order to use The Clinical Handover Staff Survey for this project, permission
was sought and granted (Appendix C). Permission was also granted to make minor
modifications to the language of the survey to suit the context of the project. Changes to
the survey included adding academic level of preparation to the demographic information
(Section A); and changing the focus of the type of handover from the original assessment
of handovers from one shift to the next shift, to the handover between nurses from an ED to an inpatient unit. The second section (Section B) on current handover structure was modified to represent the clinical site. The perception survey (Section C) as reported by Kerr et al. (2011), was used as the template for the survey to be administered to the inpatient nursing staff on 4 South and 4 Foster (Appendix D). The perception survey was repeated with minor modifications to capture the ED nurse perceptions as the nurse giving instead of receiving the handover (Appendix E).

Project Team Meetings

With a comprehensive organizational assessment, an assessment of the staff nurses’ perception of current handover processes within the organization, and a review of the relevant literature as a context, a series of six team meetings were planned. The agendas were pre-determined and specifically established to guide the review of the evidence related to ED admission handovers within the organization. The meetings were designed to facilitate the process improvement project related to ED-to-inpatient unit handovers and included review of the organizational assessment, reflection among the staff to identify and discuss staff issues, a review of results of the staff perception surveys, a review of literature on handovers, and the subsequent development of recommendations aimed at improving the ED admission handover process.

This chapter has summarized the findings from the organizational assessment leading to clarification of the focus of this communication handover project. The assessment led to Phase 2 in which the appropriate methods to use for the communication handover process improvement project were determined. Implementation of the
methodology occurred between September – October, 2012. The results are presented in the next chapter.

Institutional Review Boards

The project proposal was submitted for expedited review at Grand Valley State University and at Sparrow Hospital. Exempt status for the process improvement project was granted at both institutions. The proposal was also submitted and approved as an evidence based practice project to the Nursing Research and Evidence Based Practice Committee at Sparrow.
CHAPTER 5

RESULTS

This chapter presents the results of the project, organized by the steps of the methodology. The evidence on ED admission handovers included the applicable structural components of the organization which included unit culture and context as well as current organizational policy. The process components were reviewed from the perspective of current workflows, identification of workflow issues as well as compliance with organization handover expectations. Staff identification of handover process issues, literature review, handover perceptions surveys and surveys on the perception of handover quality were all reviewed.

Nursing Staff Perceptions

The Clinical Handover Staff Survey and a Handover Quality Rating Form were made available as paper documents in the clinical areas for a period of three weeks. The surveys were accompanied by a cover letter (Appendix F) and a return envelope was provided. Since the Handover Quality Rating Form was designed as a self-report to be completed for individual handover events, extra copies were made available in the clinical units and staff was made aware that this form could be completed for more than one handover event. Each unit was provided with a collection box and the department managers assisted with the oversight of the survey process. The surveys were collected and evaluated prior to the initiation of the team process improvement project. The results of the two surveys used to assess nursing perception on handovers and handover quality are as follows.
Clinical Handover Survey

The purpose of the Clinical Handover Survey was to assess staff perception of the current ED admission handover process. It was completed by a total of 54 RN staff, 20 from the Emergency Department and 34 from the inpatient units. Basic descriptive statistics were run on the demographic and current process information. Demographic information including years of RN experience, length of employment at the organization, highest educational degree and employment status is presented in Table 1.

It is interesting to note some differences between the nursing staff from the ED and the in-patient units, particularly the years of experience and the highest level of education completed. The in-patient staff reported a higher proportion of inexperience with 64.71% having five years or less experience as an RN, compared to 25% of the responding ED staff. However, the in-patient nursing staff had a higher percentage of staff prepared at the baccalaureate level with 52.94% compared to 20% of the ED staff.
Table 1.  

*Demographic Information*

<table>
<thead>
<tr>
<th></th>
<th>Emergency Department (n=20)</th>
<th>In-patient units (n=34)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Years as Registered Nurse</strong></td>
<td><strong>Frequency</strong></td>
<td><strong>Percent</strong></td>
</tr>
<tr>
<td>5 years or less</td>
<td>5</td>
<td>25.00</td>
</tr>
<tr>
<td>Between 6-10 years</td>
<td>8</td>
<td>40.00</td>
</tr>
<tr>
<td>Between 11-15 years</td>
<td>4</td>
<td>20.00</td>
</tr>
<tr>
<td>Between 16-20 years</td>
<td>3</td>
<td>15.00</td>
</tr>
<tr>
<td><strong>Years at the Organization</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 years or less</td>
<td>11</td>
<td>55.00</td>
</tr>
<tr>
<td>Between 5-10 years</td>
<td>6</td>
<td>30.00</td>
</tr>
<tr>
<td>Between 11-15 years</td>
<td>2</td>
<td>10.00</td>
</tr>
<tr>
<td>Between 16-20 years</td>
<td>1</td>
<td>5.00</td>
</tr>
<tr>
<td>Between 31-35 years</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>Highest Degree Earned</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Associate Nursing Degree</td>
<td>14</td>
<td>70.00</td>
</tr>
<tr>
<td>Baccalaureate Nursing Degree</td>
<td>4</td>
<td>20.00</td>
</tr>
<tr>
<td>Non-nursing Baccalaureate</td>
<td>1</td>
<td>5.00</td>
</tr>
<tr>
<td>Masters other than Nursing</td>
<td>1</td>
<td>5.00</td>
</tr>
<tr>
<td><strong>Current Position</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff Nurse</td>
<td>20</td>
<td>100.00</td>
</tr>
<tr>
<td><strong>Employment Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full Time</td>
<td>10</td>
<td>50.00</td>
</tr>
<tr>
<td>Part Time</td>
<td>9</td>
<td>45.00</td>
</tr>
<tr>
<td>Float Pool</td>
<td>1</td>
<td>5.00</td>
</tr>
</tbody>
</table>
Current process information was also evaluated. Information on the frequency of methods used for conducting the handover from the ED to the inpatient unit is summarized in Table 2. The RN’s perception of the method used most frequently was verbal report by means of telephone at 81.48%. Use of the EMR (electronic medical record) was rated at 44.44% and the use of the organizational “SBAR” tool was identified as only being used 3.7% of the time for ED admission handovers.

Table 2.

<table>
<thead>
<tr>
<th>Methods</th>
<th>Frequency</th>
<th>Total Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal by Telephone</td>
<td>44</td>
<td>81.48</td>
</tr>
<tr>
<td>Verbal Face to Face</td>
<td>1</td>
<td>1.85</td>
</tr>
<tr>
<td>Structured from SBAR handover tool</td>
<td>2</td>
<td>3.70</td>
</tr>
<tr>
<td>Using the EMR as a guide</td>
<td>24</td>
<td>44.44</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>7.40</td>
</tr>
</tbody>
</table>

*Note.* Will not equal 100% because more than one option could be selected

Patient involvement in the admission handover process was explored by noting the current state perceptions and desired state responses as noted in Table 3. Current state identified that there was no patient involvement 61.11% at the time of the handover, although when asked how the staff would like to see the patient involved, 59.26% identified that completing introductions between staff upon arrival to the in-patient unit would be desirable.
Table 3.

Perception of Patient Involvement

<table>
<thead>
<tr>
<th>Method</th>
<th>Current State</th>
<th>Desired State</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percent</td>
</tr>
<tr>
<td>Report at patient bedside</td>
<td>5</td>
<td>9.26</td>
</tr>
<tr>
<td>Introduction to staff on arrival unit</td>
<td>19</td>
<td>35.19</td>
</tr>
<tr>
<td>No patient involvement</td>
<td>33</td>
<td>61.11</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>9</td>
</tr>
</tbody>
</table>

Note. Will not equal 100% because more than one option could be selected.

The Clinical Handover Survey also included 17 statements that staff responded to using a seven-level Likert scale: 1. Strongly Disagree; 2. Disagree; 3. Slightly Disagree; 4. Neither Disagree or Agree; 5. Slightly Agree; 6. Agree; 7. Strongly Agree. Mean scores were calculated using this ranking system for each individual perception statement on the Clinical Handover Survey. There were adaptations made to the instrument. The focus of the type of handover of the original assessment was handovers from one shift to the next shift. This was changed to the handover between nurses from an ED to an inpatient unit. Fifteen of the seventeen items were different on the instruments for the ED and the instruments for the in-patient staff. The wording reflected the unit context for each.

Figure 3 presents the ED mean scores in the order of ranking from strongly agree to strongly disagree. It is interesting to note that the statements with the highest level of agreement by the ED staff were: they are prepared to answer questions, with a mean score of 6.58; and they are familiar with the course of the patient’s care with a score of 6.26. This is in stark contrast to the stated perception of the in-patient members of the
staff team who identified frustration with getting admission handover from ED staff members who were unfamiliar with the patient.

The statement ranked at the highest level of disagreement by the ED staff is “in-patient staff readily available” with a mean score of 2.89. This supports the key issue identified by the ED staff members on the project team which was the perception that unit staff do not assist when the ED arrives on the in-patient unit.

Figure 2. Mean scores ED Nurse Perception of Admission Handover

![Bar Chart: Emergency Department Nurse Perception of ED Admission Handover]

Figure 3 presents the mean score from the In-Patient nurses in the order of ranking from strongly agree to strongly disagree. It is interesting to note that there are no statements on the Clinical Handover Perception survey that the in-patient staff ranked strongly agree. These mean scores also coincide with the key issue identified by the in-
patient members of the project team which was their perception that they frequently get admission handover from a nurse who is unfamiliar with the patient.

Figure 3. Mean scores of In-Patient Nurse Perception of Admission Handover

<table>
<thead>
<tr>
<th>Perception</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keep mind focused</td>
<td>5.24</td>
</tr>
<tr>
<td>Important information not given</td>
<td>4.64</td>
</tr>
<tr>
<td>Easy to follow</td>
<td>4.48</td>
</tr>
<tr>
<td>Obtain information from chart</td>
<td>4.39</td>
</tr>
<tr>
<td>Opportunity to discuss</td>
<td>4.39</td>
</tr>
<tr>
<td>Handover interrupted</td>
<td>4.33</td>
</tr>
<tr>
<td>Information subjective</td>
<td>4.18</td>
</tr>
<tr>
<td>Opportunity to ask questions</td>
<td>4.15</td>
</tr>
<tr>
<td>Able to clarify</td>
<td>4.15</td>
</tr>
<tr>
<td>Contact ED nurse for further info</td>
<td>4.00</td>
</tr>
<tr>
<td>Duration appropriate</td>
<td>3.79</td>
</tr>
<tr>
<td>Information up to date</td>
<td>3.52</td>
</tr>
<tr>
<td>Provided sufficient information</td>
<td>3.42</td>
</tr>
<tr>
<td>Information given not relevant</td>
<td>3.21</td>
</tr>
<tr>
<td>Processes promote safety</td>
<td>2.85</td>
</tr>
<tr>
<td>Able to check patient</td>
<td>2.62</td>
</tr>
<tr>
<td>Patient contributes</td>
<td>2.03</td>
</tr>
</tbody>
</table>

Proportions of responses between the years as RN and highest degree earned were analyzed for significant differences for the ED staff and In-patient staff groups. Years as an RN was put into three categories: Less than or equal to 1 year = 1; greater than one year, but less than or equal to five years = 2; greater than 5 years = 3. In order to maximize cell count for analyses, the 1-7 Likert scale was collapsed as follows:
Strongly Disagree, Disagree, Slightly Disagree = 1
Neither Disagree or Agree = 2
Strongly Agree, Agree, Slightly Agree = 3

Fisher’s exact test was used to account for small sample sizes. Fisher’s Exact test is used to examine the significance of an association between two kinds of categorical data and is valid for small sample sizes (Munro, 2001).

Years as an RN had no significant effect on the perspective of Emergency Department nurses. Years as an RN had significant effect on in-patient nurses’ perspective of having the ability to clarify information (p = 0.0168), to ask questions about things they do not understand (p= 0.0427), and feeling that important information is not given to them (p = 0.0148). These three questions can all be associated with the Joint Commission’s NPSG on communication handovers that calls for the opportunity to verify information. It is noted that the more experienced RNs are less satisfied with the ability to verify information and felt more strongly that important information is not being shared than less experienced RNs, especially novice nurses with a year or less of experience (Table 4).
Table 4.

*In-Patient -Years as an RN*

<table>
<thead>
<tr>
<th>Perception Statement</th>
<th>Mean Scores</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>≤ 1 year (n=8)</td>
<td>1-5 years (n=1)</td>
</tr>
<tr>
<td>I am able to clarify information that is provided to me.</td>
<td>2.75</td>
<td>2.23</td>
</tr>
<tr>
<td>I have the opportunity to ask questions about things I do not understand.</td>
<td>2.75</td>
<td>1.92</td>
</tr>
<tr>
<td>I feel that important information is not given to me.</td>
<td>2.14</td>
<td>2.33</td>
</tr>
</tbody>
</table>

*Note.* Disagree = 1 to Agree = 3. Fishers Exact Test

*p<0.05

Highest degree earned was categorized as follows: Associate Nursing Degree or Nursing Diploma = 1, and Baccalaureate, Masters or Doctorate Degree = 2. The collapsed rating system was also used. Fisher’s exact test was used to account for small sample sizes.

Highest degree earned had no significant effect on the perspective of Emergency Department nurses. However highest degree earned did have a significant effect on the in-patient nurses’ perspective of having the opportunity to ask questions about things they do not understand (p = 0.028) and the feeling that important information is not given to them (p = 0.038). Associate degree nurses disagreed that they had the opportunity to ask questions while Baccalaureate degree nurses’ perceptions were that important information was not provided to them (Table 5).
Table 5.

*In-patient – Highest Degree Earned*

<table>
<thead>
<tr>
<th>Perception Statement</th>
<th>Mean Scores</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADN or Diploma (n=14)</td>
<td>BSN or MSN (n=6)</td>
<td></td>
</tr>
<tr>
<td>I have the opportunity to ask questions about things I do not understand.</td>
<td>1.87</td>
<td>2.61</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have the opportunity to ask questions about things I do not understand.</td>
<td>2.24</td>
<td>2.56</td>
</tr>
</tbody>
</table>

*Note.* Fishers Exact Test  
*p<0.05*

Two of the seventeen perception statements were the same on the Clinical Handover Survey within the ED and in-patient versions. These statements were evaluated to determine if the department had a significant effect on the nurses’ perception.

Analysis of the statements revealed that the department had a significant effect (p = 0.003) on the nurses’ perspective on whether the ED admission handover processes promoted patient safety. The reported mean score for the ED was 4.11 (using the 7 point scale) and the in-patient mean score was 2.85. There was a significant difference between the perception of the in-patient nurses and the ED nurses with the in-patient nurses identifying less confidence in the safety of the current ED admission handover process, p = .003  χ² =11.25.

**Handover Quality Rating Form**

The *Handover Quality Rating Form* was utilized by staff nurses to evaluate 64 admission handover events, as a self-report tool. The staff were asked to complete the tool for each individual ED admission handover event. The tool provided the staff the ability to identify if they were on the sending (Emergency Department) or the receiving...
(In-patient) side of the process. Extra forms were made available in the participating units and staff were not given any limitations on the number of handover events they could evaluate. A total of 64 handover events were evaluated, 35 from the in-patient nurse perspective and 29 from the ED nurse perspective. This instrument contains eighteen statements that indicate quality components of a handover event. The eighteen statements are grouped into categories of Conduct, Teamwork, Quality and Circumstances. The Handover Quality Rating form was analyzed using the following four-level Likert scale, to indicate level of agreement with the quality rating statement: Yes = 4; Rather Yes = 3; Rather No = 2; and No = 1. Mean scores were calculated using this ranking system for each individual statement. Proportions of responses between the Emergency Department and In-patient staff were analyzed for significant differences. Fisher’s Exact test was used to account for small sample sizes. Significant differences between the ED and In-patient nurse perceptions on handover quality were found for 15 of the 18 rating statements (Table 6). For each of the quality rating statements that demonstrated a significant difference, the in-patient staff nurses identified less satisfaction with the quality of the handover process than did the ED staff nurses. It should be noted that there were no significant differences found for the ratings on the statements:

- It was easy to establish contact at the beginning of the handover.
- The person handing over the patient was under time pressure.
- The person taking on responsibility for the patient was under a time pressure.
Table 6

Mean Scores/ Fisher’s Exact Test p-values for the Handover Quality Rating Form

<table>
<thead>
<tr>
<th></th>
<th>In-Pt (n=35)</th>
<th>ED (n=29)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Conduct of Handover</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The handover followed a logical structure.</td>
<td>2.69</td>
<td>3.52</td>
<td>.0028</td>
</tr>
<tr>
<td>The person handing over the patient continuously used the available documentation.</td>
<td>2.06</td>
<td>3.48</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Not enough time was allowed for the handover.</td>
<td>2.47</td>
<td>1.46</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>All relevant information was selected and communicated.</td>
<td>2.06</td>
<td>3.89</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Priorities for further treatment were addressed.</td>
<td>2.11</td>
<td>3.71</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>The person handing over the patient communicated assessment of the patient clearly.</td>
<td>1.91</td>
<td>3.85</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Possible risks and complications were discussed.</td>
<td>1.97</td>
<td>3.35</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td><strong>Teamwork</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It was easy to establish contact at the beginning of the handover.</td>
<td>2.67</td>
<td>2.79</td>
<td>0.1797</td>
</tr>
<tr>
<td>There were tensions with the team during handover.</td>
<td>1.97</td>
<td>1.81</td>
<td>0.0019</td>
</tr>
<tr>
<td>Too much information was asked for.</td>
<td>1.37</td>
<td>2.10</td>
<td>0.0018</td>
</tr>
<tr>
<td>Question and ambiguities were resolved.</td>
<td>2.44</td>
<td>3.46</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>The team jointly assured that the handover was complete.</td>
<td>2.49</td>
<td>3.78</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td><strong>Handover Quality</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Documentation was complete</td>
<td>2.80</td>
<td>3.68</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>There was too much information given.</td>
<td>1.31</td>
<td>1.67</td>
<td>0.0304</td>
</tr>
<tr>
<td>Too much information was asked for.</td>
<td>1.46</td>
<td>1.81</td>
<td>0.0094</td>
</tr>
<tr>
<td>The patient’s experience was considered carefully during the handover.</td>
<td>2.09</td>
<td>3.40</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td><strong>Circumstances of the Handover</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The person handing over the patient was under time pressure.</td>
<td>3.40</td>
<td>2.71</td>
<td>0.0645</td>
</tr>
<tr>
<td>The person taking on the responsibility for the patient was under a time pressure.</td>
<td>2.63</td>
<td>2.43</td>
<td>0.1975</td>
</tr>
</tbody>
</table>

*Note.* Fishers Exact Test. Comparison of the proportion of responses (agreement / disagreement) between groups. 4 = yes to 1 = no.
*p<0.05*
Staff Participation

Involvement of the nursing staff in this project was key. Staff participated in a variety of ways. Staff members allowed the DNP student to shadow them during their work providing the opportunity to observe them actively engaged in the ED admission handover process and to talk about handovers from their perspective as a bedside care provider. During staff meetings and unit based council meetings where the concept of an evidence-based project looking at ED admission handovers was introduced, staff responded with interest and enthusiasm and provided feedback that was used to develop the project plan.

Project Team Meetings

Six meetings were planned to guide the staff through an evaluation of ED admission handovers within their organization. Objectives and agendas were determined as part of the project planning. Arrangements were made with the nurse managers to establish a time and set location for the meetings. A conference room on 4 Foster was made available. Tuesday mornings from 0730-0930 were selected as the day and time. This timing allowed for the participation of both the night and day shift staff. The meetings began on September 25, 2012 and concluded on October 30, 2012.

A total of seventeen staff members participated in the project team meetings. Representatives from all three clinical areas were present at each meeting. Staff in attendance varied between a low of four to a max of ten, with the average number at each meeting of seven. Mandatory staff training classes for the planned EPIC implementation started at the same time as the project team meetings. Required EPIC training, work schedules and unit staffing needs contributed to the variable attendance.
Project Team Meeting One

At the first meeting, an overview of the project with the objective of performing a collaborative evidence-based review of the ED admission handover process was presented. The primary objective for this meeting was to begin the process of creating a team from a group of individuals. This initial meeting focused on a team building exercise and establishing the vision for the work. An exercise was completed where an ED staff member paired up with an in-patient staff member. Each interviewed the other, learning names, length of service at Sparrow, clinical background, with the objective of seeking a common or shared interest or experience. At the time of introductions, each member of the pair introduced the other to the group. The staff fully participated in this exercise and began the process of building relationship with each other.

Explanation of the facilitator’s role and contributions toward the project were presented. It was explained that the facilitator would initiate and guide the discussions, using key findings from the organizational assessment and the results of the survey instruments; facilitate the review of the literature; and guide the development of process change. The facilitator role was strictly for facilitating the project meetings; outcomes and decisions were the staff participants’ responsibility. It was understood that the facilitator would challenge and redirect any decisions that were not supported by evidence of best practice, as well as any discussions that were not collaborative or were non-productive. The facilitator was responsible for team communication and record keeping of the proceedings. The facilitator also made a commitment to summarize the outcome of the team’s work and to coordinate distribution of the team’s decisions to nursing leadership. Information was exchanged that allowed for the establishment of an
email distribution list as a communication channel and team ground rules were established:

- Start time 0730. Meeting canceled if facilitator not present by 0740, with follow up e-mail communication to be expected.
- Primary focus on patients and their safety
- Rules of engagement: Seek to understand the “other side”; ask questions, seek clarification, validate assumptions
- In-put from peers not able to attend will be sought.
- Meeting is a “safe place”

**Project Team Meeting 2**

Meeting 2 was focused on a review of current state and involved the creation of a current state process map for an ED admission from the perspective of both the ED and in-patient staff. At this meeting, the staff began to open up and share with each other about the unknown differences and barriers that are part of the ED admission handover workflows. At this meeting, each group had the opportunity to identify what they perceived to be a key issue(s) with the process that was in place.

**Key issues.** Key issues from both ED and in-patient perspectives were presented. The RNs from the ED identified their biggest issue was not getting any help or acknowledgement when arriving on the unit with an admission. The ED staff shared their perception that in-patient staff were standing at the desk, aware that they had arrived, yet they had to wait for assistance and equipment to complete the care transition. The RNs from the in-patient units identified that their key issue was frustration during the
handover report when the ED nurse asks, “Do you have any questions?” and then in response to questions, states, “I don’t know, I haven’t been taking care of this patient”.

Almost immediately a general lack of awareness regarding the difference in the care environments was discovered. Discussions ensued where differences were explored. This contributed to the staff beginning to develop an appreciation for the different challenges encountered in the ED and in-patient environments and the complexity of the ED admission handover process.

**Project Team Meeting 3**

The agenda for this meeting involved a literature review. A range of literature was selected with the intent to provide information on the state of knowledge regarding communication handovers. The literature reviewed by the staff team is listed in Appendix G, including the citation, brief description, and key findings. The staff were divided into groups of two or three, and given an article to review. They were instructed to focus on the background and significance, as well as the discussion sections in the articles. The objective was for the groups to summarize the key points that they derived from the articles to share with the team.

This activity required a fair amount of facilitation. It quickly became apparent that there was not a lot of experience within the team on critiquing research literature. In retrospect, the assessment failed to identify that this might be an issue. If known, a different plan for the literature review could have been developed. As it was, the small groups were disbanded and as a whole the facilitator led them through the articles. While the vision for a staff-led discussion did not materialize, a good discussion led by the facilitator on the concept of handovers based upon the evidence within the literature did
occur. At the end of the meeting, the team did identify five key points that they wanted on record as their learning from the literature review:

- The most reliable method of report (handover) in regards to retention of information is a written report with a verbal reinforcement.
- Poorly performed communication handovers place the patient at risk.
- Communication handovers are increasing in frequency between physicians who have little process or structure for their process. This was identified as having additional implications for ED admission handovers for nursing, who as patient advocates, need to be vigilant for safety risks.
- The verbal component of the handover should not replicate information available in the documentation but allow for the exchange of professional assessment, patient problem recognition, and anticipated patient care needs in the immediate future.

As part of the literature review, the staff were also asked to review the organization’s policy on Communication Handover. The staff identified several missing elements. The standard of bed-side report that had recently been put in place was not included in the policy. The standard of using the SBAR template to facilitate handovers was not included in the policy. The staff also identified that there were no provisions for the standards of intra-facility transfers and there was no guidance in the policy on how to conduct the handover between the ED and in-patient units.

**Project Team Meeting 4**

The results from the staff surveys were presented to the team during this meeting. The review of the results prompted discussion about the differences in the clinical
environments. Staff from the ED and the in-patient units were able to ask and answer each other in an open, honest, non-threatening way. It was discovered that while some of the ED staff had previously worked in an in-patient environment, none of the in-patient staff had ever had any experience or time in the ED. The group universally agreed that getting to know each other was a positive experience that they thought would continue. Comments like “I’ll know who to talk to now when I have a question…” was expressed from both sides. This concept was important enough to the team that a plan for developing and sustaining relationships between the units was part of the final team recommendations that are discussed in Chapter 6.

Each group had a discovery moment. For the in-patient nurses, it was the realization of the pressure felt when the ED is at capacity and the waiting room has 40 patients waiting to be seen. For the ED nurses, their moment was when they learned that for each discharge on the in-patient unit, the average time to review discharge instructions, complete medication reconciliation, and facilitate the patient physically out of the room took an average of an hour of the in-patient nurse’s time. They also learned that within a 24 hour period of time, the unit census could turn over by 75% on some days. The average discharge time for the unit was late afternoon or early evening, which coincided with the ED highest volume and an increased need to move their admissions to make room.

The survey results identified that both groups had an interest in improving the transition experience for the patients. This led the team to discuss possible approaches and ideas that could improve the patient’s perception. These considerations are evident in the team recommendations discussed in Chapter 6.
Project Team Meeting 5

Using a process improvement approach, the facilitator asked the staff to create a process map for an “ideal” ED admission workflow. Consensus and agreement on the “ideal” was required. To stimulate creativity, they were asked to create the process backwards. They started at the end of the process with the ED admission already in the in-patient bed and they needed to describe the process of how the patient arrived there. The team was asked to take into consideration everything they had learned about communication handovers and the evidence from their organizational environment over the course of the previous team meetings. As they worked on the process, they identified six recommendations for changes to the current ED admission handover process.

Project Team Meeting 6

The facilitator provided a written summary of the work that was reviewed by the staff team at this final meeting. The key assessment issues, findings from the literature review, and recommendations were all reviewed and validated. The attendance record was reviewed to make sure that all participants were acknowledged and that names on the roster were spelled correctly. The facilitator expressed appreciation of their contributions and acknowledged their participation on the project team. As a closing exercise, the group was asked to reflect on the experience and share their impressions.

All were in agreement with the observation that at the beginning of the project they thought they knew all there was to know about handovers; but that at the end of the project they had gained a much better appreciation for the handover event and the potential impact it could have on the patient. There was also agreement that as a group they had a much different level of understanding of what was involved and what was
happening in both environments in anticipation of an inpatient admission from the ED. They expressed confidence that the recommendations that they made would be beneficial and suggested piloting the strategies with each other, not wanting to wait for the formal implementation. Five members of the team, that represented all three of the clinical areas, expressed an interest in continuing to participate in the work on ED admission handovers.

**Recommendations**

The staff team completed a critical review of the current state ED admission handover process from the context of structure, process and outcomes. A review of current literature on handovers from the perspective of improving the outcomes of patient safety, patient satisfaction and nurse satisfaction related to the ED admission handover was also undertaken. At the conclusion of this activity the staff team developed seven recommendations for change, one recommendation for change in the structure dimension, and six recommendations for change in the process dimension. The potential impact on the ED admission handover outcomes based on these recommendations has been identified and are discussed along with the recommendations in Chapter 6.
CHAPTER SIX

DISCUSSION

The focus of this project was on the handover that occurs at the time of admission to an in-patient unit from the Emergency Department (ED), involving the ED and the in-patient nursing staff. A thorough assessment of the organizational and system variables, as well as the perceptions of staff nurses regarding the ED-to-inpatient handover, allowed for a baseline understanding of the current state of this handover process. The baseline assessment substantiated for the participating nursing staff that the ED-to-inpatient handover was a process improvement project that was necessary to impact quality and safety within the organization. A review of the relevant literature revealed that the handover event is complex; and before there can be an effective standardization of the process, especially for the use of an electronic adjunct from an Electronic Medical Record (EMR), there needs to be an understanding of the ritual, culture and context of the event where it occurs (Dufault et al., 2010; Ong & Coiera, 2011; Riesenber, Leitzsch, & Cunningham, 2010; Staggers, Clark, Blaz, & Kapsandoy, 2011b).

In this chapter the recommendations developed by the staff team are presented within the Structure Process Outcome (SPO) framework and the context of the supporting literature. For each recommendation, the rationales along with some of the history of the discussions between the different staff groups are provided. Effectiveness, feasibility and sustainability of the recommendations will be discussed along with the potential for application beyond the project units. A reflection on the roles of the DNP is discussed in relationship to the project and findings. Limitations of this project and recommendations for further work are provided.
Staff Team Recommendations

Structure

The structural dimension helps to define the environment where the process is completed (Smitz Naranjo & Viswanatha Kaimal, 2011). The existing organizational processes for handovers included: a) a template for handovers using the patient care summary form called “SBAR”; and b) the expectation that for an inpatient admission from the ED, the electronic medical record from the ED would be used as the primary resource for information. The response from the staff surveys demonstrated that those options were not consistently used.

As noted in the results of the Clinical Handover Survey, the participating staff identified that the SBAR handover tool was only used 3.7% of the time. In the discussions on this finding, the staff identified that while the SBAR tool was helpful for nurse to nurse shift report, it was not useful for the transmission of information between the ED and the in-patient nurses. Use of the electronic medical record for patient information was identified as being used only 44.4% of the time; and verbal report over the telephone (81.5%) was identified as the predominant method. Discussions revealed that the organization was weeks away from the implementation of an universal EMR that would eliminate the use of the existing ED electronic documentation system, as well as provide for an electronic summary that was planned to replace the current paper SBAR form. The group made the decision to not focus on these structural elements at this time.

The staff reviewed the organization’s current policy on handovers entitled “Handoff Communication” and identified that the policy did not reflect the organizational standards for communication handovers. The recommendation was that the policy be
brought up to date to include the expectation of bed-side-shift report, use of the SBAR (or electronic replacement) and a standard for intra-organizational handovers which would include the ED admission handover.

**Process**

Critical elements of communication handovers have been the focus of attention since the call for having a standardized process for handover events was established as a National Patient Safety Goal in 2006 (Arora & Johnson, 2006; Patterson & Wears, 2010). Riesenber et al. (2010) identified that a lack of understanding of the social structures, rituals and unwritten rules that govern handover events for nursing is a primary barrier to creating a standard process. Hilligoss & Cohen (2012) identified that processes designed to improve shift to shift handovers, would not be sufficient to address the challenges encountered with handovers across different units. Within the SPO framework, the process dimension has been identified as the place where manipulation of the workflow has the potential to improve effectiveness and outcomes (Aday, Begley, Lairson, & Slater, 2004). At the conclusion of the EBP project with the staff work team at Sparrow Hospital, six recommendations for change to the existing ED admission handover process were identified. They are presented along with supporting rationale. The supporting rationale comes from the multiple sources of evidence including the organizational assessment; information from the surveys on staff perception of communication handovers and the quality of the current handovers; the review of the selected literature; and dialogue between the ED and in-patient nursing staff.

**Recommendation one.** The in-patient nurse will initiate the admission handover process by calling the ED nurse upon notification that an ED patient has been assigned to
the in-patient unit. This will occur regardless of the status of the assigned bed. The rationale for this recommendation is that the in-patient unit knows about the ED admission first. Approaching the admission from a “pull” perspective (meaning that the in-patient nurse takes the initiative to begin the transition of the patient out of the ED) establishes opportunity to address existing process barriers that were identified. The discussion that follows provides the rationale and justification for recommendation one.

The ED admission process that was in place at the time of the project followed the workflow as presented in Figure 4.

**Figure 4. Current ED Admission Workflow**

<table>
<thead>
<tr>
<th>In-patient workflow</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Floor notified of pending ED admission by pager (1st page)</td>
</tr>
<tr>
<td>• Charge nurse responsible for reviewing and printing ED record</td>
</tr>
<tr>
<td>• Charge nurse makes the assignment to unit staff and</td>
</tr>
<tr>
<td>• Hand overs the printed ED record to in-patient nurse assigned to the patient</td>
</tr>
<tr>
<td>• Assigned nurse reviews ED record before the ED calls</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ED workflow</th>
</tr>
</thead>
<tbody>
<tr>
<td>• ED paged by patient placement when room is ready (empty and clean). In-patient unit is included on this page. (2nd page)</td>
</tr>
<tr>
<td>• Complete ED documentation</td>
</tr>
<tr>
<td>• Wait 15-20 minutes to allow in-patient nurse time to review ED documentation</td>
</tr>
<tr>
<td>• Call with the expectation that the in-patient nurse is informed from the ED medical record</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Context</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Pressure to move patient,</td>
</tr>
<tr>
<td>• Expectation is that the floor is informed by the ED record</td>
</tr>
<tr>
<td>• ED charge nurse will call to give report in an attempt to expedite the transition process</td>
</tr>
</tbody>
</table>
The collaborative review of the ED admission workflow and exploration of the key issue identified by in-patient nurses of being unable to ask clarifying questions about the patient at the time of handover, led to the discovery of the following process barriers:

1. Charge nurse responsible for reviewing and printing ED record; make the assignment to unit staff, and handover the printed ED record to in-patient nurse assigned to the patient. If the in-patient unit charge nurse has a patient assignment, this can potentially impact their ability to facilitate the notification of unit staff of a planned ED admission and the “handover” of the handover (ED documentation) information.

2. ED paged by patient placement when room is ready (empty and clean). In-patient unit is included on this page. (2nd page). There is great variability in the length of time between the first page to the in-patient unit and the second page. Historically this time between notifications has not been utilized with a focus on efficiency or as an opportunity to take pro-active actions in preparation for an ED admission.

3. The ED is unaware of the in-patient bed assignment until they get notification that the room is ready. The variability in the length of time between a bed request and a bed assignment establishes the potential that the nurse most knowledgeable about the patient’s original presentation and course of treatment and response in the ED will no longer be available at the time of communication handover.

4. The ED operates on the assumption that the ED medical record provides the information that the in-patient staff needs to know. In order to maximize ED
workflow, it is imperative to move patients through the ED, and facilitate admissions as quickly as possible. Therefore, ED staff who have had no interaction with the patient will call to “give report” in an attempt to be helpful. The key issue of not being able to get adequate responses from the ED nurse at the time of admission handover was identified by the in-patient staff members on the work team. The perception survey results from other in-patient staff nurses confirmed that perception. At the same time, the ED nurse perception survey results demonstrated that the ED nurse caring for the patient feels well prepared to provide the handover information. It was determined that the solution was to create a process that would consistently connect the in-patient staff nurse assigned to receive the patient with the ED nurse who was primarily responsible for caring for the patient.

It was determined to make use of the period of time between the first and second pages, allowing the in-patient nurses to coordinate placing a call to the ED around their other patient care responsibilities. The ED has a designated phone assigned to a block of ED rooms; an ED nurse is assigned to a block of rooms. Therefore by knowing the ED room number for the patient who is being admitted, the in-patient nurse can directly contact the ED RN assigned to that patient. If the ED RN is not able to give report immediately, it was discussed that the RNs would have the opportunity to collaborate and make arrangements for the handover, focusing on the patient’s best interest.

**Recommendation two.** When circumstances prevent the in-patient nurse from initiating the handover process, the ED will initiate the call to give report when notified of the room assignment. The rationale for this decision is that there is mutual
responsibility to ensure that the process occurs. So to prevent any creep in length of stay in the ED, the default plan would be the that the ED would call 15-20 minutes after being notified of the assigned room.

**Recommendation three.** When physically moving the patient, the ED staff will place a courtesy call to the receiving unit when they reach the elevator, an indication to the unit that they are on their way. By having the ED staff place a courtesy call from the elevator, the In-patient staff can predict that the patient will be arriving within a 5-10 minute window of time.

The key issue identified by the staff from the Emergency Department was the impetus for the development of the next two recommendations. The ED staff identified that upon arrival to the in-patient unit, they are frequently left waiting for in-patient staff to acknowledge the patient’s arrival and to assist with the physical transfer of the patient into the in-patient room. The review and discussion around this issue identified a couple of system parameters that were thought to contribute to the scenario. The first was the actual physical structure of the hospital and the long distance between the Emergency Department and the in-patient units of 4 South and 4 Foster. The second system parameter was identified as a variable process of completing or initiating patient care orders at the time of admission, for example stopping for a diagnostic procedure between leaving the ED and arriving on the in-patient unit. Both of these parameters create the situation where the in-patient unit cannot consistently rely on the patient arriving within a predictable time after receiving report.

**Recommendation four.** Triggered by the courtesy call, the in-patient staff will ensure that the room is prepared and that the necessary equipment is available. In
addition the in-patient staff will be available to greet the patient and assist the ED staff on their arrival. The results of the perception surveys and subsequent discussions had revealed that both the ED staff and the in-patient staff felt that it is best practice to introduce the patient to the new care providers. The courtesy call allows for the in-patient team to be present to assist in this transition which addresses the key issue identified by the ED staff. Establishing telemetry, having appropriate equipment available as well as direct observation of patient’s mobility were identified as a couple of the key care issues that could be facilitated by this practice change. It was also discussed that from a patient’s perspective, this coordinated effort would be reassuring and set a positive first impression. This plan also allows for the efficient use of ED staff time, as it eliminates the need to wait with the patient until an in-patient staff member is available to assume care.

**Recommendation five.** To provide staffing to meet ED admissions at the time of evening shift change it is recommended to have the 1900 charge nurse clock in fifteen minutes earlier at 1845. Report between the charge nurses is to be completed by 1900. The day charge nurse would then be available to meet ED admissions between 1900-1930. The night charge nurse is to be relieved of duties and clear to leave by 0715 to avoid any complications with accruing overtime.

The conflict created by ED admissions arriving during the time of shift change and bed-side report was identified and discussed on several occasions. As the team began to identify the recommendations and to think about the problem from the perspective of the new process, it was identified that the issues around accepting patients at shift change was manageable.
The 1900-1930 timeframe was identified as the shift change time period with the most conflict. There was agreement that getting report from the ED RN who had cared for the patient was important, and that the receiving unit usually had the opportunity to call for report before the start of shift change. The in-patient nurse would then be able to pass along information on the ED admission to their replacement at shift change.

The issue left to be solved was how to facilitate having unit staff available at the room when the patient arrived. It was discussed that by adjusting the 1900-0730 charge nurse schedule to 1845-0715, the day charge nurse could then be available to meet ED admissions as they arrived on the unit between 1900-1930.

**Recommendation six.** Create an opportunity for new staff to shadow in the other environment. Throughout the project, the staff had the opportunity to ask questions of each other and began to understand the complexity of the process. Several discussions focused on the fact that there was little awareness of the issues, barriers and workflow processes between the in-patient and ED environments. A common theme that developed was an interest in spending a block of time observing and to have the opportunity to meet and “know” the staff that would be sending and receiving “our” patients. It was identified that the orientation on the in-patient units included shadow time in several areas that collaborate with the unit to provide patient care, but that the ED was not included on that list. In the ED, where only experienced staff are hired, some of the ED nurses have in-patient experience, but some have only ED experience because they were hired elsewhere as new grads into the ED. The thought was that in particular, those ED nurses without in-patient experience should have the opportunity to shadow on an in-patient unit to get a sense of the work and issues involved with coordinating an ED admission. It was
identified that developing trust and credibility between the nursing staffs involved in the ED admission handover process was important to create an environment of safety culture.

**Outcomes**

The outcomes from this EBP project on ED admission handovers are multifaceted in that there are actual outcomes and potential outcomes that could be actualized as a result of this work. The results of the staff perception surveys provide nursing leadership with a concurrent evaluation of how bedside practice coincides with the vision of how ED admission handovers occur. The organization now has baseline data on ED admission handovers against which any future work can be benchmarked. Another important outcome is that the project provides the evidence that two very diverse practice environments can come together and collaboratively work to benefit patient centered care and overall safety.

A potential outcome from this project could be applied to the organization’s development of a safety culture. While this project looked specifically at the handover that occurs for an ED admission, many other between-unit handovers occur that could benefit from a similar exploration. Hilligoss & Cohen(2012) identified that interprofessional differences, lack of established relationships, and less awareness of other unit’s state all contribute to unsafe handover events. ED admissions are just one example of a handover event where both responsibility and control are transferred separately. Handovers between critical care to medical-surgical units, in-patient units to surgery, and Post Anesthesia Care Units to medical surgical units are also examples where a high volume of patient handovers occur every day, warranting exploration.
Significant information gleaned from the surveys related to length of service and degree type can help to inform the nursing education programs, in particular for new graduate nurse orientation. The results revealed that newer, inexperienced nurses may not be able to critically appraise the information they are being provided for adequacy; or they do not ask questions due to lack of confidence or the environment does not feel safe. Both of these scenarios should be explored in an attempt to develop and deepen safety culture within a healthcare organization.

The staff team reported that in the process of reviewing the evidence they learned that there is opportunity for an educational focus on the importance of communication handovers, in particular those handovers that occur across clinical areas. Understanding the risk to patients and the need to establish working relationships across organizational units in the interest of patient safety is a key staff initiative that could be undertaken.

The recommendations for change to the structure and process dimensions would theoretically have potential to see change in the outcomes of patient satisfaction and efficiency of the ED admission process, in the form of improved satisfaction scores and decreased in-patient length of stay. Over time it would be interesting to see if the changes build relationships and credibility between the different practice environments.

**Effectiveness, Feasibility, Sustainability**

The recommendations developed by the staff team were focused on issues that were specifically identified by the staff around ED admission handovers between the ED and two in-patient units within a particular organization. The recommendations do not require structural changes within the organization nor do they have any financial
implications that need to be taken into consideration. From that perspective the recommendations are feasible.

The effectiveness of the recommendations remains to be determined following opportunity for implementation and evaluation, informed by the realities of the clinical environment over time. At this time there is no reason to believe that the recommendations would not be effective at addressing the identified issues with the ED admission handover process that were identified.

Based upon the fact that the recommendations were developed by staff, there is higher potential for sustainability than if a plan had been made and imposed upon the staff. That said, sustainability implies that the recommendations are a finished product instead of a work in progress. Due to the complex nature of healthcare and the multitude of variability that can impact individual patient care needs at the time of admission handover, one would hope that what is sustainable out of this project is the desire to look to the evidence to evaluate and determine what actions need to be taken to improve performance and that bedside staff participation is an expectation.

The effectiveness, feasibility and sustainability are also very dependent upon the nursing leadership team. While the staff developed an understanding of the issues and several expressed an interest in continuing the work, the nursing leadership over these areas will ultimately be responsible for engaging, encouraging and enabling the work to move forward. Establishing effective handovers within the culture of the environment will be important to sustain the changes as staff turnover occurs.

While the recommendations from this project are limited in generalization to the organization and the clinical units involved, the methods used for this EBP project are
able to be generalized to other practice issues. Assessment of the baseline status is always critical. Involving direct care providers in the review of the evidence that includes an evaluation of the structures, processes and outcomes within a healthcare environment is an effective means to evaluate and improve patient care quality.

**Doctorate in Nursing Practice (DNP) Roles**

There are several roles that have been identified as the essential functions of the DNP. An opportunity to actualize the DNP roles was afforded by the project. As a clinician the role brings the working knowledge of the clinical environment. Knowledge of practice standards as well as knowing the goal and intent of the National Patient Safety Goals and accreditation standards was necessary. In addition, the ability to apply this information into the clinical environment was pivotal to study and address a complex patient safety issue.

It is through leadership that the environment is created to encourage and foster the use of evidence to inform practice. Support for staff involvement and providing the opportunity is a key leadership role. Leading by example is a powerful message. Leadership is closely associated with advocacy. Within this project, advocating for safe care of the patient was a central theme, but there was also advocacy for staff participation and staff development of using evidence to examine a clinical issue.

The scholarly components involved the investigation of the evidence through the extensive literature review, including an assessment of the level of the evidence; the selection of a theoretical framework to guide the project; and the completion of the human subjects review and approval process. Astute attention to the initial assessment of the organization and formulation of the methods for the project, analysis of the data and
preparation of the written report, and plans for dissemination of the learning from the experience also falls within the scholarly realm.

Exploring of the notion of the in-patient unit taking on the ownership of initiating the ED admission handover process represents innovation. While it appears logical in review, the concept is relatively new and not yet widely adopted. The project team environment had to be neutral and safe enough that the staff could truly stand back and see the potential in such a process change. Similar to leadership and advocacy, innovator and educator are closely aligned. A key to this project was using an innovative approach and educating and increasing the awareness of the staff on the issues associated with communication handovers as well as the differences and challenges faced in the different practice environments. With this knowledge, staff were able to articulate the issues and the solutions in a direct, feasible and effective way.

**Limitations**

Several limitations need to be acknowledged in relationship to this project. The primary limitation was the inability to move the recommendations immediately into a pilot implementation, allowing facilitation of effective process changes to improve the ED admission handover process. The imminent implementation of an electronic medical record at the clinical setting also limited the ability to explore and address the components of the ED admission handover that had to do with documentation, documentation review, and the use of EMR adjuncts in the facilitation of handover processes.

The relatively small number of participants (fifty four out of a potential of approximately 240) who completed the perception surveys is a limitation. While the
number completed allowed for an adequate analysis of the differences between ED and in-patient nurse perception on handovers, a larger number of participants is always desirable to improve the validity of the responses. Another limitation was the lack of information within the organization on the history of adverse patient events associated with an ED admission handover. That information would have contributed to the evidence of the structure and process. Another limitation with the team was the inability of all the staff members to consistently attend each team meeting.

There was also a limitation specific to one of the instruments used. The Clinical Handover Staff survey was designed specifically to measure perception of handovers from a shift to shift perspective. While the survey was acceptable for use with the in-patient staff, it needed to be modified for use with the ED staff.

**Recommendations for Further Consideration**

It should be noted that the recommendations for process changes are all within the control of the staff. There are no costs associated with implementing the changes that are proposed. An interesting observation was the transition within the team from the thinking of “us versus them” to “us and our patient.” This demonstrates the shift that occurred as the participating staff began to recognize the complexity and the implications for patient safety. Using the capacity of the staff most familiar with the patient care issues at the bedside is a highly effective tool to use for the re-design of practice in the effort to improve patient safety. Process change from a top down leadership approach can be complicated and less effective due to lack of intimate knowledge of bedside care nuances. The simplicity of the recommendations and the potential for positive impact on outcomes should not be overlooked.
Moving forward with a pilot that implements these recommendations is strongly encouraged. Plans should be in place to monitor and capture outcome measures for patient satisfaction, staff satisfaction, throughput metrics, and adverse patient events associated with ED admission handover. Continuing staff participation through the engagement of the unit based councils should be a key element to the planning. While this EBP project focused on the handover that occurs as part of the ED admission process, there are many other inter-department handovers that occur that would benefit from a similar approach.

An incidental finding from working with the staff on this project was the discovery that while the staff use the term handover and they know the intent of nurse to nurse report, they shared that at the beginning of the evidence review they did not have an appreciation or an awareness of the significance of the patient safety risk for interdepartmental handovers. This is an important finding with implications for nursing leadership. It should never be assumed that just because terms are common, there is full understanding among bedside care providers of the implications and evidence of significance in regards to patient safety risk. This finding and understanding the implications in and of itself validates the concept of engaging staff in evidence review.

The issue of the content and standardizing the expected information that should be exchanged is still work that needs to be completed. The literature review provided evidence that the content is not easily standardized, especially in regards to using an electronic adjunct (Staggers, Clark, Blaz, & Kapsandoy, 2011a; Staggers, Clark, Blaz, & Kapsandoy, 2011b). The implementation of a comprehensive EMR included the development of a template electronic adjunct to support handovers. Based upon the
evidence that the organization’s pre-EMR instrument in the form of the SBAR form was identified as not being effective or useful for ED admission handover, suggests that the new template should be reviewed for effectiveness and validated from the perspective of the bedside staff. The future use of any form of standard information content should also be evaluated from the perspective of the process. While the recommendations from the staff work team were primarily focused on the interpersonal communication and teamwork between the unit staffs, the fit of the information content into this workflow should be reviewed and built into the resulting process map.

In conclusion this evidence based process improvement project sought to inform a team of staff nurses representing both the Emergency Department and in-patient nursing units on the concept of handovers for emergency department admissions. Staff perceptions of issues with the handover process, as well as a review of the literature and evidence of best handover practices, informed the group. An understanding of the process from both the perspective of the Emergency Department and the receiving in-patient units was achieved. Recommendations for changes were made based upon consensus and resulted in no financial implications to the organization.

The staff who participated in the project expressed a new understanding of the process and an appreciation for the challenges faced by nursing staff on both the sending and receiving end of the process. The intent of the process, a safe transition for the patient between different levels of care is now better understood and there is a core of bedside care providers who are informed and committed to improving patient safety during this event.
APPENDICES
Permission to use the *Handover Quality Rating Form*

**From:** "Manser, Tanya" <t.manser@abdn.ac.uk>
**To:** Karen Delrue <karen.delrue@yahoo.com>
**Sent:** Tuesday, April 10, 2012 12:08 PM
**Subject:** Re: Interested in your handoff quality tool

Hi Karen

You are very welcome to use our tool. I have attached the rating form I used in a recent study (slightly adapted from the version published in QSHC due to different sample etc. / you can compare it to the items listed in the paper). If you need it I can dig out the original form (It was in German but I could provide a translation that corresponds to the QSHC-Paper).

In case you decide to use the tool we would be interested in the results and if you had to make adaptations to the tool, so that we can learn from your experience.

Good luck with your study and please get in touch if you need any more information.

Best wishes - Tanja

Am 05.04.2012 um 20:01 schrieb Karen Delrue:

Hello, I am a student at Grand Valley State University in Grand Rapids, Michigan in the United States. I am currently completing my Doctorate in Nursing Practice (DNP) and my dissertation interest is communication handovers, particularity between the Emergency Department and in-patient units for patients admitted from the ED. I am researching instruments and have come across your publication describing the development and testing of a tool to measure handoff quality. Is this instrument available for review and potential use?

Thank-you for your consideration

Karen Delrue, MSN, RN, CEN
Grand Valley State University
Grand Rapids, MI
karen.delrue@yahoo.com
Handover Quality Rating Form

Peer Observation – Please observe a team member either giving or receiving handover information for an Emergency Department admission and rate the following components according to your observation. Please return completed form to the collection envelope located _________.

This observation occurred during the: (Please check one)

_____ Giving of report
_____ Receiving report

<table>
<thead>
<tr>
<th>Conduct of the Handover</th>
<th>YES</th>
<th>Rather yes</th>
<th>Rather no</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>The handover followed a logical structure</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>The person handing over the patient continuously used the available documentation</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>(patient chart, SBAR form) to structure the handover</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not enough time was allowed for the handover</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>All relevant information was selected and communicated</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Priorities for further treatment were addressed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>The person handing over the patient communicated assessment of the patient clearly</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Possible risks and complications were discussed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Teamwork</th>
<th>YES</th>
<th>Rather yes</th>
<th>Rather no</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>It was easy to establish contact at the beginning of the handover</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>There were tensions with the team during the handover</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Two much information was asked for</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Questions and ambiguities were resolved (active inquiry by the person assuming</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>responsibility for the patient)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The team jointly assured that the handover was complete</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Handover Quality</th>
<th>YES</th>
<th>Rather yes</th>
<th>Rather no</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Documentation was complete.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>There was too much information given</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Too much information was asked for</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>The patient’s experience was considered carefully during the handover</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Circumstances of the Handover</th>
<th>YES</th>
<th>Rather yes</th>
<th>Rather no</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>The person handing over the patient was under time pressure</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>The person taking on the responsibility for the patient was under time pressure</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
Permission to use the *Clinical Handover Staff Survey*

Karen Delru
Grand Valley State University
Grand Rapids, Michigan USA

22nd March 2012

Dear Ms Delru,

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 minor modifications to the language in the survey, if necessary, to suit your local context.

Please use the following reference to acknowledge the source of the survey:

We have recently conducted further analyses to establish the psychometric properties of the survey with our Australian sample and have submitted a manuscript for publication. Once this paper is published, we will forward you a copy along with an updated version of the tool with some modifications to Section C.

The next stage in the development of the survey is to examine its psychometric properties with an international sample. In this regard, the research team would like to invite you to send us a de-identified spreadsheet of your data, specifically Section A (demographics) and Section C (perceptions of afternoon handover). SPSS is the preferred file format but Excel is also acceptable. We can send you a blank SPSS database so that your database is consistent with our own.

Please note that your decision to share your data has no impact on this permission to use the survey, but you would be making an important contribution to the development of tool for other researchers internationally.

If you would like further information, please contact me via email: beverly.o'connell@deakin.edu.au.

Kind regards,

Professor Bev O’Connell

Inaugural Chair in Nursing, Southern Health - Deakin University
Associate Dean (Research), Faculty of Health, Deakin University
APPENDIX D
Clinical Handover In-Patient Staff Survey

Please do not place your name on this document. Answer the questions from your perspective on ED Admission Handovers (report). There are no right or wrong answers.

Section A: Demographics

1. How long have you been a registered nurse? ___________ years
2. How long have you been employed at Sparrow Hospital? ___________ years
3. What is the highest degree you have earned?
   ______(1) Associate Nursing Degree
   ______(2) Nursing Diploma
   ______(3) Baccalaureate Nursing Degree
   ______(4) Non-nursing Baccalaureate Area: ________________________
   ______(5) Nursing Masters Degree
   ______(6) Masters other than Nursing Area: ________________________
   ______(7) Doctorate
4. What is your current position?
   ______(1) Staff Nurse
   ______(2) Management
   ______(3) Education
   ______(4) Advanced Practice
5. What is your employment status?
   ______(1) Full time
   ______(2) Part Time
   ______(3) Unit Based Resource
   ______(4) Float Pool
   ______(5) Agency Staff
6. What time of day do you primarily work?
   ______(1) Days
   ______(2) Evenings
   ______(3) Nights

OVER
B. Current Handover Structure

7. On average, how long does an ED admission report/handover usually take? ____ mins

8. How is the ED admission handover usually conducted?
   (1) Verbal by telephone
   (2) Verbal Face to Face
   (3) Structured from SBAR handoff tool
   (4) using the electronic medical record as a guide
   (5) Other

9. How would you prefer ED admission handover to be conducted?
   (1) Verbal by telephone
   (2) Verbal Face to Face
   (3) Structured from SBAR handoff tool
   (4) using the electronic medical record as a guide
   (5) Other

10. Reason for your preference?

11. How are patients involved in the ED admission Handover?
    (1) Report at patient bedside
    (2) Introductions to staff on arrival to unit
    (3) No patient involvement
    (4) Other

12. How would you like patients to be involved in ED admission handovers?
    (1) Report at patient bedside
    (2) Introductions to staff on arrival to unit
    (3) No patient involvement
    (4) Other

13. Reason for your preference?

14. In what ways could the ED Admission Handovers be improved?
Section C: In-Patient Nurses Perceptions of ED Admission Handover

Please indicate the extent to which you disagree or agree with the following statements from the perspective of a nurse receiving an ED admission on an in-patient unit.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Slightly Disagree</th>
<th>Neither</th>
<th>Slightly Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>15. I am able to clarify information that is provided to me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>16. I am able to keep my mind focused on the information being given to me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>17. The way in which information is provided to me is easy to follow.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>18. The information I receive is up to date.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>19. I am provided with sufficient information about the patient to assume care.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>20. I have the opportunity to ask questions about things I do not understand.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>21. The duration of the handover is appropriate.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>22. I have the opportunity to discuss confidential or private patient information.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>23. I can obtain the handover information from the patient chart.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>24. The information I receive is subjective.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>25. I have to contact the ED nurse for further information on my patient.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>26. The ED handover is interrupted by other events and activities on my unit.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>27. I am able to check the patient during handover.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>28. I am given information during the handover that is not relevant to patient care.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>29. Our ED admission handover processes promote patient safety.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>30. Patient contributes or has input into handover discussions.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>31. I feel that important information is not given to me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

Thank you for completing this survey on your perceptions of the handover process that occurs for Emergency Department admissions. Please place your completed survey in the collection envelope that is located ______________.
APPENDIX E
Emergency Department Handover Perception Survey

Clinical Handover Emergency Department Staff Survey

Please do not place your name on this document. Answer the questions from your perspective on ED Admission Handovers (report). There are no right or wrong answers.

Section A: Demographics

1. How long have you been a registered nurse? ________ years
2. How long have you been employed at Sparrow Hospital? ________ years
3. What is the highest degree you have earned?
   ______ (1) Associate Nursing Degree
   ______ (2) Nursing Diploma
   ______ (3) Baccalaureate Nursing Degree
   ______ (4) Non-nursing Baccalaureate Area: _______________________
   ______ (5) Nursing Masters Degree
   ______ (6) Masters other than Nursing Area: _______________________
   ______ (7) Doctorate

4. What is your current position?
   ______ (1) Staff Nurse
   ______ (2) Management
   ______ (3) Education
   ______ (4) Advanced Practice

5. What is your employment status?
   ______ (1) Full time
   ______ (2) Part Time
   ______ (3) Unit Based Resource
   ______ (4) Float Pool
   ______ (5) Agency Staff

6. What time of day do you primarily work?
   ______ (1) Days
   ______ (2) Evenings
   ______ (3) Nights

OVER
B. Current Handover Structure

7. On average, how long does an ED admission report / handover usually take? ____ mins

8. How is the ED admission handover usually conducted?
   ____ (1) Verbal by telephone
   ____ (2) Verbal Face to Face
   ____ (3) Structured from SBAR handoff tool
   ____ (4) using the electronic medical record as a guide
   ____ (5) Other

9. How would you prefer ED admission handover to be conducted?
   ____ (1) Verbal by telephone
   ____ (2) Verbal Face to Face
   ____ (3) Structured from SBAR handoff tool
   ____ (4) using the electronic medical record as a guide
   ____ (5) Other

10. Reason for your preference?

   ____________________________________________________________

11. How are patients involved in the ED admission Handover?
    ____ (1) Report at patient bedside
    ____ (2) Introductions to staff on arrival to unit
    ____ (3) No patient involvement
    ____ (4) Other

12. How would you like patients to be involved in ED admission handovers?
    ____ (1) Report at patient bedside
    ____ (2) Introductions to staff on arrival to unit
    ____ (3) No patient involvement
    ____ (4) Other

13. Reason for your preference?

   ____________________________________________________________

14. In what ways could the ED admission handover be improved?

   ____________________________________________________________
Evaluation of the Nursing Handover Process for Emergency Department Admissions

Communication handovers are an area of interest in the patient safety circles because so many adverse patient outcomes are traced back to a breakdown in communication. Commonly known as “report”, this event signifies a transfer in responsibility for the patient’s care. Emergency Department admissions involve a handover or “report” between the ED and the receiving in-patient unit. This type of handoff not only includes a transfer of nurse responsibility, it also includes a transfer in physician responsibility and a transfer to a different location and environment. This is a time of risk for the patient and structured, reliable handover processes have been identified as a National Patient Safety Goal.

Sparrow is providing the clinical site for the Doctorate of Nursing Practice Program at Grand Valley State University. As part of the program requirements an Evidence-based practice, process improvement project has been developed to look at the current report process for ED admissions at Sparrow. Three units have been identified and have participated in the preparation of this project, 4 Foster, 4 South and the Emergency Department. This project is designed around staff nurse participation.

There are a couple of opportunities for you to participate in this project:

1. Complete the Clinical Handover Staff Survey for your area. This survey collects some basic demographic information and then asks you to rate your perceptions about handover practices. There is also the opportunity to provide your opinion and to make suggestions about the ED admission handover process. This survey can be completed once per staff member.

2. Complete the Handover Quality Rating Form after participating in an ED admission handover as either the sending or receiving nurse. A separate Handover Quality Rating Form should be completed for each ED admission that you participate in.

This is an exciting opportunity to participate as a professional nurse looking at best practice for patient care. The unit based councils (UBCs) on each unit will be assisting in the distribution of information for this project. Progress and results of the work will also be communicated from the UBCs.

Participation is strictly voluntary. The surveys are completed anonymously. Participation implies consent. There are no risks associated with participation in this activity. Participation may be stopped or suspended at any time, for any reason without penalty.

Please take advantage of this opportunity to contribute your bed-side expertise in a project around an important patient care issue.

For further information about this project please contact Karen Delrue at delruel@mail.gvsu.edu or 616-446-3511. For information about your rights as a participant, please contact the Grand Valley State University Human Research Review Committee at hrcc@gvsu.edu or at 616-331-3197.
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