Transfers of Patient Care: An Exploration of the Nurses’ Process

Thesis

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By

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Abstract

The purpose of this study is to analyze the nurses transfer process as patients transferred from the ICU to general medical surgical units in a large academic medical center, and to explore the data elements that nurses define as essential to safe and effective transfer of patient care, including factors that may impact the optimal delivery of the handoff information. Data were collected through observations of the ICU and medical surgical unit nurses, interviews of the nurses regarding current and ideal processes surrounding patient transfers, and chart reviews of data elements related to transfer outcomes.

Results of this study explore the types of activities nurses perform pre- and post-transfer and compare those activities to the described actual and described ideal processes identified by the nurses in interviews. Elements of information included in the handoff communication were observed and documented, then compared to the stated actual and ideal information according to the respondents. Although sequence of transfer components varied in both the observed activities and the described activities, the pre- and post-transfer processes were able to be categorized. Interview responses were analyzed using a modified version of Spradley’s Domain Analysis (1979). Two of the nine defined semantic relationships were found to be present: (a) spatial where X is a part of Y, and (b) attribution where X is an attribute of Y. This relationship analysis enabled understanding of the interviews across responses.
Dedication

All my love and heartfelt gratitude to Mike, Zach, and all my family for their support and encouragement—I never would have been able to do this without you!

Sincere appreciation to Kath for keeping me motivated and centered—our friendship means the world to me!
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Field of Study

Major Field: Nursing
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CHAPTER 1

Introduction

Nurses perform handoffs with various members of the care team at many points in a patient’s episode of care. Handoff communication is the process of passing complete and accurate patient-specific information from one caregiver to another (Mascioli, Laskowski-Jones, Urban, & Moran, 2009). Compiling complete information about the patient and communicating that information in a manner that is clearly understood by the recipient are two crucial steps in any nursing handoff.

The complexity of inpatient care environments, processes, and information adds challenges to optimal interactions surrounding patient care. For example, the transfer of patients from the intensive care unit (ICU) to the general medical surgical floor in a hospital is a complex, multidisciplinary process (Lin, Chaboyer, & Wallis, 2008). Effective coordination and accurate communication among staff is a key component in the delivery of quality nursing care (Strople & Ottani, 2006) that can optimize the transfer process and patient outcomes (Lin et al., 2008). However, caregiver interactions involve bi-directional communication where human factors serve as a prime source for errors and omissions (Mascioli et al., 2009).

The concern of clinician communication errors related to patient safety was amplified in the hallmark report To Err is Human, published in 1999. In the report, the Institute of Medicine attributes the deaths of 98,000 hospital patients to medical errors,
including communication failures (Strople & Ottani, 2006). Since the publication of
report, healthcare regulatory agencies, watchdog groups, and government policy makers
have focused on efforts to prevent errors and to promote clinical quality and patient
safety, including improved caregiver collaboration and communication (Strople & Ottani,
2006). Furthermore, The Joint Commission cites communication as the most frequent
root cause of sentinel events (Adamski, 2007). In response to growing concerns
surrounding lack of communication among health care workers and to emphasize the
importance of clear, accurate, and timely exchange of patient information, The Joint
Commission established the 2006 National Patient Safety Goal requiring healthcare
organizations to implement a standardized approach to handoff communications
(Adamski, 2007; Mascioli et al., 2009).

The purpose of this study is two-fold: 1) to examine patient care handoffs between
the ICU nurses and the general medical surgical nurses during the point of transfer of
care of a sample of patients at a large academic Medical Center; and 2) to determine the
data elements that nurses define as essential to safe and effective transfer of patient care,
and factors that may impact the optimal delivery of the handoff information.
Specifically, this observational study explores: the handoff experience as viewed by
trained observers, the lived experiences of the nurses sending and receiving information,
and the literature surrounding the process and nature of handoffs. This qualitative study
is a subset of a larger research initiative being conducted by Dr. Esther Chipps PhD, RN
examining the impact of an electronic medical record on handoff communication.
CHAPTER 2

Review of the Literature

The review of literature is intended to examine the purpose, content, methods and tools used in handoff communication, as well as challenges and barriers to effective handoff communication. The search was completed using Medline and PubMed with key words nursing communication, handoff communication, and handovers. Literature was limited to English language articles from 1996 to present.

Definition of Handoff

Because ongoing patient management involves the transfer of care between individuals or departments, it is essential that responsibility and information related to the patient be “handed over” to the receiving staff (Ye, Taylor, Knott, Dent, & MacBean, 2007). Strople and Otani (2006) define nursing handoff as a multifaceted process that serves to provide nurses with vital patient information to facilitate clinical decisions and patient care planning. The communication of patient care information, known as “the handoff”, is regarded as an essential component in this multifaceted nursing activity (Meibner, Hasselhorn, Estryn-Behar, Nezet, Pokorski, & Gould, 2007).
The Importance of Handoffs

The purpose of a handoff in the healthcare setting is to ensure the proper transfer of information about the patient’s health state and the plan of care for such patient as the patient care responsibility is transferred from one caregiver to another (Patterson, Roth, Woods, Chow, & Gomes 2004, Meibner et al., 2007). Health care research has supported this purpose; however some researchers extend the objectives of the “nursing change of shift” handoff to have a further purpose: an opportunity to transfer responsibility that offers the outgoing nurse an emotional relief (Patterson et al. 2004, Meibner et al., 2007). Besides emotional debriefing, these “change of shift” interactions are a source of emotional support (Meibner et al., 2007). Patterson et al. (2004) lists team cohesion, training, and socialization as other objectives of nursing handoff communication.

Handoff communication in healthcare settings serves other functions as well. In studying the function of handoff communication, Strange’s (1996) ethnography of patient handoff in the intensive care setting divides the handover into three themes. The first is the ‘overt’ function that is the sharing of the patient information. The second is the ‘covert’ function where nurses use their knowledge and expertise and protect their role in patient care. Finally, the ‘ritual’ functions facilitate nurses maintaining certain nursing practices. Strange’s ethnography supports the idea that handoff communication serves both the practical information sharing purpose, as well as the social and emotional purposes of sharing knowledge and support from nurse to nurse discussed above (Patterson et al., 2004; Meibner et al., 2007).

Nurses aim to offer patients the best care. To provide such care, effective, accurate, and timely handoff communication is essential. However the care setting itself presents
challenges and barriers to effective communication. The increased complexity of patient care needs and the increased complexity of healthcare processes and healthcare systems contribute to the barriers to the optimal handoff communication. For example, noisy, active nursing units; pressure perceived by staff for timely interaction; language and cultural barriers; organizational hierarchy; and limitations of communication via telephone, email, paper or computerized records are complex environmental factors common in healthcare settings that create challenges and barriers to effective communication (Berkenstadt, et al., 2008).

O’Connell, Macdonald, and Cherene (2008) examined nurses’ perceptions of the handoffs as well as the strengths and limitations of the handoff process. The quality of handoff was commonly perceived as poor due to the challenges of the handoff process. The handoff process was found to be time consuming and included too much subjective information, according to the nurse participants. Anderson & Mangino (2006) further discuss the barrier of subjectivity of information, describing the digression of handoff content to information that is judgmental and irrelevant leading to the oncoming nurse having negative preconceptions. These negative preconceptions were found to cause the nurse to miss crucial objective information such as clinical assessment data (Anderson & Mangino, 2006). Interruptions were often cited in the literature as barriers to optimal handoff (Anderson & Mangino, 2006; O’Connell et al., 2008).

Financial Impact of Ineffective Handoff Processes

Studying handoffs from a financial perspective, Storfjell et al. (2009) examined the non-value-added time in nursing to determine the major processes and drivers that are
most costly to nursing units. The handoff process was found to be a key high cost driver. Costs were attributed to documentation, communication, and the communication needs involved in patient admission, discharge, and transfer contributed to high costs especially in the non-value added time in nursing. Storfjell et al. concluded that the handoff process has numerous patient safety implications and any patient care process that includes handoff communication should be a high priority for improvement.

**Methods of Handoff Communication**

The methods nurses use to communicate during patient care handoffs vary depending on the patient care needs and the handoff situation. During traditional “change of shift” report nurses are more likely to exchange information face-to-face. Anderson & Mangino (2006) studied an implementation of a bedside shift report where nurses shared handoff communication at the bedside reviewing key documentation and seeing the patient together. More traditional methods of shift report occur face-to-face in an office or conference room on the patient care unit (Anderson & Mangino, 2006; McFetridge, Gillespie, Goode, & Melby, 2007). A second common form of report is taped shift report where nurses record their verbal communication of the handoff on a tape recorder for the oncoming nurse to listen to and review as needed (Anderson & Mangino, 2006). Third, handoffs that occur among other caregivers or at other points of transfer of care, such as emergency department to the intensive care unit or intensive care unit to the general unit, are commonly delivered via telephone or written report.

Healthcare literature describes multiple methods to communicate clinician handoffs. However few studies examine the benefits and challenges of the various methods.
Further research is required to better understand the methods considered optimal for patient care and clinician workflow.

**Tools Used During Handoffs**

Nurses use numerous tools and sources of patient information to support both the sending and receiving of patients during the handoff process. In a study examining the complexity of nurse work in the acute care setting, Ebright, Patterson, Chalko, and Render (2003) found that every nurse participant used a type of manual recording system or memory aid to track work. These aids were then used as a reference when handoff communication occurred.

Fenton (2006) compared a pre and post implementation of a structured systematic nursing guide in a geriatric facility. Prior to implementing a structured systematic nursing handover guide, there was significant omission of clinical data including important safety factors. Significantly less information was omitted during handoffs following implementation of a new handoff process including the structured guide (Fenton, 2006). Catchpole et al. (2007) applied Formula 1 pit-stop and aviation models to the handoff communication process from surgery to intensive care. A checklist was incorporated as part of a protocol and significantly reduced technical and information errors during the handoff process.

Using 12 simulated patients over five consecutive handoffs, Pothier, Monteiro, Mooktiar, and Shaw (2005) compared three styles of handoff communication: verbal only with no note-taking, verbal with note-taking writing, and verbal with pre-prepared handoff sheets. They found a considerable loss of information in the verbal only group...
for each of the five handoffs. A loss of information content was also noted in the verbal with note-taking only group, but less when compared to the verbal only group (Pothier et al., 2005). The pre-prepared handoff sheets with a verbal handoff demonstrated the smallest loss of clinical information compared to all other communication methods. These results suggest that using a structured tool enhances the quality of handoff communication, especially when combined with verbal interaction between caregivers.

Communication Factors in Handoffs

Effective communication is a two-way process whereby a communicator must be clear in conveying information to a listener who must comprehend exactly what is being conveyed (Mascioli et al., 2009). Various factors and challenges influence communication in healthcare that can lead to clinician inefficiencies and patient safety issues. First, communication styles influence the effectiveness of the message transmittal. Nurses tend to be trained to communicate descriptively and broadly, while physicians tend to be trained to be concise in communicating with others (Leonard, Graham, & Bonacum, 2002; Mascioli et al., 2009). A lack of awareness or misunderstandings of these differences in communication styles between providers may contribute to clinical communication failures (Leonard et al., 2002). For example, a nurse may call a physician to discuss concerns related to a patient’s condition and offer a detailed, lengthy assessment. The physician may impatiently listen, waiting to hear key facts and miss aspects of the explanation that could be crucial to nursing care and clinical decisions. In order to implement standardized, effective handoff processes, clinicians must understand the importance of recognizing communication style differences.
A second factor that influences communication is the increase in healthcare complexity. As hospitalizations are characterized by shorter stays, sicker patients, and multiple inter-unit transfers, the need for effective communication becomes critical (Anthony & Preuss, 2002). As a result, the demand for this timely and accurate information increases at the same time the likelihood that this same information is fragmented and compromised due to the instability of the clinical workforce and the transfers of care of these more acute patients (Anthony & Pruess, 2002). In order to address these concerns, recent focus of national patient safety initiatives includes the recommendation of strengthening communication among healthcare providers in order to promote optimal transfer of patient information (Stople & Ottani, 2006).

Nursing has not consistently defined the content elements for ideal handoff interactions, such as the quantity and quality of such communication processes (Meibner et al. 2007; O’Connell et al. 2008). Berkenstadt et al. (2008) stresses the importance of including the most current patient information such as patient status, treatment, plan of care, and any recent or pending changes in condition. For change of shift report, Strople and Otani (2006) suggest that the ability to obtain an accurate ‘snapshot’ of patient status requires integrating the assessment data with test results, medications, allergies, fall risk, and resuscitation status. Interviews of emergency nurses and intensive care nurses conducted by McFetridge et al. (2007) indicate that nurses working in both areas felt that content of handoff communication was highly variable between practitioners resulting in wide discrepancies in the type and amount of information exchanged. Findings from these studies suggest that more research is needed to better understand the elements of
ideal handoff communication.

Recommendations for the quantity of information included in handoff communication also vary. Anderson & Mangino (2006) emphasize that the information transferred between nurses must be broad enough to encompass the long term plan of care of the patient, yet specific enough to address the patient’s personal preferences, short term goals and immediate needs. Furthermore, the quality of the handoff is impacted by missing or incomplete information. Currie’s (2002) survey of emergency admission nurses identified missed information as the most common problem with handoff. This finding was supported in the Nurses’ Early Exit Study, a large international study including ten European countries (Meibner et al., 2007) that found that insufficient information exchange in shift handoff communication was cited as a source of dissatisfaction among nurses. Although the extent of dissatisfaction varied by country, between 4%-19% of the surveyed nurses indicated that they were dissatisfied with the amount of information exchanged in shift handoffs. Further study is needed to better understand the most effective quantity of information included in handoff communication.

Summary

The process of handoffs from one person to another in high volume, high frequency, and high consequence situations has been well described and studied in non-medical disciplines such as space and flight aviation and nuclear power plants (Catchpole et al., 2007). Only more recently has more public attention been directed towards medical errors and patient safety and their relationship to communication between clinicians. These more recent efforts have been directed at critically examining the handoff process
and communication among healthcare providers in the hospital setting as a means of reducing error and improving patient safety.

This review of literature shows that researchers have explored handoffs in healthcare from various aspects; however few studies specifically describe the exploration from the nursing perspective. Of those studies that focus on nursing care, the main focus tends to be on “change of shift” handoff communication within the same unit. Additionally, little research has explored the transfer of care from the acute ICU setting to the general medical surgical floor. This study offers an opportunity to gain further understanding of this transfer of care from the perspective of the nurses sending and receiving the patients.
CHAPTER 3

Methods

This chapter addresses the methods used to gather, analyze, and interpret qualitative and quantitative data. Data were gathered to primarily address the current content and process of nursing handoff communication during the transfer of patients from the intensive care setting to the general medical surgical or stepdown unit. A second aim of the study was to seek the knowledge and opinions of nurses about the current and ideal nursing handoff transfer processes. The data were collected at the main hospital and the community hospital settings of this academic medical center.

Preparation for Data Collection

The collection of data was based on the methodology of Dr. Esther Chipp’s (Principal Investigator) main study titled “Nursing Handoff: An Exploration of the Process”. The investigative team consisted of a Hospital Nurse Scientist (Principal Investigator), qualitative research experts from the College of Nursing and the College of Public Health, a faculty member from the Health Informatics Management program, several hospital staff members from the nursing and information technology departments, and two graduate students. The data for the secondary study presented in this thesis was collected by the two graduate students: one in a Master’s of Science in Nursing and the other a Master’s of Science student in the Health Informatics Management program.
Both observers met with the Principal and Co-investigators on numerous occasions prior to data collection to develop a plan and tool for data collection. All plans and tools used for data collection were approved by the Principal Investigator and other members of the research team as deemed necessary.

The graduate students were trained as observers for data collection by the Principal Investigator and the two qualitative data experts. The objective of the training session was to finalize the drafted observation tool (discussed in detail later in this chapter) and determine a detailed methodology for data collection. The methodology for data collection included obtaining informed consents, a thorough review of the ICU and medical surgical unit observation and interview procedures, and details surrounding the post-transfer encounter collaboration between the two observers to review data and ensure validity.

Two trials of the drafted observation tool occurred after the first meeting: one performed by one of the co-investigators of the main study; and one performed by the two graduate students. The trials were conducted to ensure inter-rater reliability and validity of the observation tool. A second training session followed their observation trial. During the second training session the three trial participants met to discuss their expected and unexpected experiences of completing the observation and using the data collection tool. Based on the outcome of the trial, edits were made to the observation tool prior to the submission of the proposal to the Institutional Review Board. These edits included adding handoff communication elements and adding more space to document activities surrounding the transfer encounter.
Sampling Process

The sample for this study consisted of 16 registered nurses: (a) eight registered nurses working in ICU settings of a large academic medical center and caring for the patient at the time of transfer to a general medical surgical or step-down unit and (b) eight registered nurses who received the patient in the transfer of care. The sampling process consisted of several steps. During designated data collection times, the trained observers would contact the staff members responsible for patient placement in the two participating hospitals to determine what eligible transfer encounters would occur. Eligible transfer encounters included those from the medical ICU to a general medical surgical unit or step-down unit in the main hospital (excluding corrections patients), and those from the ICU to a general medical surgical unit or step-down unit in the community hospital.

For eligible transfer encounters, the trained observers would report to the ICU unit first. The ICU nurse caring for the patient was approached for possible participation and informed consent by one or both observers. Once the ICU nurse consented, one observer would obtain verbal consent from the patient, while the other observer would obtain informed consent from the receiving nurse. Following consent for both nurses and the involved patient, the data collection for the transfer process commenced.

Data Collection via Direct Observation

The content and process of nursing handoff communication was collected through direct observation of the eight transfer encounters by the two trained graduate students.
Four observations occurred in the main academic hospital and four observations occurred in the community hospital affiliated with the main academic hospital. One observer remained with the ICU nurse while the other observed the nurse receiving the patient. Observer A was the Health Informatics student. Observer B observed the ICU process for six encounters and the receiving process for two encounters, while Observer B, the Nursing student, observed the ICU process for two encounters and the receiving process for six encounters.

The ICU observation focused on the preparation of the patient for transfer and the handoff communication and process of the transfer. The ICU portion of the direct observation ended when the ICU nurse had completed both the transfer of the patient and the documentation of the transfer process. The medical surgical unit observation focused on the nurse preparation to receive the patient, the handoff communication and process of the transfer, and the post-transfer activities that ensured the patient was settled into the new location. The medical surgical unit portion of the direct observation ended when the receiving nurse had completed the assessment of the patient, received and reviewed orders for care, and documented the assessment and transfer process.

Data Collection Tool

An observation documentation tool (see Appendix A) was used by both observers to ensure consistent, complete recording of the transfer information. The ICU observation tool consists of sections for documenting activities prior to transfer and the handoff report. Pre-transfer activities were documented in narrative form and included the duration of time the nurse spent on each activity. The handoff communication process
was documented using a checklist of common nursing handoff components and open space to write in other components heard. The method of patient care handoff and tools used during handoff were noted. Factors impacting the transfer process, such as whether or not the bed on the receiving unit was vacant and properly prepared for the incoming patient, interruptions during the handoff, and non verbal communications and behaviors such as collegiality and professionalism, observed during the handoff were also documented. A narrative section on the observation tool was provided for the observer to note any additional findings not noted elsewhere.

The medical surgical unit observation tool consists of sections for documenting the receipt of the handoff report and the activities of the nurse to complete the transfer and assume full care of the patient. Documentation of receipt of the handoff report included whether or not the receiving nurse had the opportunity to ask questions and/or clarify information, whether the receiving nurse did ask questions and/or clarify information, and what questions were asked and/or information was clarified. Post-transfer activities were documented in narrative form and included the activity, duration, source of information (if applicable), and who completed the activity.

Data Collection via Interviews with Nurses

The knowledge and opinions of the nurse subjects were collected by the observer either in a face to face interview at the time of the actual observation (15 interviews) or by follow-up phone call interview (1 interview) within 72 hours of the observation. The ICU nurse and receiving nurse were asked the following six questions: 1) Describe the work of the nurse involved when you are asked to transfer/accept a transfer to the
medical surgical unit/from medical ICU. Elaborate on all the steps; 2) Describe the difference in the work of the nurse between an emergent transfer and a planned transfer; 3) Describe the information that you think is critical to communicate to the accepting nurse when you transfer your patient to the general medical surgical unit/to have in the handoff you receive from the ICU nurse when you accept a patient transfer; 4) What do you worry about when you transfer a patient to the general medical surgical unit/when a patient is transferred from the ICU to your unit? 5) Do you believe there are potential adverse patient outcomes or delays in care as a result of our current transfer process? If yes, what are they? and 6) What do you believe should be the gold standard for transferring a patient? (See Appendix B) The receiving nurses were also asked what types of information were missing when a patient is transferred from the ICU and how much average time the nurse spends filling in those gaps of information.

**Documentation Review**

Additional data regarding patient care orders and documentation were collected through concurrent chart reviews. Data elements collected included number of post-transfer medication orders; number and type of post-transfer treatment orders; number of post-transfer verbal orders; and number of uncharted medications by the sending unit. Analysis of medication and treatment orders post-transfer provided concrete information about workload required by the receiving nurse. The number of uncharted medications upon transfer and post-transfer verbal orders also provided data that reflects the time involved for the receiving nurse in the overall transfer process.
Data Validation

A process to ensure the inter-rater reliability and validity of data collected was followed by both observers at the end of each observation. This process was a face-to-face meeting to discuss both observations and interviews and review the information documented. Furthermore, after three observed transfers, the observers met with the two designated qualitative research experts to further review and validate the data and methods. No alterations were made in research design or data collection methods as a result of this meeting. Consequently, the remaining observations were completed using the same methods. After all eight transfer encounters were observed and interviews completed, the trained observers met to determine formatting for the electronic spreadsheet for data entry. The resulting electronic workbook included seven spreadsheets: 1) pre-transfer activities (Appendix C), 2) ICU handoff (Appendix D), 3) receiving unit handoff (Appendix E), 4) post-transfer activities (Appendix F), 5) ICU interview (Appendix G), 6) medical surgical interview (Appendix H), and 7) chart review (Appendix I). Each observer entered collected data into spreadsheet format exactly as written and all data was reviewed in final format by both observers.

Data Analysis

Time spent on various pre and post transfer activities were analyzed and compared in order to determine impact on nursing process and workflow. Knowledge and opinions shared by the nurse subjects were explored and compared to determine trends in current culture and practice.
Data collected through interviews were analyzed using Spradley’s Domain Analysis (1979). According to Spradley (1979), culture can be understood not just through description, but also through explanation. This cultural knowledge can be gained through a systematic process which can be organized in a structured manner (Spradley, 1979).

Spradley’s Domain Analysis includes categorizing elements into domains, which include three components (Parfitt, 1996). The first component is a *cover term*, which is a name of a category of knowledge. The second component is the *included or native term*, which belongs to that category of knowledge. The third component is the *semantic relationship*, which defines the relationship between terms, thus making them valid (Parfitt, 1996).

Table 1 lists the nine semantic relationships defined by Spradley (1979).

<table>
<thead>
<tr>
<th>Spradley’s Nine Semantic Relationships</th>
</tr>
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<tbody>
<tr>
<td>1. <em>Strict inclusion</em>: <em>X</em> is a kind of <em>Y</em></td>
</tr>
<tr>
<td>2. <em>Spacial</em>: <em>X</em> is a place in <em>Y</em>; <em>X</em> is a part of <em>Y</em></td>
</tr>
<tr>
<td>3. <em>Cause-effect</em>: <em>X</em> is a result of <em>Y</em></td>
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<tr>
<td>4. <em>Rationale</em>: <em>X</em> is a reason for doing <em>Y</em></td>
</tr>
<tr>
<td>5. <em>Location for Action</em>: <em>X</em> is a place for doing <em>Y</em></td>
</tr>
<tr>
<td>6. <em>Function</em>: <em>X</em> is used for <em>Y</em></td>
</tr>
<tr>
<td>7. <em>Means–end</em>: <em>X</em> is a way to do <em>Y</em></td>
</tr>
<tr>
<td>8. <em>Sequence</em>: <em>X</em> is a step (stage) in <em>Y</em></td>
</tr>
<tr>
<td>9. <em>Attribution</em>: <em>X</em> is an attribution (characteristic) of <em>Y</em></td>
</tr>
</tbody>
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Table 1 Spradley’s Semantic Relationships
For this study, an adaptive method of Spradley’s Ethnography was used. This method included five steps: (a) The question under study is determined to be best answered using subjects’ own language or native terms, (b) Data are gathered using the verbatim responses of subjects to open-ended questions, (c) Subjects’ native terms are transcribed (typed verbatim) from the open ended responses according to each subject’s responses, (d) Responses are organized around each question, and (e) Subjects’ responses are analyzed using a content analysis method to determine the distinguishing factors in the responses to the same questions and to develop a set of categories reflective of these responses. This portion of the data analysis is known as “Domain Analysis” (McNeil, Elfrink, Beyea, Peirce, & Bickford, 2005).

Conclusion

This chapter focused on the description of the study population and methods used to gather and organize data in order to address the research aims of exploring current nursing handoff processes surrounding patient transfers from ICU to general medical surgical unit, identifying data elements that nurses define as essential to safe and effective transfer of patient care, and determining factors that may impact the optimal delivery of the handoff. Eight transfer encounters were observed and documented on a standardized tool in two ICU and six general medical surgical units within an academic medical center. The sixteen nurses involved in these transfers were also interviewed using a predetermined set of questions. Key elements of documentation were reviewed in the eight medical records in order to determine further impact of the transfer process.
Data were analyzed using time measurements and defining relationships of transfer elements and tasks using *Spradley’s Domain Analysis.*
CHAPTER 4

Findings

This chapter will describe the findings of the observations, interviews, and chart reviews for all eight ICU to general medical surgical floor transfer encounters. The findings will be presented sequentially by process: the ICU nurse experience, the handoff communication, the receiving nurse experience, the analysis of the interviews, and the medical chart review.

*The Experiences of the ICU Nurses*

The pre-transfer process was observed in the ICU settings. Four observations occurred at the main hospital ICU where nurses typically care for one to two patients, patient care orders are ordered via an electronic physician order entry system, and clinical documentation is recorded in an electronic documentation that does not interface with the order entry system. Four observations occurred at the community hospital ICU where nurses typically care for one to three patients, patient care orders are ordered via an electronic physician order entry system, and clinical documentation is recorded on paper forms.
The total time spent by the ICU nurses on pre-transfer activities (not including the actual handoff communication with the receiving nurse) during the eight observed encounters was 216.17 minutes. The time spent on pre-transfer activities ranged from 16.17 minutes to 47 minutes, with a 27.1 minute average. There were no trends differentiating between the two ICU settings. This pre-transfer preparation was often interrupted by activities for other patients, yet similarities were found in the types of activities performed. The pre-transfer activities observed were reviewed and sorted into categories to better understand how the ICU nurses spend time preparing for transferring patients (see Table 2).

Although not every category of activity was observed in every transfer encounter, the
most time was spent on communication with patient and family, equipment and supplies, and reviewing or recording orders, work-lists, or documentation.

The Handoff Communication

ICU nurses communicated a variety of demographic, physical, and social assessment data elements in handoff report to the receiving medical surgical unit nurse (see Table 3). Age, sex, diagnosis and heart rhythm were the only data elements present in all observed handoff communication encounters. The majority of data elements that were reported in at least six handoffs were related to care needs, such as IV lines, medications, allergies, family issues, lab values. The physical assessment findings that were reported in at least six handoffs were related to heart rhythm, as noted above, pulmonary assessment and oxygen needs. All other physical assessment findings varied in number of times reported. Safety needs such as falls prevention and bed entrapment risk were not reported in any handoff.
<table>
<thead>
<tr>
<th>Data Element</th>
<th># Handoffs where reported</th>
<th>Data Element</th>
<th># Handoffs where reported</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>8</td>
<td>Intake &amp; Output</td>
<td>2</td>
</tr>
<tr>
<td>Sex</td>
<td>8</td>
<td>Transfusions</td>
<td>2</td>
</tr>
<tr>
<td>Diagnosis</td>
<td>8</td>
<td>Pupils</td>
<td>2</td>
</tr>
<tr>
<td>Heart Rhythm</td>
<td>8</td>
<td>Abdomen</td>
<td>2</td>
</tr>
<tr>
<td>Service/Attending</td>
<td>7</td>
<td>Wound/Incision</td>
<td>2</td>
</tr>
<tr>
<td>Pulse</td>
<td>7</td>
<td>--date of insertion</td>
<td>2</td>
</tr>
<tr>
<td>Oxygen</td>
<td>7</td>
<td>plan</td>
<td>2</td>
</tr>
<tr>
<td>Oxygen Saturation</td>
<td>7</td>
<td>activity</td>
<td>2</td>
</tr>
<tr>
<td>Lab Values</td>
<td>7</td>
<td>diet</td>
<td>2</td>
</tr>
<tr>
<td>Orientation</td>
<td>7</td>
<td>Reflexes</td>
<td>1</td>
</tr>
<tr>
<td>Pulses</td>
<td>7</td>
<td>Heart Sounds</td>
<td>1</td>
</tr>
<tr>
<td>Lung Sounds</td>
<td>7</td>
<td>Capillary Refill</td>
<td>1</td>
</tr>
<tr>
<td>IV Lines</td>
<td>7</td>
<td>Bowel Sounds</td>
<td>1</td>
</tr>
<tr>
<td>Allergies</td>
<td>6</td>
<td>--date of insertion</td>
<td>1</td>
</tr>
<tr>
<td>Blood Pressure</td>
<td>6</td>
<td>Tube Feedings</td>
<td>1</td>
</tr>
<tr>
<td>Medications</td>
<td>6</td>
<td>--date of insertion</td>
<td>1</td>
</tr>
<tr>
<td>Ng/Dobhoff/PEG/JTubes</td>
<td>6</td>
<td>Braden Assessment</td>
<td>1</td>
</tr>
<tr>
<td>Skin Condition</td>
<td>6</td>
<td>social/profession</td>
<td>1</td>
</tr>
<tr>
<td>Procedures</td>
<td>6</td>
<td>headache</td>
<td>1</td>
</tr>
<tr>
<td>Family Issues</td>
<td>6</td>
<td>pain</td>
<td>1</td>
</tr>
<tr>
<td>Cough</td>
<td>5</td>
<td>home situation</td>
<td>1</td>
</tr>
<tr>
<td>Bowel Function</td>
<td>5</td>
<td>admission date</td>
<td>1</td>
</tr>
<tr>
<td>Urine</td>
<td>5</td>
<td>Ventilator</td>
<td>0</td>
</tr>
<tr>
<td>Foley Catheter</td>
<td>5</td>
<td>--date of placement</td>
<td>0</td>
</tr>
<tr>
<td>Temperature</td>
<td>4</td>
<td>--settings</td>
<td>0</td>
</tr>
<tr>
<td>LOC</td>
<td>4</td>
<td>Chest Tubes</td>
<td>0</td>
</tr>
<tr>
<td>Sputum</td>
<td>4</td>
<td>Special Bed</td>
<td>0</td>
</tr>
<tr>
<td>Stool</td>
<td>4</td>
<td>Falls Prevention</td>
<td>0</td>
</tr>
<tr>
<td>Skin Color/ Temperature</td>
<td>4</td>
<td>Bed Entrapment</td>
<td>0</td>
</tr>
<tr>
<td>Respiration</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DNR Status</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tests</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>history</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3 Data elements on the Observation Tool reported by ICU nurses during handoff
The handoff communication reported by the ICU nurses was delivered by phone in all eight transfers. The observers also documented the materials used by the ICU nurses to reference for patient information as they reported the handoff to the receiving nurse. The paper medical record was used as a resource in six handoffs. In addition, in five of those six handoffs, the electronic order entry and/or documentation systems were also referenced during the handoff. In the other two handoffs, handwritten notes that the ICU nurse had used for shift report and then updated to the point of transfer were used as a reference.

All eight transfers occurred after the ICU nurses knew that the receiving unit had a vacant clean bed ready for the transferring patient. Three observed transfer encounters were impacted by issues that affected the timing or workflow for the ICU nurse: (a) a delayed time for transfer negotiated by the ICU and receiving nurse, (b) a need for the ICU nurse to obtain medications from the pharmacy prior to transfer, and (c) a procedure on another patient cared for by the ICU nurse.

Interruptions were noted during four of the eight handoff encounters. These interruptions were as follows: (a) questions by the family related to the transferring patient, (b) communication with another nurse in the ICU, and (c) two separate instances were due to care needs of other patients being cared for by the ICU nurse.

Behaviors and communication styles noted during seven of the eight ICU observations were described as pleasant, collegial, and friendly. The ICU nurses demonstrated willingness to clarify and answer questions. One ICU observation was described as
focused, where the nurse was not unfriendly, but rather direct and factual without informal conversation.

The handoff communication reported by the ICU nurse was received by the medical surgical nurse via phone in all eight encounters. The observers noted that in all transfers the medical surgical nurse had the opportunity to and did ask questions and clarifications. The questions and clarifications asked were documented by the observers. The content of questions and clarifications varied yet the majority of notations could be categorized into four categories: (a) IV lines/tubes/drains, (b) diet/feedings, (c) medications, and (d) labs.

The observers documented two trends across the majority of handoff encounters on the medical surgical unit end: 1) the nurses verbalized regular validation and/or repeat back to the ICU nurse and 2) the medical surgical nurses used a standardized tool to document the handoff report in seven of the eight transfer encounters. The standardized report tools were specific to each unit, serving the sole purpose for documenting transfer report on some unit, and serving the purpose of documenting multiple types of handoff, such as shift report, on other units. Even when the tools were used for documentation of the handoff communication, all queued fields were not necessarily used. Some medical surgical nurses documented notes on the queued form using the queues only as visual reminders, not necessarily as discrete fields for documenting data elements.
The Experiences of the Medical Surgical Unit Nurse

The post-transfer experiences were observed in the medical surgical units to which the patients were transferred. There were observations on six different medical surgical units, as each hospital had two transfers to the same unit. The medical surgical units in both hospitals use an electronic physician order entry system and record clinical documentation of medications in this same system. All other clinical documentation on these units is recorded on paper flow-sheets.

Nurses on the medical surgical units care for four to eight patients at a time, depending on the shift. All observations occurred on day or evening shift.

<table>
<thead>
<tr>
<th>Category</th>
<th># Minutes Spent per Observation</th>
<th>Total # Min</th>
<th>Ave # Min (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication with Patient and Family</td>
<td></td>
<td>93</td>
<td>11.63 (6.46)</td>
</tr>
<tr>
<td>Orders/Worklists/Documentation</td>
<td>2</td>
<td>80.5</td>
<td>10.06 (10.19)</td>
</tr>
<tr>
<td>Equipment/Supplies</td>
<td>3</td>
<td>62.25</td>
<td>7.78 (10.8)</td>
</tr>
<tr>
<td>Communication with Other Clinicians</td>
<td>2</td>
<td>20.5</td>
<td>2.56 (2.16)</td>
</tr>
<tr>
<td>Medications</td>
<td>1</td>
<td>2</td>
<td>0.25 (0.46)</td>
</tr>
</tbody>
</table>

Table 4 What types of post-transfer activities are medical surgical nurses performing?
After the medical surgical nurse received handoff report, the post transfer activities were observed (see Table 4). The activities were reviewed and sorted into categories in order to better understand how the nurses are receiving and settling in the patients who are transfers into the medical surgical unit. The most time was spent communicating with the patient and family, working with orders/work-lists/documentation, and gathering or setting up equipment/supplies.

The Interviews

During or after each observation, the observers completed an interview with the nurse being observed. The responses of the nurses were written by the observer on paper, and then transferred to an electronic spreadsheet. Table 5 presents the interview responses that were analyzed for the purposes of this study. The responses were analyzed using Spradley’s Domain Analysis (1979). Description of interview results will be reported by interview question followed by the domain analysis of responses.
Table 5 Interview questions analyzed for this study

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICU Nurse (n=8)</td>
<td>Can you describe the workflow involved when you are asked to transfer a patient to the general medical surgical unit? (Table 6)</td>
</tr>
<tr>
<td>ICU Nurse (n=8)</td>
<td>Can you describe the information that you think is critical to communicate to the accepting RN when you transfer your patient to the general medical surgical unit? (Table 7)</td>
</tr>
<tr>
<td>Medical Surgical Nurse (n=8)</td>
<td>Can you describe the workflow involved when you are asked to accept a transfer from the ICU unit? (Table 8)</td>
</tr>
<tr>
<td>Medical Surgical Nurse (n=8)</td>
<td>Can you describe the information that you think is critical to have in the handoff you receive from the ICU nurse when you accept the patient transfer? (Table 9)</td>
</tr>
<tr>
<td>Medical Surgical Nurse (n=8)</td>
<td>What pieces of information are missing when the patient is transferred from the ICU? How much time on average do you spend filling in gaps of information? (Table 10)</td>
</tr>
<tr>
<td>ICU Nurse and Medical Surgical Nurse (n=16)</td>
<td>What do you believe should be the “gold standard” for transferring a patient? (Table 11)</td>
</tr>
<tr>
<td>ICU Nurse and Medical Surgical Nurse (n=16)</td>
<td>Do you believe that there are potential adverse patient outcomes or delays in care as a result of our current transfer process? (Table 12)</td>
</tr>
</tbody>
</table>

**ICU Nurse Question:** *Can you describe the workflow involved when you are asked to transfer a patient to a general medical surgical unit?*

The workflow described by the respondents most often reflected the transfer that had just occurred. The descriptions varied in sequence, thus no pattern emerged. Some responses were more detailed and/or included various scenarios based on patient needs. Overall, categories of content of workflow emerged as shown in Table 6. Content of the ICU transfer workflow included in the actual report, transportation, and equipment and belongings were most prevalent in the descriptions.
Table 6 Content of workflow of ICU nurse preparing for transfer

<table>
<thead>
<tr>
<th>Cover Terms (n= # responses where cover term included)</th>
<th>Native Terms (Subjects’ own language)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Handoff Report (n=7)</td>
<td>Call report; Call in report; Give report; Talk with RN; Call unit; Speak to RN</td>
</tr>
<tr>
<td>Medications (n=3)</td>
<td>Drugs from pharmacy; Meds</td>
</tr>
<tr>
<td>Documentation/Orders (n=5)</td>
<td>Complete documentation; Check for orders; Update charting; Ensure chart is printed; Check all charting to ensure current; Check orders in computer; Document transfer note; Write transfer note; Finalize computer work</td>
</tr>
<tr>
<td>Transportation (n=7)</td>
<td>Transport when telemetry is involved; Is bed open- can bed come down; Arrange transport; Drop off patient; If transport is used, call them; Transport selves; May ask for bed from sending unit; Wait for transport; If telemetry, go with patient</td>
</tr>
<tr>
<td>Equipment/Belongings (n=7)</td>
<td>Personal belongings; Valuables; IV pumps; Respiratory equipment; Packing room; Gather belongings; Obtain portable monitor and oxygen if necessary; Ask PCA to pack belongings; Gather equipment; Pack patient</td>
</tr>
</tbody>
</table>

**ICU Nurse Question:** Can you describe the information that you think is critical to communicate to the accepting RN when you transfer your patient to the general medical surgical unit?

The ICU nurses had great variation in their explanations of critical information to include in handoffs to the medical surgical unit (see Table 7). No single category or data element was present in all eight interviews. Complete assessment was the most common category of information thought to be critical, yet it was present in only five responses.
Spradley’s Semantic Relationship: X is an attribute of Y
This data is a critical attribute of transfer handoff communication.

<table>
<thead>
<tr>
<th>Cover Terms (n= # responses where cover term included)</th>
<th>Native Terms (Subjects’ own language)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete Assessment (n=5)</td>
<td>Everything available; Head to toe; General assessment; More is better than the basics: Systems-neuro, cardiac, GU, GI, respiratory, vitals, skin, family (POA), vitals, fluids, drains, dressings, emotional needs; Brief assessment; Full report, possibly too extensive report</td>
</tr>
<tr>
<td>History (n=4)</td>
<td>History; Past medical history</td>
</tr>
<tr>
<td>Labs (n=3)</td>
<td>Usually labs are ok but not always; Labs due to be drawn; Anything you’ve treated lab-wise; Labs treated</td>
</tr>
<tr>
<td>Family/Social Issues (n=3)</td>
<td>Family issues and contacts; Family (POA); Family problems</td>
</tr>
<tr>
<td>Plan of Care (n=2)</td>
<td>Procedures which are planned; Plan of care for the patients</td>
</tr>
</tbody>
</table>

Table 7 Critical data to communicate in handoff from ICU to medical surgical unit

Medical Surgical Nurse Question: Can you describe the workflow involved when you are asked to accept a transfer from the ICU unit?

Similar to the responses of the ICU nurses when asked to define the workflow of preparing for transfers, the medical surgical nurses discussed the transfer that had just occurred (see Table 8), described varying sequence of steps, and no clear pattern emerged. All eight medical surgical nurses included the room set up and equipment gathering as a key component in preparing for transfers, suggesting that the readiness of the receiving room is a key driver of the transfer workflow. Otherwise, the most common categories were found to be those surrounding communication about the patient, whether written such as orders and work-lists, or verbal such as delegation with ancillary staff, notification of transfer by the charge nurse, and the actual handoff report from the ICU nurse.
Spradley’s Semantic Relationship: X is a part of Y
This content is part of medical surgical preparation workflow.

<table>
<thead>
<tr>
<th>Cover Terms (n= # responses where cover term included)</th>
<th>Native Terms (Subjects’ own language)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set up room/equipment (n=8)</td>
<td>Ready the bed; Set up telemetry if applicable; Check to see if room clean; Hear monitor or oximeter; Gather supplies and equipment; RN sets up room and telemetry if needed; Name on wall; BP cuff; Set up room; Telemetry box; Zero the bed for transfer; Check room ready; Ensure O2 and suction setup are in room; Check monitor and apply telemetry; Set up room based on what’s going on- supplies, O2, bedpan, etc.</td>
</tr>
<tr>
<td>Receive transfer information from charge nurse (n=6)</td>
<td>Complete top of report sheet with diagnosis/history; Charge RN tells receiving RN- slip of paper is completed with room, name, diagnosis, MD, telemetry; Charge RN gives report sheet with top portion completed; Find out about the patient; Get patient info from charge RN such as name, admission diagnosis, room number; Short report from charge RN such as diagnosis, Brief status-O2, isolation</td>
</tr>
<tr>
<td>Receive handoff report (n=5)</td>
<td>Take report; Get report from sending RN; Obtain report; RN calls- this time varies; Receive telephone report- about five minutes average; Ask a lot of questions; Report</td>
</tr>
<tr>
<td>Worklists/Orders (n=4)</td>
<td>Check orders once patient is entered; Once have name, print worklist; Accept transfer in computer and print worklist; Tech prints worklist; Check transfer orders- compare with report and check med times; May check red back chart to look at past documentation; Review orders with team if needed</td>
</tr>
<tr>
<td>Communication/delegation with ancillary staff (n=4)</td>
<td>Alert the PCA; Tech will weigh patient; Report to tech; Have PCA unpack belonging; Alert the PCA and give brief report; UCA arranges transport and sets up chart and wristband; UCA readies chart</td>
</tr>
</tbody>
</table>

Table 8 Content of workflow of medical surgical nurse preparing for transfer
Medical Surgical Nurse Question: What pieces of information are missing when the patient is transferred from the ICU? How much time on average do you spend filling in gaps of information?

The medical surgical nurses were asked to respond based on overall experiences of receiving transfers. The amount and content of missing information varied greatly (see Table 9). The second part of this question relates to the amount of time on average the nurses spend seeking the missing information. Five of the eight medical surgical nurses addressed this part of the question. Four of these nurses stated times ranging from ten minutes to one hour, and one nurse stated the amount of time varies based on what information is missing.

<table>
<thead>
<tr>
<th>Spradley’s Semantic Relationship: X is an attribute of Y</th>
<th>This data are attributes that were missing from the transfer handoff communication.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cover Terms</strong> (n = # responses where cover term included)</td>
<td><strong>Native Terms (Subjects’ own language)</strong></td>
</tr>
<tr>
<td>Specific clinical information missing (n=3)</td>
<td>Medications- did they give their recent meds, especially X1 meds; Lines-when dressings were changed; Other dressings-when need to be changed</td>
</tr>
<tr>
<td>Varied missing information (n=3)</td>
<td>Always seems to be some piece of information missing; It depends on the report; No standardized report sheet; Means that what may be missing is dependent on the person giving and receiving report; Depends- if transfer early in the morning and nurse doesn’t know patient as well or if busy and may forget to tell me; Nothing consistent</td>
</tr>
<tr>
<td>Nothing is missing (n=2)</td>
<td>Nothing- history is there; Generally they tell you the info you need</td>
</tr>
</tbody>
</table>

Table 9 Information missing upon transfer to the medical surgical unit
ICU and Medical Surgical Nurse Question: What do you believe should be the “gold standard” for transferring a patient?

All sixteen nurses were asked to identify the ideal process for transferring a patient (see Table 10). The most common theme among respondents is the need for the nurse to feel prepared for the transfer, whether sending or receiving, to ensure no loss of continuity of care for the patient. Face to face handoff was also determined to be a component of the ideal transfer.
Spradley’s Semantic Relationship: X is an attribute of Y
These elements are attributes of the “gold standard” of transfer processes

<table>
<thead>
<tr>
<th>Cover Terms</th>
<th>Native Terms (Subjects’ own language)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepared for/ comfortable with transfer (n=8)</td>
<td>Room is set up and ready when patient arrives; Proper reporting, always including right information; Know of the transfer ahead and have time to prepare and settle other patients; No surprise; Patient must be stable; History; Orders placed and receiving unit can see orders before patient is here; Complete, concise report; No loss of continuity of care; Both patient and family should feel comfortable with the transfer and that the patient is getting better and that nothing is lost in translation so to speak; Timeliness- transfer as soon as able (not saved until end of shift) once orders; Would like hospital to be on one charting system</td>
</tr>
<tr>
<td>Face to face handoff (n=6)</td>
<td>Whoever brings the patient stays with the patient until the nurse gets into the room; Sending RN comes in if has monitor; Sending RN helps with transfer by bringing meds and helps anticipate needs; Beside report with RN to RN face to face with patient present and chart at bedside; Ensure patient is seen upon transfer with greeting; Able to have RN in room when patient arrives; Being with the next nurse is usually best for all</td>
</tr>
<tr>
<td>Standardized report form (n=5)</td>
<td>A standardized report with comments section; Check off sheet on the receiving end; Some nurses have report sheets which would help facilitate this process; Use of check sheet; A standardized report which tells the RNs what they should give</td>
</tr>
</tbody>
</table>

Table 10 “Gold standard” for transferring patients
ICU and Medical Surgical Nurse Question: Do you believe that there are potential adverse patient outcomes or delays in care as a result of our current transfer process?

As Table 11 describes, eleven of the sixteen nurses believe that there are potential delays or adverse patient outcomes as a result of the current transfer processes, reflecting practice at both hospitals. Nurses voice concerns of high activity and high acuity units where even the best attempts to maintain smooth transfer and communication flow are often challenged. Lack of standardized processes and reliance on other staff, such as housekeeping and transportation, to facilitate optimal flow of the patient were also stated as causes of potential delays or adverse outcomes.
<table>
<thead>
<tr>
<th>Response</th>
<th>Verbatims</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes ((n=11))</td>
<td>Especially when we are busy, care can be delayed; Sometimes the patient is transferred too soon from ICU; Always potential adverse outcomes—it depends—the more standardized we get with the transport report the better the care; Because of different computer systems in ICU—can’t see documentation; When get report, don’t always come right away which can create problems with my readiness even with the best attempts to get organized; Not sure what would make it better; Some nurses are more thorough; Sometimes you can’t get in there and do everything at once—depends on the person; Depends on where they come from; Not seeing patient in a timely manner; Time to get beds cleaned on the receiving end; Some issues like the “telephone game” where info is lost; Some units vs. charts and info may or may not get lost in the shuffle; Not knowing where to find the info; Patient is not stable; Medication error could be one</td>
</tr>
<tr>
<td>No ((n=4))</td>
<td>Not usually from the ICU; Pretty solid process; No; RN stays with new nurse so she can ask additional questions</td>
</tr>
<tr>
<td>Other ((n=1))</td>
<td>Care Tech implied that the chart and the patient was there and that was how it was supposed to work</td>
</tr>
</tbody>
</table>

Table 11 Do ICU and medical surgical nurses believe there are potential adverse patient outcomes or delays in care as a result of current transfer process?

**Chart Review**

A brief chart review was completed after each observation. For the purposes of this study, uncharted medications and verbal orders surrounding each transfer encounter were counted to determine any impact on the outcome of the transfer process. The presumption is that all medications are charted in the ICU by the time the patient transfers to the medical surgical unit. The presence of verbal orders post transfer may indicate time spent by the nurse clarifying and adjusting orders that should have been completed by the receiving physician team. Table 12 shows that in six observations, no verbal orders were entered by the receiving unit post-transfer. Two medical surgical unit observations ended prior to the observers knowing if verbal orders were required.
Documentation review in two of the eight transfer encounters revealed uncharted medications in the ICU after the patient had transferred. The results in observation seven appear to be a technical issue in the documentation system, therefore were not counted. The two encounters where uncharted medications were found revealed that all but one medication was the documentation responsibility of Respiratory Therapy, not nursing.

<table>
<thead>
<tr>
<th>Chart element</th>
<th>Obs 1</th>
<th>Obs 2</th>
<th>Obs 3</th>
<th>Obs 4</th>
<th>Obs 5</th>
<th>Obs 6</th>
<th>Obs 7</th>
<th>Obs 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncharted Medications</td>
<td>unknown</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>a</td>
<td>0</td>
</tr>
<tr>
<td>Verbal Orders</td>
<td>unknown</td>
<td>unknown</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 12 Number of uncharted medications and verbal orders per observation

a several duplicate medications in electronic documentation system- technical and clinical follow-up required beyond the scope of this study

Study Limitations

Even with such diligence to validate all methods and data, this study has several limitations. Though necessary for qualitative design, one limitation is the presence of a direct observer during data collection. There is a potential for the Hawthorne effect, where the behavior of a nurse is altered simply because it is known that the transfer encounter is being observed for a study (Burns & Grove, 2005).

Second, this study represents transfers from two ICU settings in one academic medical center. The handoff process and communication noted during this study may not reflect the process used between other units or institutions. Thirdly, this study has a small sample size. For this reason, more research is warranted before applying any conclusions
to a larger population (Collinridge & Gantt, 2008). Finally, only transfers encounters in which the nurses volunteer to participate were included. Potential sampling bias occurs because it is not known if results are impacted by the voluntary nature of participation by the nurses.

**Conclusion**

This chapter presented the findings from observations, interviews and chart review of eight ICU to medical surgical unit transfer encounters. Time spent by the nurses preparing to send or receive transfer patients was measured and the tasks performed during these times were compared for commonalities and differences. Although processes, responses, and outcomes varied, common themes were found through analysis of native terms using *Spradley’s Domain Analysis* (1979).
CHAPTER FIVE

Discussion

This chapter will present discussion of the data findings including implications and suggestions for further study. The discussion will relate the findings to the two stated purposes of this study: 1) to examine patient care handoffs between the ICU nurses and the general medical surgical nurses during the point of transfer of care of a sample of patients at a large academic Medical Center; and 2) to determine the data elements that nurses define as essential to safe and effective transfer of patient care, and factors that may impact the optimal delivery of the handoff information.

Data collected from the observations, interviews and documentation review provided a sample of the actual processes of nurses, the described processes of the nurses, and the described ideal processes of the nurses during the sending and receiving of patients from ICU to the medical surgical unit. The data provides an opportunity to explore and compare what nurses say they do during transfer encounters, what the nurses actually do during transfer encounters, and what nurses believe are ideal practices for transfer encounters.

The ICU Experience

The description of pre-transfer processes by the ICU nurses most commonly included handoff report, transportation, and working with documentation and orders. In the observations of ICU nurses, pre-transfer processes most often included
communication with the patient and family, preparing equipment and supplies, and working with orders, worklists and documentation. The nurses in the ICU may neglect to describe their interactions with the patient and family as part of their processes because they see it as inherent part of every process of nursing care. Similarly, the handoff report is the one step in the transfer process that is required in order for the receiving nurse to accept the patient and was handled as a separate data collection point in this study. A future study might include clarifications from the nurses as to the components of their transfer processes that they consider inherent, therefore offering rationale for inclusion or exclusion from a verbal description.

*The Handoff Communication*

The handoff communication observations revealed data elements included in handoff, as well as method and tools used while giving and receiving the handoff communication. While all eight transfer encounters included handoff communication by phone, the nurses clearly include face to face communication as an ideal method for transfer handoff. In this setting, there is face to face communication if the patient is on a cardiac monitor; however this face to face time is not intended for primary communication of transfer report.

Beyond the patient demographic information, the elements reported in the actual handoff communication varied greatly depending on the health status and care needs of the patient. All eight observed handoffs included physical assessment data and information regarding completed and planned interventions. Family issues were included
in six of the eight encounters, yet other patient psychosocial information, such as home situation, social, and professional information was included in only one encounter. Safety assessments, such as Braden assessment, falls prevention, and bed entrapment risk, were another category of information rarely, if ever, reported. These findings suggest that the emphasis of the actual handoff communication tended to be on physical assessment and interventions. Because this information is documented in multiple places of the paper chart and computer system, focusing on these elements in the handoff may serve as way to gather the patient data and ensure completeness of the information. When asked what critical elements should be included in ideal handoff report, the respondents most commonly noted complete assessment and history. The complete assessment was definitely validated in the observations. However, history was only reported in three of the actual handoff encounters.

The tools used to support the handoff communication were most commonly a combination of the paper medical chart and the computer systems. When describing the potential delays or adverse outcomes related to current processes, the respondents did list the presence of multiple computer systems and lack of integration of patient information as contributing factors. Further analysis is needed to better understand the rationale for using either or both the paper chart and computer system, such as the data elements are referred to, the type and purpose of the computer systems used in each area, and the reason for the preference of the nurse to use the tools. As this institution updates and/or adds clinical computer systems, further study related the use of these systems in the
handoff communication process may offer opportunities for clinician communication and workflow improvement.

The Medical Surgical Experience

The description of post-transfer processes by the medical surgical unit nurses most commonly included setting up the room and equipment, receiving initial transfer information from the charge nurse, and receiving handoff report. In the observations of medical surgical unit nurses, post-transfer processes most often included communication with the patient and family, working with orders, worklists and documentation, and preparing equipment and supplies. Similar to the ICU nurses, the medical surgical nurses may not be as aware of the time spent communicating with the patient and family due to the pervasiveness of this communication throughout the nursing process. The receipt of the initial transfer information from the charge nurse was commonly described as one of the initial components of the transfer process for the receiving nurse and served as a trigger for them to re-evaluate their workflow in order to begin their planning process. The actual handoff communication was observed separately in this study so was not documented as a post-transfer activity. Setting up equipment and supplies was a common category of activity both described and observed in their transfer process. As noted previously, the readiness of the receiving room is clearly a key driver in the efficiency of the transfer process. Also noted in the observations was the involvement of other staff, both nurses and ancillary staff, in the cleaning and setting up of the room and gathering of equipment. Equipment is not always available on the unit, which also impacts the staff
and time involved in room setup. Further analysis of the availability, storage, and tracking of supplies and equipment, as well as communication and throughput with support services such as housekeeping and biomedical services, would be helpful in fully understanding and improving the clinical workflow and patient throughput during the transfer process.

The Interviews

The Domain Analysis of the interview data showed presence of two of the nine semantic relationships: (a) spatial- X is a part of Y, and (b) attribution- X is an attribute of Y. While the presence of these two relationships was not surprising, as the respondents clearly described components of the transfer processes and handoff communication, the absence of the sequence relationship where X is a step in Y was unexpected. The sequence relationship implies a series of steps in sequential order. The nurses were not consistent in describing the transfer processes from the sending or the receiving perspectives and their responses indicated no pure series of steps. Therefore, the spatial relationship where X is a part of Y was a more accurate definition in the description of pre- and post-transfer processes.

The Chart Review

The results of the documentation review showed that the nurses involved in the observed eight transfer encounters spent little time working with verbal orders or uncharted medication follow-up post-transfer. Further study is needed to obtain more
detailed knowledge of the relationship between the handoff communication process and the quality of documentation and patient care outcomes. Suggestions for future research include more detailed observation of the post-transfer process to include the time spent and actions required as nurses clarify and pursue information regarding physician orders.

The “Gold Standard” for Transfer Process

The ICU and medical surgical nurses were asked to describe the ideal transfer process as part of the interview. Interestingly, they did not describe as series of steps, and most did not even describe components of the transfer process. Rather they described general circumstances that create an ideal transfer process, such as feeling prepared for the transfer and comfortable with the patient’s status.

Face-to-face handoff was also often described as a component of ideal transfer process. Although this currently occurs after the phone handoff for cardiac-monitored patient transfers from the ICU setting to the medical surgical unit, the nurses view face-to-face handoff communication ideally used as the primary communication vehicle during transfer. The nurses stated that this ideal communication process would include review of the patient status with the patient and medical chart present.

Finally, the use of a standardized report sheet was noted as the ideal tool to ensure complete handoff communication for transfer encounters. While standardized report tools were used on the general medical surgical units in the observed transfers, the nurses suggest that the ideal would be that both sending and receiving units use tools to ensure completeness and accuracy of the patient information included. A point of further study
is the format and elements included in the ideal tool used for transfer handoff communication.

Conclusion

This chapter presented discussion of the data findings and implications for future study. Analysis of the eight transfer encounter observations revealed categories of processes included in transfer handoff, yet no common sequence in process emerged. This suggests that the nurses vary their process according to the patient situation.

Analysis of interviews shows similarities in the described transfer processes and the actual transfer processes with the exception of communication with patient and family. The nurses might view communication with patient and family as an inherent part of their care processes, thus not include it in narrative descriptions.

Nurses and other nursing staff members spend significant time gathering equipment and supplies and ensuring that the receiving room is ready for the transferring patient. Readiness of the room emerged as a key driver of the transfer nursing and patient throughput processes. The nurses’ comfort and readiness for the transfer was also described by the nurse respondents as a top priority for best practices in transfer handoff, as feelings of preparedness enable optimal patient safety outcomes.

Comparison of actual, described actual, and described optimal transfer processes of the nurses’ show that the observed nurses in the sample follow similar processes that are described. The primary difference is the regularity with which they practice the processes they describe. The nurse respondents describe face-to-face handoff and using standardized tools for handoff communication as best practices. These practices were
observed in this study, yet not consistently in any area. Further suggestions for process improvement may be to further examine the consistent use of these practices and the impact on patient care and throughput outcomes.
CHAPTER 6

Conclusion

The purpose of this study is to analyze the nurses transfer process as patients transferred from the ICU to general medical surgical units in a large academic medical center, and to explore the data elements that nurses define as essential to safe and effective transfer of patient care, and factors that may impact the optimal delivery of the handoff information. Data were collected through observations of the ICU and medical surgical unit nurses, interviews of the nurses regarding current and ideal processes surrounding patient transfers, and chart reviews of data elements related to transfer outcomes. Observation of pre- and post-transfer activities was documented and analyzed based on time spent performing categorized tasks. Charts were reviewed for number of uncharted medications pre-transfer and number of verbal orders post-transfer. Interview responses were analyzed using a modified Domain Analysis method based on Spradley’s Ethnography (1979).

Results of this study explore the types of activities nurses perform pre- and post-transfer and compare those activities to the described actual and described ideal processes identified by the nurses in interviews. Elements of information included in the handoff
communication were observed and documented, then compared to the stated actual and ideal according to the respondents. Although sequence of transfer components varied in both the observed activities and the described activities, the pre- and post-transfer processes were able to be categorized. Interview responses were analyzed using a modified version of Spradley’s Domain Analysis (1979). Two of the nine defined semantic relationships were found to be present: (a) spatial where X is a part of Y, and (b) attribution where X is an attribute of Y. This relationship analysis enabled understanding of the interviews across responses.

This study is an important contribution for nursing practice and health systems because it explores a key component of patient safety- the transfer of care from one clinician to another. Effective coordination and accurate communication among staff is a key component in the delivery of quality nursing care (Stople & Ottani, 2006) that can optimize the transfer process and patient outcomes (Lin et al., 2008). This study provided an opportunity to examine a sample of transfers and validate effective processes in place and identify opportunities to improve components of the transfer process.

Additional research is needed in order to better understand the transfer handoff communication process within the complexities of various healthcare settings. Future study opportunities include larger sample analysis of the transfer handoff communication process in other areas of this institution as well as exploration of the handoff process in other institutions in order to validate the information presented. The results of this study suggest additional research needs regarding tools nurses use to support the handoff process and the role of the electronic documentations systems as a resource in the handoff.
process. Further exploration of the nursing role and activities in the ICU to medical surgical unit transfer process is also warranted in order to increase efficiency and effectiveness of clinician workflow and communication, as well as improve patient safety and throughput.
References


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Appendix A: Observation Tool

See attached file “Transfer of Patient Care: Appendix A”
Appendix B: Interview Questions

See attached file “Transfer of Patient Care: Appendix B”
Appendix C: Pre-Transfer Activities

See attached file “Transfer of Patient Care: Appendix C”
Appendix D: ICU Handoff

See attached file “Transfer of Patient Care: Appendix D”
Appendix E: Receiving Unit Handoff

See attached file “Transfer of Patient Care: Appendix E”
Appendix F: Post-transfer Activities

See attached file “Transfer of Patient Care: Appendix F”
Appendix G: ICU Interview

See attached file “Transfer of Patient Care: Appendix G”
Appendix H: Medical Surgical Interview

See attached file “Transfer of Patient Care: Appendix H”
Appendix I: Chart Review

See attached file “Transfer of Patient Care: Appendix I”