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Nurses' Perspectives on Handoff Practices That Promote Patient Safety

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Nurses' Perspectives on Handoff Practices That Promote Patient Safety

by

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DISSERTATION

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Dedication and Acknowledgements

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Nurses' Perspectives on Handoff Practices That Promote Patient Safety

Abstract

Patricia Birmingham

Effective handoff communication is critical in promoting patient safety. At change of shift, nurses exchange patient information, but little is known about nursing handoff practices and patient safety. The purpose of this research was to examine nurses' perspectives on handoff practices that promote patient safety and to identify conditions and processes that pose risks for patient care.

This grounded theory study was conducted in two medical-surgical units in an urban academic institution with a purposive sample of 21 nurses using semistructured interviews and 87 ethnographic observations. Data were collected and analyzed simultaneously using constant comparison and positional mapping.

Nurses maintained patient safety during handoffs by *painting a full picture* of patients so that oncoming nurses were well-prepared with information to prioritize assessments and detect changes in a patient's condition. Processes that promoted painting a full picture were *organizing information*, *asking and answering questions skillfully*, and *engaging in respectful dialogue.* Conditions that facilitated painting a full picture were respect, trust, time, private space, and face-to-face oral communication. Interpersonal tensions, lack of time, interruptions, and noise often hindered nurses' practices and jeopardized patient safety. Nurses' perceptions of the effectiveness of handoffs often depended on the position of the nurse in the handoff as either the oncoming or offgoing nurse.

Quality handoff information depended on an offgoing nurse arriving at handoff

with a grasp of their patients. To acquire a grasp, nurses gathered and synthesized information throughout their shift. As nurses did so, they were actively *constructing the story* of the patient. Processes that facilitated constructing the story were receiving *good handoff reports*, *assessing the patient*, *cueing in,* and *writing it down*. While constructing the story, nurses were prioritizing assessments and detecting patient changes. Poor handoff reports, staffing constraints, and unpredictable patient flow challenged nurses in constructing the story. Nurses may arrive at the handoff with a poor grasp posing risks for patients.

Future research interventions need to consider the position of the nurse in the handoff. Research comparing handoff practices in units with good and poor clinical environments is needed.

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Chapter One

Introduction

Patricia Birmingham

In the 35 years that preceded my acceptance into the doctoral program in nursing at the University of California, San Francisco, I practiced in several health care settings, which ranged from acute care units to outpatient clinics. For over 20 of those years, I worked directly with patients; for 15 years, I worked in nursing managerial positions. As I gained more experience in the managerial world, I became even more interested in the nexus between communication and patient safety. I was frequently called upon to mediate communication breakdowns among and between clinicians, including nurses and physicians. Concerned with how easily patients could be overlooked in the midst of highly charged, verbal skirmishes, I became particularly curious about communication among and between clinicians and its effect on patient safety.

Upon entering the doctoral program, I soon learned that little was known about nurse-to-nurse communication and patient safety. Even more surprising were the gaps in knowledge about nurses' handoff communication and patient safety. In 2008-2009, I conducted a pilot study of intershift handoffs. I discovered that handoff communication was much more complex than I had thought originally. This discovery led me to my theoretical perspectives about patient safety and to my dissertation research.

Theoretical Perspectives

My passion for patient safety began early in my nursing career. I had just completed my first 6 months as a student nurse when I experienced a medication error. Although my instructor showed me how to administer the medication, as written by the physician, she failed to notice that the prescription had been written incorrectly. Luckily, the error was caught in time, and the patient suffered no major problems. But that experience had an indelible influence on the rest of my nursing career.

I was struck by how easily mistakes could be made. Over the next several decades, I witnessed and heard about nurses making errors. Some were minor, but others caused catastrophic outcomes for patients and other nurses. More often than not, failures within the health care system had contributed to these errors, but individual nurses usually had to bear the blame. I quickly learned that there were "gaps in the system," and I often found myself trying to protect patients from them. At the same time, I was constantly on the lookout for errors. Today, these practices are conceptualized more fully in patient safety theories, such as organizational accident theory and theories of high reliability organizations.

Organizational Accident Theory

Organizational accident theory examines medical errors from a system-level perspective rather than the traditional method of blaming the individual for mishaps (Reason, 1990). From this theoretical perspective, "cracks" or weaknesses in a system may lie dormant for years: These weaknesses are called latent conditions. Nurses are committed to protect patients from the potential risks that are inherent in these latent conditions (Reason, 2004), which are often the result of earlier decisions about resources, equipment, technology, and policies and procedures. The problem is these latent conditions can become active failures that trigger a catastrophic event. The organizational accident theory assumes that individuals will often and unintentionally make errors. Accordingly, organizations must focus on weaknesses within the system, including regular evaluation of the systems' defenses, to prevent catastrophic errors (Reason, 1990, 2000).

High Reliability Organizations

In contrast to organizational accident theory, theories on high reliability organizations assume that risk cannot be eliminated and that the strongest defense is to develop resilience or the ability to adapt to changing and challenging conditions (Blatt, Christianson, Sutcliffe, & Rosenthal, 2006; Lyndon & Kennedy, 2010; Rasmussen, 2003; Weick, 1995). The high reliability organization perspective resists a culture that accepts substandard processes or oversimplification (Weick & Sutcliffe, 2007), as described in Vaughan's (1996) analysis of the explosion of the space shuttle, Challenger. Instead, the theory of high reliability organizations argues for individual and collective responsibility for patient safety through preoccupation with failure, reluctance to oversimplify, seeing what one is actually doing rather than what one is supposed to do, commitment to resilience, and deference to expertise (Weick & Sutcliffe, 2007).

The theories of high reliability organizations together with organizational accident theory are particularly useful because they make responsibility for patient safety a collective endeavor. However, these patient safety theories cannot explain why it is difficult for one to speak up when one sees (a) latent conditions in the environment, (b) unsafe practices, or (c) avoidance of conflict over adherence to patient safety (Lyndon & Kennedy, 2010). Although organizational accident theory focuses on prevention and the high reliability organization perspective advocates resilience, both approaches fall short in explaining the complexities of human interaction and patient safety (Blatt et al., 2006). Over time, I learned the importance of prevention and resilience. But, as a student nurse, I deferred to the expertise of an instructor whom I trusted, one of the very principles of high reliability organizations. I believe that patient safety requires a deeper approach that

allows for the complexities of human and nonhuman (such as objects and values) interactions to enter into one's analysis (Lyndon & Kennedy, 2010). Such an approach is symbolic interactionism.

Symbolic Interactionism

Symbolic interactionism emphasizes human action, meaning, and process (Musolf, 2003). It assumes that humans act towards people, objects, values, and environment based on the meaning those things have for them and that meanings arise from a process of interpretation (Blumer, 1969).

Following in Blumer's (1969) footsteps, Strauss (1993) developed the concept of trajectory based on extensive research in hospitals (Fagerhaugh, Strauss, Suczek, & Wiener, 1987; Strauss, Fagerhaugh, Suczek, & Wiener, 1985). Trajectory describes the entire course of a patient's illness and the entire organization of work done throughout the course of an illness (Strauss, 1993). Any number of things can go wrong along the trajectory. Patients' illnesses are unpredictable, clinicians' actions and interactions can vary, and health care systems are fraught with uncertainty. In these highly complex interactions, errors happen (Fagerhaugh et al., 1985). Nurses must interact with complex systems, complicated patient trajectories, and unpredictable relationships with peers. Symbolic interactionism is a framework best suited to address this complexity because it embraces the position of antidualism (order vs. disorder, routine vs. chaos, conflict vs. collaboration) (Strauss, 1993).

All three theories, organizational accident theory, high reliability organizations, and symbolic interactionism, form the basis of my theoretical perspectives of patient safety. Thus, I have selected the word *safer* rather than *safe* because it captures more

accurately the reality of what one can expect in today's health care environment. Although we strive for safe care, patient care involves human interaction and to, "Err is Human" as was found in the Institute of Medicine's landmark report on patient safety (Kohn, Corrigan, & Donaldson, 2000).

Definitions

For the purpose of this research, an intershift handoff is defined as the communication and exchange of information, responsibility, and accountability for patients between nurses at change of shift (Australian Commission on Safety and Quality in Health Care; Cohen & Hilligoss, 2010). Defining what patient safety means has been an ongoing debate (Mitchell, 2008). Mitchell (2008) argues that patient safety and quality are intertwined and that patient safety has often been narrowly defined in nursing with a focus on medication errors and prevention of patient falls. She advocates that the definition be broadened to include nursing' contribution in (a) coordinating multiple aspects of patient care, (b) identifying and intercepting hazards within the health care system, and (c) monitoring, surveillance, and detecting when patients' conditions are deteriorating.

Purpose and Specific Aims

The purpose of this grounded theory study was to examine nurses' interactions in the clinical setting, in interpersonal relationships, and in handoff practices and to understand how these interactions influence the effectiveness of intershift handoffs for safer continuity of care in two medical-surgical units in an urban hospital.

The study's specific aims were (a) to describe the clinical environment during handoffs, (b) to explore nurses' perceptions about the influence of nurse-to-nurse

collaboration and conflict on handoffs, (c) to describe the handoff practices on two medical-surgical units, (d) to identify characteristics common to optimal handoffs and safer continuity of patient care, and (e) to identify characteristics common to poor information exchange during handoffs and potential risks for unsafe care.

Overview of Chapters Two to Five

The body of work that follows consists of three manuscripts; each focuses on a different aspect of the study's purpose. The first manuscript, Chapter Two, entitled "Critical Review of Facilitators and Barriers to Communicating Information Accurately and Completely During Intershift Nursing Handoffs," reviews the literature regarding nurses' handoff practices and identifies gaps in knowledge amenable to research. The second manuscript, Chapter Three, entitled "Handoff Practices that Promote Patient Safety: Painting a Full Picture," presents nurses' perspectives on effective handoff communication practices that promote patient safety (see Figure 1). The third manuscript, Chapter Four, entitled "Handoff Practices and the Clinical Environment: Challenges in Constructing the Story," addresses the challenges that nurses' encounter in their practice in constructing the story prior to their arrival at the handoff (see Figure 1). Chapter Five concludes this dissertation, presenting a synthesis of findings, clinical implications, and directions for future research.

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Chapter Two

Critical Review of Facilitators and Barriers to Communicating Information Accurately and Completely During Intershift Nursing Handoffs

Patricia Birmingham

Abstract

Background: The patient handoff is a critical process for maintaining patient safety. Evidence suggests that handoff practices are prone to error.

Objective: To identify and synthesize evidence about the facilitators and barriers to effectively communicating information during nurses' intershift handoffs in acute care settings for safer continuity of care.

Method: Studies retrieved from CINAHL, PsycINFO, PubMed, and references from reviewed articles were limited to research published in English between 2000 and 2012.

Results*:* A total of 20 articles were reviewed. Information quality varied widely within and across studies regardless of handoff method. Findings suggest that nurses were challenged to retain and recall information accurately. Little standardization of handoffs was found. Nurses relied heavily on personalized notes to remember information. Handoffs were conducted in environments that were prone to interruption and noise. Interpersonal relations varied between tension and support.

Conclusions: Little evidence was found to definitively support the effectiveness of any particular handoff strategy over others for safer patient care. Future research is required to determine which handoff practices promote safety. Exploration of the effects of the contexts in which nurses work on the quality of handoff information is required.

In hospitals, "patient handoffs" are routine everyday communication processes known to be vulnerable to errors and omissions that can affect patient safety (Dracup & Morris, 2008; Friesen, White, & Byers, 2008; Rabol et al., 2011; Rockville et al., 2012; Wong, Yee & Turner, 2008). A handoff refers to the communication and exchange of information including the "transfer of professional responsibility and accountability" for patients from one clinician to another during a break in continuity of patient care such as change of shift or meal breaks (Australian Commission on Safety and Quality in Health Care, 2010, p. 4; Cohen & Hilligoss, 2010). Every day, nurses in US hospitals begin their shift by participating in intershift handoffs (Strople & Ottani, 2006). Nurses depend on good handoff communication to continue patient care effectively (Strople & Ottani, 2006). Evidence suggests that inadequate physician handoffs increase the risk of adverse events (Arora, Johnson, Lovinger, Humphrey, & Meltzer, 2005; Greenberg et al., 2007; Horwitz et al., 2009; Horwitz, Moin, Krumholz, Wang, & Bradley, 2008; Kitch et al., 2008) but much less is known about the relationship between nurses' intershift handoff communication practices and patient safety.

According to the Institute of Medicine, as many as 98,000 patients may die each year because of medical errors (Kohn, Corrigan, & Donaldson, 2000). Furthermore, in the Joint Commission's (2012) review of 8,634 sentinel events that occurred between 1995 and 2011, communication problems were a major factor that contributed to patient injuries and deaths. Since the Institute of Medicine's initial report, patient safety and clinician communication have been the focus of increasing attention. The World Health Organization (2007) has proposed improving handoff communication, and the handoff process has become a national patient safety goal in Australia, Canada, and the United

States (Accreditation Canada, 2011; Australian Commission on Safety and Quality in Health Care, 2011; Joint Commission, 2008).

To minimize handoff vulnerabilities, the Joint Commission (2008) recommends that handoffs have few interruptions; become standardized; include up-to-date information; and offer opportunities for clinicians to ask and respond to questions, review historical data, and verify information. The aim of this article is to evaluate the evidence regarding nurses' intershift handoff practices in acute care settings with the purpose of identifying facilitators and barriers to effectively communicating information in a manner that promotes patient safety

Methods

A search of the CINAHL, PsycINFO, and PubMed databases was conducted for articles published in English between 2000 and 2012 using these search terms: hand-off, handoff, signout, sign-out, handover, hand-over, signover, sign-over, intershift report, and shift report. The Medical Subject Heading term used was continuity of patient care. The 2000-2012 time frame was chosen because it represents the period of time since the publication of the Institute of Medicine's patient safety report (Kohn et al., 2000).

Titles and abstracts of 541 articles were initially reviewed for relevance. Additional studies were identified from the reference lists of selected articles. Research studies were included for review if they investigated shift handoffs by nurses in acute care settings. Opinion pieces, quality improvement articles, and studies related to other types of handoffs were excluded. Shadish, Cook, and Campbell's (2002) criteria were used to assess the quantitative research; Whittemore, Chase, and Mandle's (2001) criteria were used to evaluate qualitative studies. Guided by these criteria, studies that

did not meet basic standards for rigor were excluded. A total of 20 unique research studies met the inclusion criteria.

Findings

The major strengths and limitations of this body of research are discussed.

Handoff Methods and Quality of Information

The four common methods of communicating information during handoffs are in writing, in a tape-recorded message, orally at the bedside, and orally away from the bedside (the traditional method) (D. Kerr, Lu, McKinlay, & Fuller, 2011; Sexton et al., 2004). The evidence indicates that quality of information varies widely, regardless of method. In a grounded-theory study that used secondary data, investigators compared the strengths and limitations of the tape-recorded handoff, oral handoffs at the bedside and not at the bedside in five acute care settings in an Australian hospital (O'Connell & Penney, 2001). Analysis of interview transcripts revealed that all three handoff methods had strengths and limitations.

In tape-recorded handoffs, information was perceived to be more factual and time-saving than the other two methods (O'Connell & Penney, 2001). However, information was reportedly missing, outdated, focused on tasks and less concerned with patient progress. The format also limited opportunities to clarify information or mentor nurses. Tape recording was convenient when shifts did not overlap. In contrast, bedside handoff allowed nurses to clarify information with patients and other nurses, remedy errors, assess patients, and check patient records and medications. But bedside handoff was time-consuming, prone to interruptions, and challenging to discuss sensitive information. Oral handoff away from the bedside allowed nurses to share confidential

information, clarify information, mentor, and offer support. However, this method was perceived to be more subjective, judgmental, and lengthy, and the use of a structured checklist varied. While the strength of this study is the comparison of three methods, it is limited by secondary data. The number of transcripts analyzed is not specified.

In another grounded theory pilot study, researchers examined facilitators and barriers to effective tape-recorded (65%) and written (35%) handoffs (Welsh, Flanagan, & Ebright, 2010). An effective handoff was defined as a report that is "accurate, concise, complete, specific, relevant, and timely" (Welsh, Flanagan, & Ebright, 2010, p. 148). Based on a thematic analysis of 20 interviews with nurses who worked on three medical-surgical units in a US veterans hospital, investigators identified six barriers and four facilitators with both handoff methods. Barriers included information that was insufficient, more than necessary, or inconsistent; limited opportunities to ask questions; and interruptions. Facilitators comprised pertinent information, note taking and space for notes, and a structured checklist**.** Based on these results investigators recommend a redesigned handoff include content that is specific to the unit, an opportunity to ask and answer questions, a checklist, and a clearer transfer of responsibility. How these recommendations are aligned to the investigators' definition of an effective handoff are needed.

In a mixed-methods study, Kerr (2002) compared taped-recorded handoffs on one unit to oral handoffs away from the bedside on another unit in a pediatric hospital in the United Kingdom (U.K.). Kerr (2002) found that the information conveyed varied depending on whether the handoff was tape-recorded or oral. Information about patient status and family problems and teaching occurred equally in both types of handoff;

organizational planning content was more common in tape-recorded handoffs while socialization and support content occurred only in oral handoffs. How content, classified as socializing, support, organizational planning, and teaching, contributed to effective handoffs is unclear.

Traditional oral handoffs. In three studies, the content of handoff information varied widely when nurses engaged in the oral handoff away from the bedside (Lamond, 2000; O'Connell, Macdonald, & Kelly, 2008; Sexton et al., 2004). In a cross-sectional study investigators surveyed 500 Australian nurses in 22 acute care units with the goal of developing handoff guidelines (O'Connell et al., 2008). Based on the responses of 176 nurses to a questionnaire that used a 7-point Likert scale (all percentages rounded up), oral handoff information was perceived to be sufficient (90%), up-to-date (89%) easy to follow (87%), and timely (77%). However, information was also found to be subjective (56%) and irrelevant (40%). More than 30% of respondents stated that important information was not given to them, but 94% of nurses reported that they were able to clarify information and 87% said they could ask questions. Nonresponse bias and coercion were both potential problems because surveys were distributed by managers. In my view, questions in the survey tool were vague and worded to elicit more positive responses, which may account for the high degree of overlap in responses.

In analyzing the content of handoff reports, Sexton and colleagues (2004) found that information quality was "poor." They observed and taped-recorded 23 traditional oral handoffs across all shifts in a medical unit in an Australian hospital. The report content was counted and identified with several types of ward documentation in existence. Report content was counted by characters (letters and numbers) and passages

(ideas, thoughts, and topics of conversations). Investigators found most report information (94%) could be found in existing documentation, but the documentation was not actually checked. Ten percent of information was deemed irrelevant because it consisted of vague statements about patient care and debriefing. No formal handoff structure or guideline was observed. The counting mechanism was unclear. The findings may be subject to bias because two of the investigators were managers and their role, if any, in managing the units was not addressed.

Guided by theories on information processing, Lamond (2000) compared the content of oral handoff reports (not at the bedside) to official patient records and notes from four medical-surgical units in a U.K. hospital. Using a coding framework, the investigator first compared data from 20 shift reports to data from 60 patient records for objective, subjective, and global statements (defined as general and non-specific statements about a patient) and then plotted similarities and differences using multidimensional scalogram analysis. Not surprisingly, the investigator found that the patients' records contained more information than shift reports, but the shift reports contained more global statements about the patients' condition and information was presented in an ordered pattern. Lamond concluded that global statements plus the ordered pattern may facilitate information processing, although terms were not well defined.

Traditional oral handoffs versus bedside handoffs. The concept of moving the traditional oral handoff to the bedside has been gaining support. In an Australian hospital, leaders considered implementing this change (D. Kerr et al., 2011). Before introducing it, a cross-sectional study was conducted on 23 medical-surgical units

to examine nurses' perceptions and preferences for current handoff methods. Observational data included the duration, location, and delivery of the handoff. Nurses working the afternoon shift completed a modified version of the Clinical Handover Staff Survey within 4 hours of beginning work. Based on the responses of 153 nurses to a questionnaire using a 7-point Likert scale, more than 67% preferred the traditional oral/written handoff conducted in a staff room. More than 80% were opposed to changing the current handoff method, and only 3% expressed interest in the alternative of bedside handoff. Nurses reported that handoff information was up-to-date (95%); they could clarify information (94%); information was easy to follow (92%); they could ask questions (90%); and information was sufficient (80%). Twenty-eight percent of nurses considered information to be irrelevant, 57% of information was subjective, 32% were concerned about handoff interruptions, and 18% said information was missing. The results may be subject to bias because two of the investigators were managers and it was unclear if they worked in the unit under study. The findings may suggest more about unit culture, resistance to change, and staff-administration relations than the preferred handoff method.

In a similar study, nurses' perceptions of the strengths and limitations of their current oral handoff method were explored (Street et al., 2011). Here, investigators surveyed 259 nurses working in 18 acute care units in an Australian hospital. Nurses indicated that a combination of oral and written information was best (48-65% preference depending on type of handoff). More than a third of handoffs were conducted at the bedside, but 79% of nurses reported that patients were not involved in the process. Nurses reported that handoff information was sufficient (83%) and up-to-date (82%), and

that the process allowed for clarifying information (85%) and asking questions (76%). Yet nurses also reported that information was not easy to follow (84%) and was subjective (50%). Participants included 60 managers/team leaders and 57 clinical nurse specialists; their involvement in handoffs is not specified.

Chaboyer, McMurray, and Wallis (2010) conducted a descriptive case study of the structures, processes, and outcomes of bedside handoffs in six acute care settings in two Australian hospitals. Based on content analysis with constant comparison, findings from 34 nurse interviews and 532 handoff observations revealed that patients were not usually involved in the handoff. Nurses reported improvement in information accuracy and promotion of patient-centered care with the implementation of structured support for bedside handoffs, but they still exchanged sensitive information away from the bedside. This study's strength is the large number of observations. The study was limited to afternoon shifts. Different challenges may exist on other shifts.

Patient perspectives of bedside handoffs. In a cross-sectional study, investigators compared nurse and patient perceptions of bedside handoffs in eight surgical units of a Finnish hospital (Timonen & Sihvonen, 2000). Analysis of survey responses from 118 nurses and 74 patients indicated that a similar percentage of nurses (32%) and patients (29%) were concerned about the presence of other patients in the room during the handoff. When compared with nurses, patients perceived that nurses concentrated too much on paperwork ($p < .001$), spent too little time with patients ($p < .001$), and used medical jargon ($p < .05$). Nurses scored higher than patients in their perceptions of encouraging patients to ask questions ($p < .001$). A strength of the study is its inclusion of patients' perspectives. However these data require cautious interpretation

because the results of 76 observations were not reported, and the study was part of a larger study conducted in 1996 and so data were collected 17 years ago.

In a recent mixed methods study that focused exclusively on patients' perceptions of bedside handoffs, investigators interviewed 30 maternity patients in an Australian hospital and analyzed their medical records for demographics and obstetric data (Chin, Warren, Kornman, & Cameron, 2011). The patients were interviewed 2 to 3 days after giving birth. One third of patients stated that handoffs were conducted satisfactorily. The meaning of satisfactory varied among patients. Ten percent of patients said they felt safe. Forty-three percent of patients stated they were involved in some form of cross-checking of information and 27% of patients did not want to be involved in handoffs during labor. The strength of this study is its inclusion of patient perspectives. Although investigators described using constant comparison, the results indicated content analysis. Furthermore, important data may have been lost because interviews were not recorded.

Handoff Information Tools

With such wide variability in the quality of handoff information, interest has emerged in handoff tools to support nurses during the process. In a descriptive qualitative study conducted in five medical-surgical units in two US hospitals, investigators explored the use of a leader-endorsed, printed, computerized handoff form and electronic medical records before and during handoffs (Staggers, Clark, Blaz, & Kapsandoy, 2011). Thematic analysis of handoff documents and interviews with the nurse conducting the handoff revealed that nurses preferred their personalized notes to the preprinted handoff sheet; these themes resulted from observations of 26 face-to-face, verbal handoffs of 93 unique patients. Only 35% of nurses used the printed, electronic

handoff form. Investigators concluded that the nurses' notes represented a synthesis of information from different sources of information and provided cognitive support for nurses. The strengths of the study include data triangulation and the establishment of rigor through peer review. Data included only those nurses giving report. Nurses receiving report may have had a different perspective on the quality of information from the personalized notes of other nurses.

The preference of nurses for personalized notes was also found in a grounded theory study conducted in five elderly care units in a U.K. hospital (Hardey, Payne, & Coleman, 2000). Thematic analysis of 23 handoff observations, 34 audio-taped interviews, and written nursing documents indicated that the nurses' personalized notes were the predominant preferred source of information. Nurses perceived their notes to be more up-to-date, convenient, memory enhancing, and a better source of information than official patient records. The strengths of the study include theoretical sampling, rigor, and an audit trail. Data saturation is not reported.

Nurses' ability to record and recall handoff information accurately was examined in an experiment conducted in acute care units in two Scottish hospitals (Dowding, 2001). Using information processing and schema theories, Dowding (2001) investigated the effects of manipulating the structure of shift report and the content of report on the ability of nurses to record and recall information accurately and plan care. A convenience sample of 48 nurses was randomly assigned to one of four experimental groups which had differing report structures and content. Each group listened to two tape-recorded shift reports (five patients per report), which were constructed from past research. After each report, participants counted backwards from 100 to 1; notes were

removed so that only knowledge from long-term memory might be retrieved. Without notes or the opportunity to ask questions, nurses were given 5 minutes to write down all that they could recall and then were given 10 minutes to write down a plan of care. Regardless of experimental group, nurses scored a mean of 45% for information retrieved (range 11 - 76%), 27% for information accurately recalled (range 8 - 50%); and 34% for writing a quality plan of care (range 3 – 78%). Interrater reliability of the checklist was acceptable (0.76 -0.86). Construct validity was not reported.

In a quasi-experimental pilot study, researchers tested for differences in information retention using three different handoff methods: oral, oral plus note taking, and oral plus a preprinted patient information sheet (Pothier, Monteiro, Mooktiar, & Shaw, 2005). They created 12 fictional patients and allocated 21 data points to each patient. Data points were divided equally into medical history, social history, and general nursing data for each patient. A convenience sample of five nurses from an ear, nose, and throat unit in a U.K. hospital was recruited and video-taped handing off in sequence 12 fictional patients to the next nurse. After waiting 60 min the receiving nurse then handed off to the next nurse until information was passed to five nurses ending with an investigator. Data were coded after each handoff. Analysis revealed a loss of information across all three handoff methods. Nurses using a purely oral form of handoff lost the most information. Those using the preprinted information sheet plus oral communication retained the most information ($p < .001$). Information improved with each sequence because information was being accumulated on the printed sheet with each sequence. This is one of the few studies that examined information quality and handoff method. Fictional patients may have impacted nurses' interest. Five nurses were

recruited for the study but it was unclear if the same five nurses were involved in one or all three handoffs methods.

The Handoff Environment

Research findings suggest that nurses conduct handoffs in environments prone to interruptions and that interpersonal interactions vary. In a large multinational cross-sectional study of nurses' working conditions, 39,898 nurses responded to 77,681 surveys, which were distributed to over 600 hospitals in 10 European countries (Meissner et al., 2007). In a secondary data analysis, investigators examined 22,902 responses to a single dichotomous question about satisfaction with shift handoffs: 39% of nurses reported dissatisfaction. Those who were dissatisfied completed an investigator-developed, 6-item questionnaire that identified their reasons for dissatisfaction. Nursing experts confirmed content validity. In addition, investigators measured the quality of leadership using four items from the Copenhagen Psychosocial Questionnaire with an acceptable Cronbach's alpha between 0.87 and 0.91 (Nunnally & Bernstein, 1994). Investigators measured social support from colleagues with a questionnaire developed by Van der Heijden in 1998; it rendered a modest Cronbach's alpha between 0.72 and 0.79 (Nunnally & Bernstein, 1994).

Results further revealed that nurse dissatisfaction with handoffs varies widely from country to country (Meissner et al., 2007). Disturbances (9 - 44%) were reported most frequently as problematic followed by lack of time (8 - 46%). Dissatisfaction due to insufficient exchange of information ranged from 4 - 19%, lack of space ranged from 5 - 6%, and bad atmosphere ranged from 1 - 9%. Investigators found that nurses were more satisfied with handoffs when their perceptions of leadership quality and collegial support

were higher ($p < .01$). Although this study used a large sample size, its findings are compromised by response bias and use of only six closed ended questions to measure dissatisfaction.

Staggers and Jennings' (2009) qualitative study examined the context of change of shift reports on seven medical-surgical units in three US hospitals. Handoff methods included oral handoffs at the bedside and not at the bedside and tape-recorded reports. Thematic analysis of 13 handoff observations of 53 unique patient reports indicated that the handoff environment (conference room or open nurses' station) was prone to intense noise and frequent interruptions that affected nurses' memory. Strengths of the study include its rigor and audit trail, but the effect of environmental factors on handoff effectiveness was not addressed.

In a critical ethnographic study of nurses' handoff practices in an Australian critical care unit, researchers found that offgoing nurses felt scrutinized during bedside handoffs and that requests for patient information or clarification were interpreted to be a critique of one's work (Manias & Street, 2000). Fear and anxiety prompted nurses to focus on being calm and in control to present a tidy picture of patients, complete tasks, and to confess to any gaps in completing tasks, even if they had a busy day. Oncoming nurses were observed to be dismissive and focused on what was not done. Strength of this study includes respondent validation. The number of participants was small (n=6), potentially limiting application to other environments.

In a mixed methods study, investigators examined medical-surgical nurses' perceptions of handoff effectiveness in a US hospital (Carroll, Williams, & Gallivan, 2012). On one unit, data included 28 surveys distributed several weeks prior to

observations, 40 audio taped observations of 77 unique patient handoffs, 23 questionnaires modified from the Psychological Safety and Burnout tool, and coders' review of medical records. Twelve interviews were conducted on another unit. Based on correlation analysis, incoming and outgoing nurses rated handoff effectiveness differently from each other (whether one group rated effectiveness higher than another was not stated clearly). Nurses' overall sense of the interpersonal relationship was a stronger indicator of handoff effectiveness than technical communication (defined as factual information). Investigators concluded that incoming and outgoing nurses' needs at handoff differed: incoming nurses wanted eye contact and the opportunity to ask questions and outgoing nurses wanted less eye contact and limited questions. Of note, nurses rated handoff effectiveness higher than expert coders' ratings of patient records. On one hand the strength of this study was the multiple sources of data but on the other hand it was unclear if and how all sources of data were used in the analysis. Moreover, the results were not clearly articulated in the table and statistical significance was not reported.

In contrast, Philpin (2006) found no tension between intensive care unit (ICU) nurses in the U.K. In a larger ethnographic study of ICU culture, the investigator conducted thematic analysis of 15 interviews, written documents, and participant observations. Analysis revealed that oncoming nurses were supportive of offgoing nurses, particularly if a nurse's preceding shift had been difficult. As nurses were aware of the researcher's presence on the unit, tensions may have been hidden. However, given the long duration of the study, this is unlikely.

Discussion

The purpose of this review was to examine the research evidence regarding intershift handoffs with the aim of identifying facilitators and barriers to effectively communicating information for safer patient care. Of the 20 studies reviewed, all but four were conducted outside of the US (Carroll et al., 2012; Staggers et al., 2011; Staggers & Jennings, 2009; Welsh et al., 2010). Handoff definitions, research problems, background literature, and study aims varied in scope and quality. Further, the ambiguity of many study aims resulted in widely diverse findings of the handoff process that offered little understanding of the specific strengths and/or barriers to effective handoff communication for safer patient care. Part of the problem may have been that few studies explicated a conceptual framework. Four quantitative studies presented a theoretical foundation, but the linkages between the theoretical constructs and study operations were weak. Few qualitative studies arrived at a conceptual understanding of effective handoff communication for safer patient care.

Sampling, data collection, and the analytical techniques of studies varied in quality. Six surveys were conducted (Carroll et al., 2012; D. Kerr et al., 2011; Meissner et al., 2007; O'Connell et al., 2008; Street et al., 2011; Timonen & Sihvonen, 2000). With the exception of Messiner and colleagues' (2007) large sample, sample sizes were small to moderate; four of the surveys were conducted in only one institution with limited generalizability (Carroll et al., 2012; D. Kerr et al., 2011; O'Connell et al., 2008; Street et al., 2011). Potential response bias existed in both qualitative and quantitative studies, particularly when administrators were either part of the research team, the recruitment process, or data collection and analysis. Although sample size for interviews and

observations was generally adequate for qualitative research, the duration of the interviews was either short, lasting 10-15 minutes, (Welsh et al., 2010) or not reported (Chin et al., 2011; Hardey et al., 2000; Manias & Street, 2000; O'Connell & Penney, 2001; Philpin, 2006), which may account for the lack of conceptual density. A range of qualitative analytical techniques was used, such as content analysis, constant comparison, and thematic analysis. However, analytical saturation of data was not reported in the studies using grounded theory analysis (Chin et al., 2011; Hardey et al., 2000; Welsh et al., 2010) and the studies did not establish a theoretical model to advance the science. A major limitation of the quantitative research was the absence of construct validity of instruments.

From this review, a number of barriers and facilitators to effectively communicating information were identified. Specifically, the studies point to handoff methods, information quality, information tools, handoff environment, and interpersonal interactions as factors to consider.

With regard to the research on handoff methods, no standard of information quality was available, making comparisons difficult. Four major methods of handoff (oral at the bedside and not at the bedside, tape-recorded handoff, and written handoff) were identified, but such variation existed between methods and across studies that comparison was again difficult. Handoffs varied in location, the person handing off the report, and the number of nurses present at handoff. Sometimes, nurses were involved in one or more types of handoffs, such as a main handoff followed by a nurse- to-nurse handoff followed by a bedside handoff. The quality of information varied within and across handoff methods. Frequently terms such as bad atmosphere, debriefing,

distractions, factual, judgmental, insufficient information, global statements, sensitive, and subjective were vague or not defined.

Each handoff method was found to have distinct advantages and disadvantages. The oral handoff away from the bedside allowed nurses to ask questions, clarify information, mentor, and support each other. But it was prone to interruptions, and retention of information was found to be problematic. The tape-recorded and written handoffs were interrupted less and worked best under time constraints, but nurses had little opportunity to ask questions, clarify information, mentor, or offer support. Bedside handoffs may allow patients to be part of the process and may improve accountability, but the studies suggest that nurses may withhold pertinent information because of a patient's presence.

Based on this review, little consensus exists on whether one handoff method suffices for effective handoff communication for patient safety. Communication is a complex process and expecting one method to satisfy all the requirements for effective handoff communication may be shortsighted. Nurses may require all types of communication for handoffs to be effective. In Patterson, Roth, Woods, Chow, and Gomes' (2004) analysis of handoff strategies in settings with high probabilities of failure, face-to-face oral handoff with interactive questioning occurred in all settings, but the handoff also included a summary of updated information written in the same format before each handoff. Replacing the oral handoff away from the bedside with oral handoff at the bedside may eliminate one of the few opportunities nurses have to share, mentor, and support each other in a busy and stressful environment. Our understanding of the effects of support, socializing, and mentoring on the effectiveness of handoff

communication is ill-defined. Understanding the importance of asking questions and clarifying information for nurses may uncover the shortcomings of handoff information: Asking questions may indicate poor quality information. Without consensus on a definition and understanding of quality information and effective communication, settling on one handoff method is premature, is likely to have unintended consequences, and poses risks for patient safety.

Not surprisingly, nurses' ability to remember and recall large amounts of information is difficult and nurses often relied on their own personalized notes. Investigators identified few structured processes such as a checklist in place to support nurses. Strople and Ottani (2006) advocated for the use of advanced technology to support nurses' cognitive needs. Since the Joint Commission's recommendation for a standardized handoff process was promulgated, interest has increased in the use of technologies and checklists. Using a standardized template with the mnemonics SBAR (Situation-Background-Assessment-Recommendation) has become popular for handoffs but this tool was not designed for handoff communication. Although numerous opinion articles have been published and quality improvement projects have been devised, little evidence exists about whether these tools significantly improve the effectiveness of handoff communication for safer patient care (Cohen & Hilligoss, 2010; Riesenberg, Leitzsch, & Little, 2009). Intuitively, standardizing the handoff process by using standardized checklists appears a worthwhile venture; other areas of health care have benefited from their introduction (Gawande, 2009; Pronovost & Vohr, 2010). Evidence indicates that health care settings are environments inherently prone to interruptions, which strain clinicians' memory (Coiera, Jayasuriya, Hardy, Bannan, & Thorpe, 2002;

Parker & Coiera, 2000; Staggers & Jennings, 2009;Woloshynowych, Davis, Brown, & Vincent, 2007). Thus, standardization and the use of checklists may unburden nurses of the cognitive strain they endure daily as they care for multiple patients (Ebright, Patterson, Chalko, & Render, 2003). Clarity about what a checklist can and cannot do is imperative otherwise it may create a false sense of security that information transfer is complete. Handoff standardization alone may oversimplify the complexities of handoff communication. What may be lost if widespread standardization were to be adopted bears serious discussion (Bowker & Leigh Star, 2000; Cohen & Hilligoss, 2010; Manser & Foster, 2011).

Finally, the evidence suggests that handoffs occur under several environmental constraints: inadequate space, noise, distractions, and interruptions (Meissner et al., 2007; Staggers & Jennings, 2009). What effect, if any, these constraints have on handoff communication and patient safety remains ill-defined. There is a dearth of literature on the effects of interpersonal interactions on handoff communication despite the highly interactive nature of handoffs and extensive reports on the influence of interpersonal interaction on patient safety. Evidence suggests that the position of the nurse (offgoing or oncoming) in the handoff creates tensions between nurses (Carroll et al., 2012; Manias & Street, 2000) but whether these tensions influence handoff effectiveness for safer care remains ill-defined.

The findings of this review reinforce those of Riesenberg and colleagues (2010), who reviewed the subject of nursing handoffs in articles published between 1987 and 2008. Like Riesenberg and colleagues (2010) review, little evidence was found that supported best practices for effective handoffs. In contrast to Riesenberg and colleagues'

review, this review focused on intershift studies of acute care units published after 2000, included studies outside the US, and included eight new studies since 2008. Yet, few new insights emerged about factors that contribute to effective handoff communication for safer patient care.

To date, the research has focused on the handoff process largely as though it were independent and divorced from the larger context of the working environment (Abraham, Kannampallil, & Patel, 2011). Isolating the handoff from the shift, unit, hospital, and local and national regulatory contexts narrows our view of the challenges in conducting effective handoff communication for safer patient care and limits our opportunities to develop resilient handoff processes.

Recommendations for Future Nursing Research

More research is needed to examine how nurses' handoff practices promote patient safety. Research needs to explore the distinctions between handoff methods and information tools and how methods and tools influence handoff effectiveness for safer patient care. Future research is needed to examine the interactions between the larger clinical context and handoff practices that promote patient safety. Improvements in communicating handoff information effectively have the greatest potential for success when they are based on sound theoretical frameworks (Matic, Davidson, & Salamonson, 2010). Without clear definitions and a sound understanding of the complexities of communicating information during intershift handoffs, the efforts of the nursing profession to improve the handoff process may falter as we may be applying the wrong solutions to the problems found in handoff communication.

Conclusion

The findings of this review raise important research questions. Despite the complexities of the health care system, most patients receive safe care, a credit to their nurses. Nurses can apply what works well to those situations where safe patient care is still at risk. Handoff communication must be explored from broader perspectives that include examination of factors within the health care system. In doing so, better solutions for safer patient care may be generated.

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Chapter Three

Handoff Practices that Promote Patient Safety: Painting a Full Picture

Patricia Birmingham

Abstract

Objective: To examine nurses' perspectives on handoff practices that promotes patient safety.

Design: Grounded theory.

Setting: Two medical-surgical units in an academic hospital in the western United States

Participants: Purposive sample of 21 nurses.

Findings: Nurses' practices of painting a full picture of the patient together at handoff promoted patient safety. When oncoming nurses left the handoff with grasp of the picture they felt "ready to go" because they had sufficient information to prioritize assessments, anticipate risks, and detect changes in a patient's condition. Nurses identified three essential practices in painting a full picture together: organizing information, asking and answering questions skillfully, and engaging in respectful dialogue. Organizing information provided the context, asking and answering questions skillfully clarified the picture, and engaging in respectful dialogue provided a holistic picture of the patient. Conditions promoting painting a full picture were trust, respect, oral face-to-face communication, and freedom from noise and interruptions. Asking and answering questions evoked strong emotions among nurses. If offgoing nurses arrived at the handoff with a poor grasp of the patient and/or felt that they were being unjustly 'grilled,' that inhibited information exchange and posed risks for patients. Further challenging nurses in painting a full picture were lack of time, tape recorded handoffs, noise and interruptions.

Conclusion: Nurses' perspectives on effective handoff practices for patient safety often depend upon whether the nurse was in the oncoming or offgoing position. Future

research needs to consider improvement interventions that take into account the needs of each nurse's position in the handoff.

Nurses' intershift handoffs occur every day in US hospitals and the communication shared during handoffs is important for patient safety. The intershift handoff is defined as the exchange of information, responsibility, and accountability between nurses about patients at the change of shift (Australian Commission on Safety and Quality in Health Care, 2010; Cohen & Hilligoss, 2010). Communicating information in today's complex health care environment is challenging (Coiera, 2006) and handoffs are known to be vulnerable processes (Rockville et al., 2012). Despite the frequency and importance of nursing handoffs, little is known about the relationship between nurses' handoff communication and patient safety.

Since the Institute of Medicine reported that as many as 98,000 patients may die because of medical errors each year (Kohn, Corrigan, & Donaldson, 2000), communication has been the focus of increasing attention. Furthermore, the Joint Commission (2012) has reported that communication problems were a major factor in the 8,634 sentinel events that were reported between 1995 and 2011. Recognizing the vulnerabilities of handoff communication, several countries proposed national patient safety goals to improve the process (Accreditation Canada, 2011; Australian Commission on Safety and Quality in Health Care, 2011; Joint Commission, 2008). In the United States, the Joint Commission (2008) has recommended that handoffs have few interruptions; become standardized; include up-to-date information; and offer opportunities for clinicians to ask and respond to questions, review historical data, and verify information.

Although evidence indicates that nurses use several handoff communication methods, such as oral exchange at or away from the bedside, written notes, and

audiotaped reports, (Chaboyer, McMurray, & Wallis, 2010; Chin, Warren, Kornman, & Cameron, 2011; D. Kerr, Lu, McKinlay, & Fuller, 2011; M. Kerr, 2002; O'Connell, Macdonald, & Kelly, 2008; O'Connell & Penney, 2001; Sexton et al., 2004; Street et al., 2011; Timonen & Sihvonen, 2000; Welsh, Flanagan, & Ebright, 2010), comparing effectiveness of handoff information is difficult because wide variability exists within and between studies. Evidence suggests that nurses may (a) find it challenging to remember information (Dowding, 2001), (b) rely heavily on paper tools to remember information (Hardey, Payne, & Coleman, 2000; Staggers, Clark, Blaz, & Kapsandoy, 2011), and (c) remember more information when oral communication is combined with preprinted information (Pothier, Monteiro, Mooktiar, & Shaw, 2005).

The handoff context was found to be noisy and interruptive (Meissner et al., 2007; Staggers & Jennings, 2009). Findings regarding the influence of interpersonal relationships have been mixed (Carroll, Williams, & Gallivan, 2012; Manias & Street, 2000; Philpin, 2006). The effects of interpersonal interactions, noise, and interruptions on handoff practices for promoting patient safety remain ill-defined. The aim of this study was to examine nurses' perspectives on effective handoff practices for safer patient care.

Methods

Design

Constructivist grounded theory served as the methodology for this study (Charmaz, 2006; Glaser & Strauss, 1967). Grounded theory, rooted in symbolic interactionism, assumes that people think about their actions; actions are dynamic and interpretive (Charmaz, 2006). Grounded theory allows for both complexity and multiple

perspectives (Clarke, 2005) which make it a good fit with the aims of this study. A constructivist approach assumes that one's conceptual understanding of a phenomenon is an interpretive analysis shaped by our past and present interactions and perspectives (Charmaz, 2006).

Data were collected between November 2010 and December 2011 and consisted of individual, semistructured, open-ended interviews and ethnographic observations of shift reports. Handoff observations included 87 unique patient handoffs during 20 intershift reports. Interviews, which lasted 45-60 min, were conducted in a private location using an interview guide (Appendix 1) that was adaptable to responses and emerging themes. Interviews were recorded, transcribed verbatim, and cross-checked for accuracy (Kvale, 1996). A purposive sample of 21 nurses who regularly conducted handoffs participated in the study. Seventeen nurses were interviewed once; 4 nurses were interviewed twice, for a total of 25 interviews.

Rigor was maintained through reflexivity, peer review, analytic triangulation, and respondent validation (Angen, 2000; Bloor, 2001; Charmaz, 2006; Clarke, 2005; Kvale, 1996). An audit trail was maintained. Data were managed using ATLAS.ti. version 6.2.27 (Muhr, 2009). Ethical approval was obtained from the sponsoring university and the participating institution. Interview participants gave informed consent and were given a $20 gift card for each interview. Verbal consent was obtained before observing handoff reports.

Data Analysis

Data collection and analysis were conducted simultaneously using constant comparison and positional maps (Clarke, 2005; Glaser & Strauss, 1967). Data were

coded using open, focused, and theoretical coding (Charmaz, 2006; Glaser, 1978; Strauss, 1987). Open coding facilitated category development; focused coding specified the salient codes for categorizing the data; and theoretical coding determined the relationships between categories (Charmaz, 2006; Glaser, 1978; Strauss, 1987). Positional maps were used to uncover silent or invisible positions in the data (Clarke, 2005). Memo writing and diagramming aided in developing a conceptual framework and analyzing relationships between categories (Charmaz, 2006; Lempert, 2007). Theoretical saturation was achieved when new data no longer generated new insights (Charmaz, 2006).

Setting and Participants

The study was conducted in a 135- bed, university-affiliated, urban hospital. Staff on the 36-bed surgical unit comprised 37 registered nurses (RNs), 3 licensed vocational nurses (LVNs), 14 nursing assistants (NAs), and 5 unit clerks. Staff on the 20-bed medical unit comprised 22 RNs, 3 LVNs, 8 NAs, and 3 clerks. Staff had union representation. Participant demographic characteristics are summarized in Table 1.

Findings

Painting a Full Picture

When oncoming nurses received a good handoff report, they felt "ready to go" because they had a "full picture" of the patient. Offgoing nurses had arrived at the handoff with a grasp of what was going on with the patient because they had gathered and synthesized sufficient information. Having a full picture:

> "keeps [patients] safe by painting a picture of who [patients] are so that the nurse knows what to do during the shift…knows what not to do as well…knows what to expect or if there're any changes in status as well..because...many things could be brushed off if nobody knows what the baseline was or nobody knows what

[patients] were like before. (SB13)

To get the full picture during handoff report, nurses described the process of *painting a full picture* of the patient together. When a nurse received a "thorough" report, the offgoing nurse used a "systems" report and the oncoming nurse got:

> "a good history. When the patient came to the hospital. What brought them here. What treatments have occurred since… I feel I know the patient well…[instead of] trying to paint a picture for myself…it's laid out there for me." (MA12)

Nurses described three communication practices that were essential for successfully painting a full picture together: organizing information, asking and answering questions skillfully, and engaging in respectful dialogue.

Painting a Full Picture: The Essential Communication Practices

Organizing information supported nurses in painting the context and history of what was going on with the patient. Asking and answering questions clarified the picture by filling in the details and enabled nurses to assess the accuracy and credibility of the picture. Engaging in respectful dialogue brought the picture to life.

Organizing Information

Many oncoming nurses engaged in preparation activities to mentally organize themselves. Prior to coming to work nurses described a wide range of activities including having a good night's sleep, praying, exercising, and preparing food for the day. These activities reduced nurses' anxiety and enhanced concentration so they could focus upon arrival at the handoff. Nurses described coming to work early so that they can, "gear up mentally [and] settle into the environment." (SB15)

To enhance mental organization many nurses craved the use of an agreed upon standardized checklist. Nurses described their current process as scattered and lacking guidelines. Instead most nurses used and were observed using the hospital's preprinted

computerized form which they called the "end of shift report." This pre-programmed form contained basic demographics and medications. To compensate for its lack of structure, some nurses designed their own detailed checklists, describing them as "systems," "brain," and "SBAR." The latter, one nurse stated, is clear "because it's a fixed thing. So the S is situation, the B is background, the A is assessment, and the R is recommendation" (SB20). Nurses frequently added and were observed adding checkboxes, symbols, and acronyms on their papers and drawing lines and structuring the sheet of paper into square boxes using different colors.

Standardized checklists helped nurses understand the context of the patient's clinical situation. Moreover, the use of a checklist helped bring individual and joint order to the information, prompted nurses to identify information gaps, and kept nurses on track. Nurses' agreement to use the same checklist promoted even better organization of information because both were "on the same page literally" (SB13). "If you have that form [together] while you're taking notes..it's just organized, you can geographically locate which part you're looking for on the piece of paper" (SB17). A joint checklist, nurses felt, reduced ambiguity and held each nurse accountable to the other. "We both knew what information [needs] to be covered and we weren't going to leave until those points were filled out" (SB13). Furthermore, the use of a checklist enabled oncoming nurses to gently steer offgoing nurses away from reporting negative feelings about certain patients and allowed them to focus instead on relaying the critical information oncoming nurses needed.

Regardless of the benefits of a checklist, nurses had to critically think about what information to include and what information to exclude on the checklist. One nurse said,

"I was taught to critically think and put pictures together and move quickly and solve problems." (SB20). To put the picture together and clarify the picture, particularly if details were missing, nurses asked and answered questions.

Asking and Answering Questions Skillfully

Nurses were often observed asking and answering questions. Questions could be short such as what time was the patient being discharged to more complicated questions about dressing changes. Many offgoing nurses appreciated being asked questions because they may have forgotten to pass on some critical information. Asking questions and answering questions were important for many nurses:

> "Because many times I need to clarify. When people…scurry through…I might have a question. Yesterday [a patient had not had] a bowel movement for four days.. so what's happening today?…what happened that he is not having bowel movements?…It helps to know where we are, where we stand. (MA02).

Asking questions could also provoke tension. Oncoming nurses sometimes asked questions with the purpose of evaluating the accuracy and credibility of information. While this practice enabled oncoming nurses to recognize deficient information quickly, asking these types of questions could be interpreted negatively by offgoing nurses.

Oncoming nurses engaged in this type of questioning, they said, because they had previous interactions with the same nurse and learned not to trust the information that the nurse conveyed. This occurred when they had previously inherited patients who had received poor quality care and upon seeing the same nurse perceived themselves and the patients to be at risk. "Part of the anxiety of taking over someone else's shift is not knowing what they didn't do, forgot to do that is going to end up in your lap unexpectedly" (SBMA09).

In such situations, nurses may not receive crucial details that would cue them into

anticipating that the patient could be at risk. For example, a nurse may not know a patient has had a history of heart attacks and thus not detect soon enough the early signs of a potential new heart attack. Even worse the patient may go into cardiac arrest and nurses may not know if the patient wants to be resuscitated. Other nurses described being physically assaulted by patients because they had not been warned about their patterns of violence. Nurses worried about the time it would take to "dig" through medical records to find accurate information. Thus potential delays in care provision contributed to nurses' concern for patient safety.

Offgoing nurses' interpretation of these probing questions often depended on their relationship with the oncoming nurse. Central to the success of asking and answering questions was mutual respect and trust. Nurses generally trusted and respected those that they perceived to be hard working, honest, energized, thoughtful mentors, calm, and genuinely caring about patients. Trust and respect had to be earned over time. If trust and respect were absent from the handoff interaction then probing questions could be perceived as an attack, an interrogation, or being evaluated unfairly.

Generally offgoing nurses found it discourteous to be constantly interrupted while giving report and interruptions disrupted their mental flow and concentration. Other nurses felt disrespected when their colleagues lacked an understanding that they had had a busy day and were unable to gather and synthesize sufficient information. Body language was also important:

> [When nurses] roll their eyes or kind of tisk me [it] affects my report because I don't feel like I can be entirely honest. I spend more time trying to justify than just saying it like it is and moving on. I get even a little bit nervous, like let's just get through this as quick as we can. (SB08)

For others, questions could be intimidating and interpreted as exerting power or

humiliating the offgoing nurse because:

> with certain nurses there'll be a lot more of, well did you do this? did you do that? It's less I'm giving report to you and more like I'm checking on what you did. The question is well, did you really know the patient and...trying to figure out if you messed up on something. It's not like just a question, it's a loaded question. (SB18)

Some nurses said that they have witnessed newer nurses being "bullied" by more experienced nurses with aggressive questioning. Such aggressive questioning, one nurse said, could be about experienced nurses strutting their expertise, but it was more likely that nurses were stressed because of the work and, "this is one way for the nurse to feel in control. They lean on their experience and push on the younger ones" (SB18).

If nurses perceived asking questions negatively they often resorted to defending themselves and felt that important information gets lost when they felt flustered or off-balance and they speeded up the process to get it over with quickly, "it makes my heartbeat a little bit faster. Or just my thought process, I don't think" (SB16). Often nurses resorted to tape recording handoff as a strategy to avoid talking to specific nurses.

At times, oncoming nurses sensed that offgoing nurses reacted defensively to their questions. Feeling frustrated by the offgoing nurse's ability to answer questions, an oncoming nurse said:

> To be brutally honest...my frustration comes out before I can catch it. I get short and like well did they or didn't they? Can you tell me this? Can you tell me that? Like come on you know…I show it in my tone that I am getting frustrated and impatient. Sometimes I can tell that they are starting to get defensive, so I am like, 'oh am I sounding frustrated? Oops ok so I tone it down. (SB08)

When oncoming nurses sensed that offgoing nurses were defensive some believed that that it was not worth the battle to continue and opted to remain silent. Others felt that there is no point in continuing to ask questions when nurses become defensive.

Nurses recognized that asking questions required skill and described the importance of using a more neutral tone of voice rather than "barking" at peers. Skillful questioning required knowing when to interject without disrupting the offgoing nurse's mental flow:

> If I'm receiving report..I find a little break in their report where I can jump in where it seems okay. I just feel it out with how they are especially if they're relaxed or stressed and then I either jump or I wait even though I know I really want to know that information before the end. But definitely it requires a lot more sensitivity at change of shift…because they're stressed, they've been here for 8 hr or 12 hr. (SB13)

Likewise, answering questions required the skill of being open to the meaning of questions. Being asked questions often prompted the offgoing nurse into recognizing that the information they were conveying was unclear. Many offgoing nurses were observed to give their oncoming counterpart permission to ask questions by ending their report with, "Do you have any questions?"

However, being open to feedback was often complicated. When asked how they would like to receive feedback if other nurses felt that their reports were inadequate, every participant wanted and valued direct and honest feedback and some wanted it given privately and constructively. In stark contrast, when those same nurses were asked how they gave feedback to other nurses when they felt handoff information was inadequate, most admitted that they just asked more questions rather than telling the nurse directly. Oncoming nurses thus avoided conflict by asking more questions. Asking questions became an indirect way to give the offgoing nurse feedback that information was inadequate which may account for the tension this type of questioning engendered.

Yet, when nurses were asked how they learned to conduct handoffs many described their best learning was when they observed nurses over time asking and

answering questions. Participating in this process challenged them to think critically and to learn what information was important. Asking and answering questions skillfully often led into respectful dialogue.

Engaging in Respectful Dialogue

In contrast to asking and answering questions, engaging in respectful dialogue painted a richer and more holistic picture of the patient because:

> [When I] can actually talk about the [patient] and even though [we are] not in the patient's room [we can] visualize…this person…because I really know this person…it helps the next nurse know who [patients] are and not what they are or what their diagnosis are. So I think that definitely improves care… I'm not as rushed….[the other nurse] feels comfortable to ask more questions as well..it's more thoughtful…it just doesn't feel like an attack session. (SB13)

Nurses who engaged in respectful dialogue guided and supported each other in problem solving complex patient situations and shared details about the patient that may not be found in formal patient records or tape recorded reports.

> [When] you are having a one-to-one conversation with someone… [you can share that a patient has] a fear of this.. and so when you are going to walk with them make sure you walk on the left side….you can pass that on more [than in the patient record] if it is a personal conversation. (SB08)

> this is the patient's life after all and if I can help the oncoming nurse understand a little better why and what…We really have dialogs. We talk about problems…the patient was really irritable today. Well how did you handle it? How are you finding what works with him? What doesn't work? (MA02).

Nurses described that the interactive give-and-take of respectful dialogue induced a sense of teamwork, camaraderie, trust, respect, and pride in the work they were doing together.

Handoff Context: Conditions that Hinder Painting a Picture

Nurses described their dream handoff as when they have time to sit down face-to-face with each other in private space without noise and interruptions. The bedside proved to be a workable alternative for some nurses because they were in the presence of a

patient, and the information being handed off was clearer which improved accountability and "allows a formal introduction, a passing of trust from one nurse to the next." (SB15) However, many nurses worried about violating patient privacy, being frank in front of patients, and interruptions.

Most handoffs were conducted in public places like the nurses' lounge and nurses' station. The former was particularly noisy because as many as 14 nurses could be crowded into one room talking to each other. At the nurses' station, handoffs were more often prone to interruptions from staff and patients. Noise and interruptions taxed nurses' attention and focus and put them at risk of missing vital information because, "your train of thought is getting broken. As I am listening to a report I am at the same time thinking about the things that they are not saying. (SB08)

Having sufficient time for handoffs, without feeling pressured to rush through report, was crucial for concentration and respectful dialogue. However, nurses often felt rushed at handoff because offgoing nurses either needed to leave or oncoming nurses felt pressured because they want to get going:

> So you've got to be quick about it…thorough...hit the high points. It's all about speed...hurry, hurry, hurry…give a quick, efficient report and allow time for questions. This business is very hurry, hurry, fast, fast, run, run. (SB20)

Handoff time was often consumed by meetings or inservice training, which increased nurses' stress by cutting into or even eliminating time that would otherwise be used for handoff reports. When no time was dedicated to handoffs (e.g., at the midnight shift and during periodic meetings at handoff time), nurses resorted to tape-recorded handoffs. This method of communication usually precluded face-to-face communication and weakened accountability. A nurse said that a face-to-face exchange with an

oncoming colleague, as opposed to leaving her a tape-recorded report, made her feel more responsible for getting things done during her shift. Nurses complained of missing or unclear information due to mechanical malfunction of the tape-recorders. Dialogue was a "one way street;" one cannot ask questions of a machine.

Consequences: Ready or Not with a Full Picture

When offgoing nurses arrived at handoff report prepared with a grasp of the patient's situation and nurses successfully painted a full picture together, oncoming nurses left the handoff "ready to go" because they knew what was going on with the patient. Successfully painting a full picture together thus facilitated safer care. However, exchanging information could be easily inhibited by any number of conditions, posing risks for patient safety. Offgoing nurses may have had a busy day preventing them from synthesizing or gathering sufficient information for handoff. Nurses often lacked a standardized checklist which could lead to missing information. Some nurses lacked skills or knowledge in asking or answering critical questions. Handoff communication could be hindered by tape recorded handoffs, lack of time or space to ask or answer questions and/ or engage in respectful dialogue.

Discussion

In this study, nurses identified the ability to talk to each other face to face in a private location, free of noise and interruptions as crucial supports for effective intershift handoffs. Having an agreed-upon written checklist proved to be a helpful organizational tool for many nurses but the institution did not have a standardized handoff template. However, standardized templates could not replace the highly interactive nature of asking and answering questions and engaging in respectful dialogue. These two practices often

provided much richer information but asking and answering questions could provoke tensions and thus required skill.

When oncoming nurses received sufficient information they had important details to anticipate and detect changes in a patient's condition. The success of nurses' practices in painting a full picture together often depended upon the position of each nurse in the handoff interaction. The offgoing nurse needed to be prepared with a grasp of the patient so they could convey sufficient information to paint a full picture. But, offgoing nurses' may not always arrive at the handoff prepared with the knowledge of what was going on with a patient because they had a busy shift. Tensions often arose between nurses because the oncoming nurse depended a great deal on receiving sufficient information to continue safer patient care and the offgoing nurse felt that the oncoming nurse often lacked understanding about how busy their shift had been. When neither nurse understood the position of the other then information exchange could be blocked further jeopardizing patient safety.

Implications

Expert nursing practice involves having a good clinical understanding or "clinical grasp" of a patient's situation so one can assess, detect, and plan safe patient care (Benner, Hooper-Kyriakidis, & Stanndard, 1999; Benner, Hughes, & Sutphen, 2008). Managers need to identify nurse experts to help mentor nurses in effective handoff practices for safer patient care. Nurses and managers need to design together a workable and flexible standardized checklist that meets the needs of nurses. Interestingly, towards the end of data collection, nurses on both acute care units were actively working on the development of a standardized template for all nurses. Nurses' involvement in the study

may have prompted them to consider a joint checklist. Research comparing the effectiveness of oral handoffs away from the bedside, oral handoffs at the bedside, and handoffs away from the bedside followed by a handoff at the bedside is needed. Future research needs to consider improvement interventions that take into account the needs of each nurse's position in the handoff.

Limitations

The results are limited to one setting and a small group of participants. The perspectives of non participants may differ in important ways from those who participated in the study. This research did not address how variation in experience and expertise may affect handoff communication. Another limitation of this study is the lack of an empirical link between handoff practices and patient outcomes.

Conclusion

Effective handoffs require organization, skill, respect, trust, private space, face-to-face dialogue, and time so that nurses develop a full picture of the patient and are ready to go with a good grasp of the picture. When nurses successfully paint a full picture together patient care is safer because nurses are knowledgeable and are ready to anticipate patient's risks, detect changes in a patient's condition, and intervene in a timely fashion to protect a patient's life.

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Chapter Four

Handoff Practices and the Clinical Environment: Challenges in Constructing the Story

Patricia Birmingham

Abstract

Aims: The aim of this study is to examine interactions between the clinical environment and nurses' handoff practices in promoting or hindering patient safety.

Method: A grounded theory study conducted in two medical-surgical units in an academic hospital in the western United States. Twenty one nurses were interviewed and 87 handoff observations were conducted.

Findings: As nurses' navigated a pressured clinical environment they were actively constructing the story about the patient. With successful construction, they arrived at the end of their shift with a good grasp of the patient's situation. Nurses identified three practices for constructing the story: assessing patients, cueing in, and writing it down. Receiving a good handoff report from the previous nurse was critical to patient safety because the information helped nurses prioritize assessments, anticipate risks, and detect changes in patients' conditions. However, nurses identified several barriers to constructing the story. Barriers included receiving a bad report from the previous nurse, unpredictable patient flow, and strained nursing resources. If nurses failed to gather and synthesize sufficient information to construct the story, they arrived at the handoff with a poor grasp of the patient. This situation posed risks for patient safety because the next nurse may leave the handoff with insufficient information.

Conclusion: Conditions in the clinical environment impact nurses' handoff practices posing risks for patient safety. Future research needs to examine handoff practices on units with good and poor clinical environments and patient outcomes.

Hospitalized patients require round the clock nursing care. At the end of every shift, nurses in US hospitals exchange critical information with the next nurse so that patient care continues safely with minimum interruption. These critical exchanges of information are known as handoffs. The intershift handoff is defined as the exchange of information, responsibility, and accountability for patients from one nurse to another at change of shift (Australian Commission on Safety and Quality in Health Care, 2010; Cohen & Hilligoss, 2010). Evidence indicates that handoffs are error prone and that information is often insufficient (Arora, Johnson, Lovinger, Humphrey, & Meltzer, 2005; Greenberg et al., 2007; Horwitz et al., 2009; Horwitz, Moin, Krumholz, Wang, & Bradley, 2008; Kitch et al., 2008; Rabol et al., 2011; Rockville et al., 2012). Yet, little is known about nurses' handoff practices and patient safety.

Background

The evidence indicates that the quality of handoff information is problematic and nurses' ability to remember information is limited (Dowding, 2011; Sexton et al., 2004). Different methods of communication (handoffs at or away from the bedside, tape-recorded or written handoff) had distinct advantages and disadvantages (D. Kerr, Lu, McKinlay, & Fuller, 2011; M. Kerr, 2002; O'Connell, Macdonald, & Kelly, 2008; O'Connell & Penney, 2001; Street et al., 2011; Timonen & Sihvonen, 2000; Welsh, Flanagan, & Ebright, 2010) and the quality of information varied widely within and across studies. No empirical link was made between handoff communication methods and patient safety. Findings indicate that handoffs are conducted in interruptive and noisy locations (Meissner et al., 2007; Staggers & Jennings, 2009) but linkages between the handoff environment and patient safety remains ill-defined.

The evidence suggests that nurses work in challenging and complex clinical environments that tax nurses' ability to critically think and evaluate patient care (Ebright, Patterson, Chalko, & Render, 2003). Nurses' critical thinking skills are necessary to provide safe patient care (Benner, Hughes, & Sutphen, 2008; Kutney-Lee, et al., 2009). One such skill, making qualitative distinctions, can alert nurses that a patient's condition has changed (Benner, Hooper-Kyriakidis, & Stanndard, 1999). Qualitative distinctions are "judgments" about changes in a patient's condition that can only be made "in the context of the situation" (Benner et al., 1999, p.31). Thus knowing the patient's immediate history influences the nurse's understanding of the patient's responses and/or changes over time (Benner et al., 1999; Benner, Tanner, & Chelsa, 2009).

Making qualitative distinctions is critical to acquiring a clinical grasp. A clinical grasp means that a nurse knows what is going on with the patient and has a clinical understanding of the patient's situation (Benner, et al., 1999; Benner, et al., 2008). Sensing if one has a grasp or not directs a nurse to assess, plan, and intervene (Benner et al., 1999). Having a clinical grasp promotes clinical forethought, so nurses can anticipate patient risks, recognize and detect unexpected changes, and take necessary action (Benner et al., 1999).

In today's complex clinical environment one can assume that nurses may be challenged in gathering and synthesizing necessary information to acquire a grasp of the patient. Yet, little is known about the interactions between nurses' practices in the clinical environment and nurses' handoff practices in promoting or hindering patient safety.

Aims

The purpose of this grounded theory study is to examine the interactions between nurses' handoff practices and the clinical environment that facilitate or hinder patient safety in two medical-surgical units in an urban hospital.

The Study

Methodology

A constructivist grounded theory approach was selected as the methodology for this study as previously described (Birmingham, 2012). Recruitment and data collection began in November 2010 and ended in December 2011. Data consisted of individual, semistructured, open-ended interviews and ethnographic observations of shift reports. Interviews followed a guide that was (Appendix 1) adaptable to responses and emerging themes.

A purposive sample of 21 nurses participated in audiotaped interviews. The interviews were conducted in a private setting, lasted an average of 45-60 minutes, were transcribed verbatim and cross-checked for accuracy (Kvale, 1996). Twenty-five interviews were recorded: 17 nurses were interviewed once; 4 nurses were interviewed twice. Observations included 87 unique patient handoffs.

Human subjects approval was obtained from both the sponsoring university and hospital institutional review board. Nurses who regularly conducted intershift handoffs were eligible to participate in the interviews. Signed informed consent was obtained and participants received a $20 gift card for each interview. Verbal consent was obtained before each handoff observation.

Data Analysis

Data collection and analysis were conducted using a grounded theory approach of theoretical questioning, constant comparison, and positional maps, as previously described (Birmingham, 2012). Data were coded using open, focused, and theoretical coding (Charmaz, 2006; Glaser, 1978; Strauss, 1987). Open coding facilitated the development of categories; focused coding entailed decision making about codes best suited to categorize the data, and theoretical coding specified the relationships between the categories (Charmaz, 2006; Glaser, 1978; Strauss, 1987). Ongoing memo writing and diagramming were used to develop an increasingly conceptual understanding of the data and the relationships between categories (Charmaz, 2006; Lempert, 2007). Theoretical saturation was achieved when new data no longer generated new insights (Charmaz, 2006) and positional maps were used to uncover invisible or silent positions in the data (Clarke, 2005). Atlas.ti. software version 6.2.27 was used to manage the data (Muhr, 2009).

Rigor was maintained through reflexivity, quality interviews, peer review, analytic triangulation, and respondent validation (Angen, 2000; Bloor, 2001; Charmaz, 2006; Clarke, 2005; Kvale, 1996). An audit trail was maintained.

Setting and Participants

The study was conducted in two medical-surgical units in a 135-bed urban teaching hospital. The staff of the 36-bed surgical unit was comprised of 37 registered nurses (RNs), three licensed vocational nurse (LVNs), 14 nursing assistants (NAs), and 5 unit clerks. The 20-bed medical unit staff was comprised of 22 RNs, one clinical nurse specialist, three LVNs, 8 NAs, and 3 clerks. Staff had union representation. Medical

care was provided by physicians from the hospital's affiliated university. The demographic characteristics are summarized in Table 1.

Results

Constructing the Story

As nurses navigated a demanding and pressured clinical environment, they were actively constructing the story of the patient. To construct the story, nurses gathered and synthesized information in the clinical setting. Nurses described three essential processes in constructing the story: assessing patients, cueing in, and writing it down. Receiving a good handoff report from the previous nurse prompted oncoming nurses into prioritizing assessments, making qualitative distinctions, detecting changes in a patient's condition, and engaging in clinical forethought. These practices were essential to keeping patient safe because if nurses were successful in constructing the story they arrived at the end of their shift prepared with a "grasp" and knew what was going on with their patients. A nurse described that when a nurse has a grasp they have, "a big picture understanding at a deeper level…deeper assessment findings, because [nurses have] spent more time with the [patient]" (SB15). Being prepared with a grasp promoted patient safety and assisted the next nurse to be "ready to go" at the start of their work with a full picture of the patient.

However, offgoing nurses may arrive at the handoff with a poor grasp of the patient posing risks for patient safety. They may have received a bad handoff report from the previous nurse. They may have encountered numerous interruptions during their shift including unpredictable patient flow and strained nursing resources that hindered the construction of the story. The next section describes the demands of the nurses' work

environment.

Context: "Skating on the Ice Arena"

The nurses' work environment was characterized by caring for complex patients, completing complicated tasks, and managing computerized patient records.

Caring for Complex Patients

Assignments. Generally, nurses cared for four to five patients with complex surgical, medical, and/or psychological conditions. Charge nurses from the previous shift were responsible for making patient assignments for the oncoming nurses which could take up to an hour because of last minute changes or confusion about the unit's staffing plan. Over the course of a shift, a nurse might discharge two patients and receive two new admissions. Thus, while the nurse may have had four or five patients on paper, they actually cared for six or seven patients.

Continuity of care. Continuity of care was difficult because both units had both 8 and 12 hour shifts. When a nurse who worked an 8- hour shift arrived in the afternoon, their patients from the prior day were already being cared for by a nurse working a 12-hour shift. On the other hand, working a 12-hour shift facilitated continuity of care because nurses had a partner who worked the corresponding 12-hour shift. They usually shared the same patients over the course of three or four days. Nurses working 12-hour shift usually enjoyed a smoother handoff because both nurses knew each other and knew the patients.

Patients. Although patients ranged in age from 40 to 90 years old, most of them actually were aged 60 to 80. Many were elderly men with multiple comorbidities, including depression, posttraumatic stress syndrome, and substance abuse issues.

Patients may have had complex surgical operations, chemotherapy, and multiple planned or unplanned radiological procedures. Buried beneath a patient's complex medical story was the story of a human being. Patients were worried, afraid, and anxious about their job, finances, and family. Support from family and friends varied.

Completing Complicated Tasks

Nurses indicated that administering medications and managing patient flow were two of the more frequent and complicated nursing tasks that required adequate preparation to execute safely.

Administering medications. The number of medications per patient ranged from four to 20. For a 24-hour period there could be as many as 25 to 50 packages in one medication drawer. The process of sorting and correctly identifying medications was time-consuming. To manage multiple medications for multiple patients, nurses had to be organized and to think ahead. To avoid distractions while preparing medications, nurses went into the medication room to concentrate because "in nursing you are always interrupted."

Timing the administration of medication required multiple decisions. Insulin had to be coordinated with meals; antibiotics had to be given at prescribed times; and blood pressure medication had to be given priority if the patient's blood pressure was high. Further, nurses had to decide when to give and when to withhold medications from patients who were scheduled for procedures. Before giving a patient a medication, nurses had to scan their armband, ensure a match with the medication, and ask patients their name and another identifier. The 9:00 am medication pass took about 90 minutes to complete; nurses had a 2-hour timeframe within which to complete scheduled

medications:

> It is always prioritizing and a lot of juggling in your mind, trying to figure out what is important for your time to do right now. I always feel very on the go. First thing in the morning can be very stressful because...the most medications are due at that time and the most things we have to do are at that time. (MA03#2)

Managing patient flow. Managing patient flow involved orchestrating procedures, discharges, and admissions which could occur at any time during a shift. Often, nurses were not informed when procedures were scheduled. When a department called the unit for a patient, the patient's nurse had to stop what they were doing and quickly assist the patient onto a gurney or into a wheelchair. For patients with impaired mobility, the nurse might be forced to find help from additional staff.

Discharges and admissions were priorities. A discharge required a nurse to coordinate the patient's physicians' orders, medications, medical supplies, equipment, home care coverage, travel, personal effects, and other services. In addition to checking orders and attending to the patient's physical needs, nurses reviewed discharge instructions with the patient. And, nurses frequently arranged for the patient's transport home. A discharge could take 15 to 45 mins. New admissions could involve "a lot work. You have to set up everything for [the patient] and sometimes you have to draw their labs, start IVs. If there is a STAT lab or something has gotten missed, then it is up to us to do it." (MA12#2)

Nurses described frequent interruptions as they cared for patients. One nurse said, "It's the culture of the floor that it is okay to constantly interrupt people no matter whether you're giving meds or you're in the middle of packing a wound. It's okay to interrupt and that is a part of what's acceptable on the floor." But, as a nurse new to the floor, she felt this was an unacceptable and unsafe practice. Interruptions could fluster

nurses and cause them to forget critical patient care information.

Managing Computerized Records

Computers containing patient records were located in hallways and nurses stations. Nurses could not always depend on finding a working computer, and a malfunctioning computer could delay accessing and documenting critical information. Accessing a computer took several steps, and mobile computers were not always reliable. As one nurse explained, one had:

> to put in your password to open up the desktop. Then you've got to get into [the computer]. You have to log in every time. If you stay away from the computer for a while, it takes a long time for it to start up. And then you have to click on [the computer]. Sometimes it takes a while for the window to show up, it's really time consuming. The computers at the station, they're landline connected so they're fine. They're reliable, but I tried charting on the mobile computers, and I lost work. I don't chart on the mobile computers anymore [because information] can be lost. (SB17#2)

At times, delayed access to critical information can be frustrating:

> I remember one day, I went through five computers. They'll shut down on you, and you can't log on, or you're trying to get to your screen to do your assessments, and you're waiting 15-20 mins. And I can't get through to a doctor because I can't find the number cause I can't get on the computer cause it won't go up or it tries to pull up, and then it crashes. (SB20)

The types and timing of documentation were many. Nurses had to document new admissions within 24 hours and reassessments within 8 hours. All medications required extensive documentation and consisted of multiple and complex schedules.

Accessing physicians' orders was cumbersome and required nurses to constantly check for new or changed orders every two hours. Complicating matters were the difficulties in evaluating the accuracy of the orders:

> You can see all these orders from different units and different dates…many years ago, and they're still in the system …everything is black and white and mixed up…you also have to compare the date..if it's discontinued or active…bits of

> information that you have to evaluate…to even see if they are supposed to get aspirin today … [it is all].... jumble[ed] together…it's a huge deal. (SB13)

When engaged in managing computerized records, nurses were often interrupted by physicians and other staff because "you don't look busy, and when two nurses are sitting at a computer and they're talking, they don't look busy but you are in fact [busy]" (SB06).

In describing their demanding clinical environment, nurses reported that they were under continual pressure to get things done and said "I am always busy, always busy." (MA03) Thus, constructing the story was challenging.

Constructing the Story: Facilitating Processes

When oncoming nurses started their shift with a full picture of the patient, they had a grasp of the patient's situation. A good report included history, the current clinical picture, critical details, and the plan. When a nurse knew what was normal for a patient they could quickly assess if something had changed. A nurse described a good reporter is someone who:

> tells me…this patient is getting a lot of IV fluids, but I'm concerned because he's got a really bad history of CHF so… watch out for this...anticipate… he may start sounding wet…and call the doctor.. .watch the 02 sat. [The offgoing nurse is] looking ahead… far ahead. (SB17)

A good report facilitated oncoming nurses in acquiring a good grasp of the picture because they knew what was going on with patients. Nurses felt prepared to prioritize assessments, anticipate patient risks, and detect changes in a patient's condition.

Assessing Patients

Assessing a patient is the nurse's first step in constructing the story. Assessing patients was important to nurses because the information they obtained from their

assessments was critical for determining the patient's stability. Based on the report information, nurses could decide quickly which patients needed to be assessed immediately. As nurses assessed the patient they compared the information they received at handoff to the information they obtained from their own assessments because:

> until I see a patient and make that connection with the patient and [handoff] information…it's all kind of vague til I get out there…and..do quick assessments on these guys…then… [I can] start plugging [information] in and having it make sense..then it becomes a person's condition. (MA02)

If a nurse found a difference in their assessment compared to the assessment of the previous nurse and if that difference indicated that the patient's condition had deteriorated then the nurse intervened quickly on behalf of the patient. In addition to the initial assessment, nurses were continually cueing in to a patient's responses and anticipating and noticing changes in a patient's condition.

Cueing in

The crucial, patient-specific details that nurses received during handoffs enabled them to cue into their patients. These details helped nurses cue in to signs and symptoms of deterioration, wound infections, or risks for falls or injuries. One nurse recounted the importance of receiving details about abnormal signs and symptoms. If the offgoing nurse:

> lets me know like an out-of-range vital sign, I will jot that down and make a mental note to myself to make sure that this is under control now ...and also depending on the patient diagnosis if they have pneumonia and they were having crackles…I will jot down crackles, mental note to…assess this area once again. (MA12)

Another nurse was cued in to assess a patient's abdomen after hearing a pertinent detail in the handoff report. This patient had not had a bowel movement (BM) in three days. The nurse made a qualitative distinction: she detected that something was wrong because

she had known him for quite some time:

> and I said gosh [the patient] hasn't had a BM in 3 days, that's just not like him and I went in and his abdomen was all distended and this guy had a prostate cancer history …red flags went off in my head and then I went in and felt his belly, being an oncology nurse, more red flags went off, and I immediately notified the doctor, said come see this…and I said I'm really worried, he has not pooped, his tummy is taut…And sure enough he [had] a mass…he's got metastatic disease..he could have perforated. (MA02)

One nurse described being cued in by the offgoing nurse's report that a particular patient was likely to fall when he became agitated. This information helped the nurse to monitor the patient more closely. Another nurse recounted that he was cued in by the offgoing nurse to activate safety processes for the safe discharge of a patient to a nursing home. After learning that the patient was at risk for falling and that his sitter was to be discontinued he monitored the patient throughout his shift and prevented the patient from falling every time the patient went to the bathroom. Receiving quality information helped oncoming nurses engage in clinical forethought by having a "better idea of what the patient is like…how at risk they are of injuring themselves." (MA14)

Writing it Down

Nurses had to gather and synthesize a lot of complex information. Writing it down, they reiterated, was essential for remembering that information. This strategy began at report and continued throughout a shift. Information was updated as events unfolded. As a result, these written stories contained the most up-to-date information.

Writing down information enabled nurses to construct complete stories by capturing the critical details found in their assessments:

> My memory won't recall things. Throughout the day, [I will] write things down, otherwise it's just too much to remember throughout the day. So if anything significant comes up [in an] assessment, I immediately put it down, it's ingrained at this point that anything happens I write it down. Even if I'm in the middle of the

> IVs infiltrating, I do what I can, fix it, and then immediately will just sit down if I have to and then before I call the doctor or anything, sit and write IV infiltrated…[otherwise] I'll forget…I systematically write...for each patient so I'm creating my own…written standard report. (SB06)

One nurse explained that if anything:

> abnormal or [something] changed, I use different colors for that…and little check boxes… it's just another visual cue for me to make it stands out that hey this is something different. (MA01)

These personally designed note systems helped the nurses "…feel organized. When I write something down, it just makes me feel like I'm in control of my shift and [in control of] what I'm doing." (SB17) Most important, each nurse's individualized note gave them a place to write down the critical details that could assist their oncoming counterparts to cue in to important clinical issues when they start their shift.

Constructing the Story: Hindering Processes and Conditions

Nurses frequently recounted their frustrations with inadequate handoff reports. When nurses received such reports they did not have a good grasp of the patient's situation. Lack of information delayed the nurse in assessing the patient and weakened their ability to cue in to critical details:

> I'm looking after people that I don't really know enough about..it makes the nurses underprepared. Then it takes me off the floor for longer, which I don't think is good for patient's safety, especially in that first little while… So if you are finding out what you need to [do] up to 20 mins past 8 o'clock, you're behind already and you've been off the floor, your attention is taken with other things, when it should have been patients. So it just makes me feeling really ill equipped to do my job well. (SB08)

Poorly constructed handoff stories lacked essential information: the patient's history, background, reason for admission, complete review of bodily systems, and plan of care. Information needed for making qualitative distinctions and anticipating patients' risks were thus missing. Important details could be missing such as the early signs of the

reoccurrence of a gastrointestinal (GI) bleed. As one participant explained:

> If this patient was admitted, went to the ICU for a GI bleed, and was intubated …and got pneumonia. And so now they're on my unit being treated for pneumonia. [But] the GI bleed kind of gets left out [of the handoff report]. Hey I want to know that. I want to know if I need to… really look at their bowel movements and ..look at the labs. (MA12)

Adding to the strain of inadequate reports were interruptions in the clinical environment. Interruptions were most commonly caused by unpredictable patient flow and strained nursing resources. These interruptions disrupted nurses in constructing the story.

Unpredictable Patient Flow

Nurses' attention may be diverted by the unpredictability of admissions and discharges. When patients came on to a unit at the change of shift, nurses were seriously challenged to fully assess them before the next shift arrived. Nurses described "drowning" from these types of interruptions and being unable to complete their work with patients. In the back of their mind, they worried that they might not have a grasp of their patients before the next shift arrived. As one nurse explained:

> And you still haven't charted and the patient is very sick. And you are tending to a bunch of things happen[ing]…a post-op roll[s] in …people coming back from their appointments…it's a high turnover…and you're trying to give report. (SB11)

The unpredictability of patient flow frequently affected the quality of nurses' assessments. When time was limited, some assessments may not occur until later in the shift. Some nurses described assessing patients hourly but suspected that was not the norm for all nurses. On occasion, nurses found patients in conditions, such as urine- or stool-soaked sheets, that suggested that their colleagues conducted few or inadequate assessments. If a new patient arrived on the floor at change of shift, patient assessments

were limited: the nurse may have had only enough time to settle the patient, obtain baseline vital signs, and write a quick note. One nurse said that when this happens, "the offgoing nurse doesn't have an idea of what's going on. They haven't assessed the patient." (SB17).

Strained Nursing Resources

When support staff was not available, nurses found themselves trying to protect patients at risk and discharge others at the same time and not being able to do either assignment well. On weekends, when staffing in the hospital "really goes down to skeleton staff," nurses were expected to cover the patient care demands that were otherwise handled by ancillary personnel. Consider the example of one nurse who was directed to take a patient on a time-consuming trip to the x-ray department. The nurse informed the supervisor that "you realize I'm not on the floor monitoring my patients, not giving meds. I'm doing this because you don't have the staff to do it." (SB20)

Strained nursing resources affected assignments. Nurses working a 12-hour shift may have to split the shift between two units, floating to one unit for 8 hours and returning to the unit for the last 4 hours. Frequently offgoing nurses arrived at the handoff, with a poor grasp of their patients. A nurse described this frustrating dilemma:

> I have felt this way about myself …I did not really have a good grasp on what was going on with my patients, and so I know that my report has been vague, not thorough, because I wasn't sure of all the things that I was reporting about…maybe [I was] swamped that shift…I wasn't… able to find out the answers to the questions that I wanted. (SB08)

Consequences: Variation in Nurses' Grasp of the Patient's Situation

Nurses may or may not arrive prepared at the handoff with a good grasp of the patient. To construct a good story, nurses needed the time, attention, and focus to assess

and cue in to critical changes in a patient's condition. Interruptions could distract, delay, or interrupt a nurses' attention causing them to miss important changes in a patient's condition. Often the cumulative effect of interruptions and bad handoff reports "broke the camel's back." Unfortunately, but predictably, poor quality information at the handoff posed risks to patient safety because oncoming nurses often lacked the critical details necessary to prepare them to make qualitative distinctions and anticipate the patient's risks.

Discussion

These results describe complex interactions between nurses' handoff practices and the clinical environment that often posed risks for patients. Nurses must execute many complicated tasks safely while at the same time engaging in essential critical thinking skills in constructing the patient's story. Nurses' practices of assessing patients and cueing in require time, focus, and attention. But nurses may receive a bad handoff report from the previous nurse, face unpredictable patient flow with high patient turnover, strained nursing resources, and a cumbersome computerized patient record system. As nurses navigated this challenging environment they were at risk of missing changes in a patient's condition. They may come to the end of their shift without a grasp of the patient posing risks for the safe continuity of patient care because the next nurse may not receive the necessary information they need to detect that a patient's condition has or is changing.

In today's demanding clinical environment, Kutney-Lee and colleagues (2009) have argued that the critical thinking skills involved in surveillance (detecting changes) requires both an individual and a collective effort by multiple nurses over time. The

handoff is an important individual and collective effort over time to keep patients safer. Handoff is the time for nurses to pass on their unique knowledge that is crucial for safer patient care (Benner et al., 1999; Benner et al., 2008; Benner et al., 2009; Carper, 1978; Tanner, Benner, Chesla, & Gordon, 1993). However, this important collective effort is constantly threatened by conditions in the larger clinical environment. These results reinforce the findings that maternity nurses were frequently challenged to maintain patient safety due to system constraints (Lyndon, 2010).

Findings from other studies have demonstrated how good practice environments promote patient safety. In a landmark study examining mortality rates in the Intensive Care Units of 13 hospitals, researchers found mortality rates lowest in the hospital that had additional educational support for nurses, the presence of a clinical nurse specialist, policies that empowered nurses to make staffing decisions, and visible and onsite leadership (Knaus, Draper, Wagner, & Zimmerman, 1986). Almost 25 years later, similar results were found in other acute care units (Aiken et al., 2011; Blegen, Goode, Spetz, Vaughn, & Park, 2011; Kendall-Gallagher, Aiken, Sloane, & Cimiotti, 2011; Kutney-Lee, Lake, & Aiken, 2009; Lucero, Lake, & Aiken, 2010). Of note, increased staffing had little effect on surgical mortality rates in hospitals with poor working environments. However, when staffing was increased in hospitals with good working environments surgical mortality rates decreased (Aiken et al., 2011).

Limitations

Participants were recruited from only two units in one US hospital. The sample size was small. Non-participants may have different perspectives. No empirical link to outcomes was established but establishing such causality is extremely difficult.

Implications

The results of this study suggest that improving the work environment would be a good investment in patient safety. Improving nurses' practice environment is relatively inexpensive (Aiken, et al., 2011). A good practice environment has been identified as good working relations, open dialogue between management and front line staff, staffing resource adequacy, adequate time to spend with patients, and an investment in continued learning for nurses and quality improvement for patient care (Aiken et al., 2011; Kutney-Lee, et al., 2009). Future research needs to compare patient outcomes from handoff practices on units with good and poor clinical environments.

Conclusion

The handoff is clearly situated within a much larger and more complex clinical environment. If the clinical environment fails to support nurses in constructing the story, the handoff itself will reflect this disparity, and patient care will be even more at risk. Investing in good practice environments is well worth the effort because both patients and nurses will benefit. In such environments, nurses are more likely to have the resources and support necessary to provide safer continuity of patient care.

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Chapter Five

Synthesis

Patricia Birmingham

The purpose of this dissertation was to explore nurses' perspectives about handoff practices that promote patient safety on two medical-surgical units and to examine the conditions and processes that pose risks for patient care. Three papers were presented: a review of selected literature and two papers that report study results. This chapter synthesizes key observations from the three papers, clinical implications, and directions for future research.

Synthesis of the Literature Review

The first paper, "Critical Review of Facilitators and Barriers to Communicating Information Accurately and Completely During Intershift Nursing Handoffs" presented a review of selected higher quality studies from the handoff literature. The aim of the review was to examine the facilitators and barriers to effective handoff communication for patient safety so that best handoff practices can be identified. Little consensus emerged from this body of literature whether one method (channel) of handoff communication is effective in promoting patient safety. The quality of handoff information varied widely across all methods of handoff communication. No standard of information quality emerged. The evidence suggests that handoffs were lacking in structured processes and that nurses' ability to remember information was limited. The handoff environment was prone to interruptions and the quality of interpersonal interactions varied. There is a dearth of literature regarding handoff practices that promote patient safety and little is known about the interactions between handoff practices and the larger clinical environment in facilitating or hindering patient safety.

Synthesis of Painting a Full Picture

The second paper, "Handoff Practices That Promote Patient Safety: Painting a

Full Picture," identified nurses' perspectives about handoff practices they considered safety promoting. When nurses successfully exchanged information orally together, oncoming nurses grasped the full picture of their patients. A successful exchange of information promoted patient safety because oncoming nurses had a good understanding of their patients' conditions; this enabled them to prioritize assessments and go to the bedside prepared to anticipate patient risks and detect changes in patients' conditions.

Communicating successfully involved the process of painting a full picture for the oncoming nurse of each patient's history, current clinical situation, plan, which assessments to prioritize, potential risks ahead, and clinical details that may indicate a patient's condition has changed. Processes that facilitated painting a full picture were organizing information, asking and answering questions skillfully, and engaging in respectful dialogue. Conditions that facilitated these processes were sufficient time, private space without interruptions, oral face-to-face communication, and mutual trust and respect.

However, the success of these communication practices often depended on the nurse' position in the handoff. Offgoing nurses may arrive at the handoff with a poor grasp of what is going on with patients because of a busy and interruptive shift. This may result in the exchange of poor quality information posing risks for patient safety. The oncoming nurse could thus leave the handoff not knowing what is going on with the patient. Gaps in the quality of information, therefore, could spark interpersonal tensions during the handoff, which could further impair the clarity of the picture for the oncoming nurse. Further challenging nurses in successfully painting a full picture were tape recorded handoffs, lack of space, noise, interruptions, and insufficient time to conduct

handoffs. Hence, the nurse's perspective about effective handoff communication for patient safety often depended upon the nurse's position in the handoff: offgoing or oncoming.

Synthesis of Constructing the Story

The third paper, "Handoff Practices and the Clinical Environment: Challenges in Constructing the Story," provides insights into the challenges nurses face in constructing the story in today's clinical environment. Nurses described working in a pressured and intrusive environment with unpredictable patient flow and strained nursing resources. As nurses navigated this challenging environment, they constructed the story of the patient by gathering and synthesizing information.

Nurses' essential practices in constructing the story were assessing the patient, cueing in, and writing it down. Receiving a good handoff report facilitated nurses' skill for constructing the story because the information prompted them to assess and cue into possible patient risks and/or signs of clinical deterioration. With successful construction of the story, nurses had a grasp of what was going with the patient and arrived at the handoff prepared with quality information for the next nurse. Arriving with a good grasp promoted safer continuity of care. Nurses, however, often arrived at the handoff with a poor grasp of the patient because conditions and processes within the environment hindered them in constructing the story. Furthermore, nurses may receive inferior quality information from the previous nurse. These challenges posed risks for safer continuity of care.

The findings from these two studies indicate that the interactions between the offgoing nurse and the oncoming nurse and interactions between the larger clinical

environment and handoff practices may affect patient safety to a previously unrecognized degree. These interactions need to be considered in clinical practice and in future research

Transferability of Findings

The findings are specific to the units in which they were obtained and these units are unique in specific ways. These units are located within a hospital that is part of a much larger network of hospitals. Any major change to one hospital affects all hospitals and requires negotiating within different layers of the bureaucracy. The patient population in this hospital may differ in significant ways from patient populations in other health care settings.

However, several points are salient regarding transferability of findings. At least some of the conditions that presented challenges to nurses in promoting patient safety at handoff are likely to exist in other settings. Noise, interruptions, and challenges in locating private space at handoff have already been identified in other settings (Meissner et al., 2007; Staggers & Jennings, 2009). Nurses in this study stated that these environmental challenges weakened their ability to focus and concentrate and as a result they lost important information.

Interpersonal friction between offgoing and oncoming nurses during the handoff was also found in other settings (Carroll, Williams, & Gallivan, 2012; Manias & Street). The results of this study reinforce Carroll and colleagues' (2012) argument that the perception of handoff effectiveness may depend more on whether the nurse is coming on or off the shift. The negative impact of unpredicatble patient flow and strained nursing resourses on nurses' handoff practices and patient safety are likely to be transferable to

other contexts.

Implications

The findings of this research raise important issues to consider in clinical practice and future research. Keeping patients safe requires an integrated theoretical approach (Fagerhaugh, Strauss, Suczek, & Wiener, 1987; Page, 2004; Reason, 1990; 2000; 2004; Weick & Sutcliffe, 2007) to improve handoff practices. Using a systems level approach will help identify potential weaknesses or latent failures within the system before they line up and trigger a catastrophic event (Reason, 1990; 2000). Patient safety requires individual and collective commitment to developing resilient practices and reluctance to oversimplify (Weick & Sutcliffe, 2007). Nurses must interact with complex systems, complicated patient trajectories, and unpredictable relationships with peers (Fagerhaugh, Strauss, Suczek, & Wiener, 1987; Strauss, Fagerhaugh, Suczek, & Wiener, 1985). Nurses are expected to communicate complex information clearly, quickly, and effectively with each other to keep patients safe. Symbolic interactionism is a framework well suited to address this complexity and is therefore a useful framework for safety research.

The clinical environment requires ongoing attention by organizational leaders. To establish a good practice environment leaders need to establish a culture of learning, improve interpersonal relations, engage nurses at the bedside in planning handoff space and in the development of an agreed upon checklist, and facilitate and empower nurses' to be involved in staffing and patient flow issues (Aiken et al., 2011; Page, 2004; Reiling, Hughes, & Murphy, 2008). Nurses in this study described cumbersome computerized record systems that were time consuming and unreliable and nurses were often delayed in

providing patient care. Thus, thoughtful construction of information technology systems is needed (Cain & Haque, 2008; Staggers et al., 2011; Strople & Ottani, 2006).

Future Research

A great many questions in this field are still unanswered. Future research is needed to explore the influence of experience and expertise in nurses' handoff communication practices. The results of such investigations could be used to develop interventions and guide future structuring of handoffs. Handoff interventions that take into consideration the position of each nurse in the handoff have the greatest potential for success. A study comparing patient outcomes from handoff practices on units with good and poor practice environments is needed.

A series of qualitative studies is needed to understand if managers' and organizational leaders' perspectives of intershift handoffs differ to frontline nurses' perspectives of handoffs and patient safety. More research is needed to understand how to support nurses' documentation needs. Finally, research is needed to understand patients' perspectives about safety at handoffs.

Conclusion

It is clear that nurses faced several challenges in promoting patient safety at intershift handoffs. Despite the challenges, nurses in this study expressed a strong commitment to patient safety and identified key handoff practices that promote patient safety. Improvement efforts that incorporate all levels of an organization offer the best opportunity for effective handoffs and safer patient care.

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Study Summary

Study Status:	Active
Principal Investigator:	**Buffum, Martha D, DNSc**
Study Number:	**10-00637**
Study Title:	Keeping Patients Safe: Exploring Nurses' Shift Handoff Practices
Expiration Date:	08/04/2012

Study Title: Keeping Patients Safe: Exploring Nurses' Shift Handoff Practices
Status: Active
Study Alias: 10-00637 - Handoff Practices

Phase:
Storage Code:
Research Type:
Therapeutic Area:
Accrual Target:
Coordinating Study Number:
Blinding Method:
xx Number:
Current Enrollments: 0
Peds Category:

Study Personnel

Principal Investigator: Martha D Buffum, DNSc

Study Contact: Audrey L Lyndon, Martha D Buffum, DNSc, Patricia M Birmingham, PhD (c)

Other Investigator: Patricia M Birmingham, PhD (c)

Faculty Advisor: Audrey L Lyndon

CHR

Study Number: 10-00637
Risk Assigned: Minimal
Review Cycle: 12 Months
Exempt: No
Subject Approved: 0
Termination:

IRB of Record: Yes
Committee of Record: Parnassus Panel
IRB Initial Approval: 08/05/2010
IRB Expiration: 08/04/2012
Last Continuing Review Approved: 07/12/2011
Continuing Review Due:
Study Closure:
Temporary Closed: No
Temporary Closure Start:
Temporary Closure End:

Comments

Master Lay Summary

Nursing handoffs are common, complex, and can result in threats to patient safety if not conducted effectively. The purpose of this descriptive qualitative study is to examine variations in nurses' handoff practices during change of shift in medical-surgical units in xx. Using the methods of grounded theory, data
from individual interviews, observations , and documents will be used and and findings from this study will lead to a set of recommendations for effective handoffs.

Study Details:

Sponsor	No Sponsors have been associated.
Study Drug/Biologic/Chemical agents	No Drugs have been associated.
Study IACUC Drug	No Drugs have been associated.
Study Devices	No Devices have been associated.
Inclusion Criteria	No Inclusion criteria have been associated.
Exclusion Criteria	No Exclusion criteria have been associated.
Treatment Criteria	No Treatment criteria have been associated.
Workup Criteria	No Workup criteria have been associated.

	INFORMED CONSENT FORM
Subject Name:	**Date:**
Title of Study: Keeping Patients Safe: Exploring Nurses' Shift Handoff Practices	
Principal Investigator: Martha Buffum, DNSc, RN, PMHCNS-BC	Date of Document 06/23/2011

CONSENT TO PARTICIPATE IN RESEARCH

This is a research study examining the handoff practices nurses use at the change of shift in medical-surgical units at x. The study will be conducted on x and x. The study involves individual interviews with RNs and LVNs who volunteer to participate in the study. The study researcher, Patricia Birmingham, RN, PhD (c), from the Department of Family Health Care Nursing, UCSF, will explain this study to you. Martha Buffum, DNSc, RN, PMHCNS-BC from x, and Audrey Lyndon, PhD, RN, from UCSF will supervise Ms. Birmingham during the course of this study.

Research studies include only people who choose to take part. Please take your time to make your decision about participating, and discuss your decision with your family or friends if you wish. If you have any questions, you may ask the researcher or her supervisors.

You are being asked to take part in this study because you are an RN or LVN who conducts handoffs and you work on the medical-surgical units of x and/or x and you have expressed interest in participating.

Why is this study being done?

The purpose of this study is to learn more about the handoff practices nurses use at change of shift including the facilitators and barriers to effective handoffs, and to learn more about how handoffs maintain safe continuity of patient care.

Who pays for this study?

This study is supported by funds from a research award from Sigma Theta Tau International Honor Society of Nursing Alpha Eta Chapter.

How many people will take part in this study?

Up to 30 nurses from units x and x may take part in the individual interviews

What will happen if I take part in this research study?

If you agree, the following procedures will occur:

- The researcher, Patricia Birmingham, will interview you for no longer than 60 minutes at a time. The interview will take place in a private location that is convenient for you. The interview will be conducted during non-working hours.
- The researcher will ask you questions about your experiences with shift handoffs.
- The researcher will tape record the interview and there will be no mention of your name on the tape recorder or on any notes taken. After the interview, the tape recording will be transcribed. Research data (including tapes and transcripts) will be held in accordance with the xx.
- Ms. Birmingham may take hand written notes during the interview. Ms. Birmingham's notes will include a demographic questionnaire and her observations and thoughts during the interview. These notes will remain confidential and will have no identifying information.
- A second interview of not more than 60 minutes may be arranged to clarify or discuss items not covered in the interview.

How long will I be in the study?

Your participation in the study will take at the very most 2 hours if two interviews are needed.

Can I stop being in the study?

Yes. You can decide to stop at any time. Just tell the study researcher right away if you wish to stop being in the study. Also, the study researcher may stop you from taking part in this study at any time if she believes it is in your best interest, or if the study is stopped.

What risks can I expect from being in the study?

- This is a minimal risk study.
- You may be inconvenienced by the time spent being interviewed.
- Remembering unpleasant experiences may be emotionally disturbing.
- You may feel uncomfortable answering some questions, but you are free to decline any questions that you do not want to answer. You can stop the interview at any time.
- You are free to decline a second interview.
- A written transcript will be made of the audio taped interview. To ensure your anonymity and the patient's confidentiality, there will be no identifying information about you, other staff or patients on the audio tape, transcript of the audio tape, or research notes.

Are there benefits to taking part in the study?

There will be no direct benefit to you from participating in this study. However, the information that you provide may help to generate new ways of conducting handoffs that could improve patient safety.

What other choices do I have if I do not take part in this study?

You are free to choose not to participate in the study. If you decide not to take part in this study, there will be no penalty to you.

Will information about me be kept private?

We will make every effort to ensure that the personal information gathered for this study is kept private. However, we cannot guarantee total privacy. Your personal information may be revealed if required by law. If information from this study is published or presented at scientific meetings, your name and other personal information will not be used. Organizations that may look at and/or copy your research records for research, quality assurance, and data analysis include:

- UCSF's Committee on Human Research
- x

What are the costs of taking part in this study?

You will not be charged for any of the study procedures. If you choose to interview in a location other than your home, you may have to pay for transportation to that location.

Will I be paid for taking part in this study?

In return for your time, effort and travel expenses, you will be given a $20 gift certificate immediately after completion of the first interview. A $20 gift certificate will also be given for the completion of second interviews.

What are my rights if I take part in this study?

Taking part in this study is your choice. You may choose either to take part or not to take part in the study. If you decide to take part in this study, you may leave the study at any time. No matter what decision you make, there will be no penalty to you in any way.

Who can answer my questions about the study?

You can talk to the researcher(s) about any questions or concerns you have about this study. Contact the researcher Patricia Birmingham at x or Martha Buffum at x, or Audrey Lyndon at x.

If you have any questions, comments, or concerns about taking part in this study, first talk to the researchers (above). If for any reason you do not wish to do this, or you still have concerns after doing so, you may contact the office of the Committee on Human Research, UCSF's Institutional Review Board (a group of people who review the research to protect the rights of volunteers in research projects).

You can reach the CHR office at 415-476-1814, 8 am to 5 pm, Monday through Friday. Or you may write to: Committee on Human Research, Box 0962, University of California, San Francisco (UCSF), San Francisco, CA 94143 or the x at x.

CONSENT

You have been given a copy of this consent form to keep.

PARTICIPATION IN RESEARCH IS VOLUNTARY. You have the right to decline to be in this study, or to withdraw from it at any point without penalty or loss of benefits to which you are otherwise entitled.

If you wish to participate in this study, you should sign below.

Date	Participant's Signature for Consent
Date	Person Obtaining Consent

	INFORMED CONSENT FORM
Subject Name:	**Date:**
Title of Study: Keeping Patients Safe: Exploring Nurses' Shift Handoff Practices	
Principal Investigator: Martha Buffum, DNSc, RN, PMHCNS-BC	**Date of Document 09/14/2010**

CONSENT TO PARTICIPATE IN RESEARCH

This is a research study examining the handoff practices nurses use at the change of shift in medical-surgical units at x. The study will be conducted on x and x. The study involves individual interviews with RNs and LVNs who volunteer to participate in the study. The study researcher, Patricia Birmingham, RN, PhD (c), from the Department of Family Health Care Nursing, UCSF, will explain this study to you. Martha Buffum, DNSc, RN, PMHCNS-BC from x, and Audrey Lyndon, PhD, RN, from UCSF will supervise Ms. Birmingham during the course of this study.

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Who pays for this study?

This study is being paid for by the researcher's personal funds.

How many people will take part in this study?

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- The researcher will ask you questions about your experiences with shift handoffs.
- The researcher will tape record the interview and there will be no mention of your name on the tape recorder or on any notes taken. After the interview, the tape recording will be transcribed. The tape recording will be destroyed upon completion of the study.
- Ms. Birmingham may take hand written notes during the interview. Ms. Birmingham's notes will include a demographic questionnaire and her observations and thoughts during the interview. These notes will remain confidential and will have no identifying information.
- A second interview of not more than 60 minutes may be arranged to clarify or discuss items not covered in the interview.

How long will I be in the study?

Your participation in the study will take at the very most 2 hours if two interviews are needed.

Can I stop being in the study?

Yes. You can decide to stop at any time. Just tell the study researcher right away if you wish to stop being in the study. Also, the study researcher may stop you from taking part in this study at any time if she believes it is in your best interest, or if the study is stopped.

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Will information about me be kept private?

We will make every effort to ensure that the personal information gathered for this study is kept private. However, we cannot guarantee total privacy. Your personal information may be revealed if required by law. If information from this study is published or presented at scientific meetings, your name and other personal information will not be used. Organizations that may look at and/or copy your research records for research, quality assurance, and data analysis include:

- UCSF's Committee on Human Research
- x

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PARTICIPATION IN RESEARCH IS VOLUNTARY. You have the right to decline to be in this study, or to withdraw from it at any point without penalty or loss of benefits to which you are otherwise entitled.

If you wish to participate in this study, you should sign below.

Date	Participant's Signature for Consent
Date	Person Obtaining Consent
Date	Witness to Participant's Signature

STUDY INFORMATION SHEET

Subject Name:	Date:
Title of Study: Keeping Patients Safe: Exploring Nurses' Shift Handoff Practices	
Principal Investigator: Martha Buffum, DNSc, RN, PMHCNS-BC	Date of Document 06/23/2011

Patricia Birmingham, RN, PhD (c) a nurse and UCSF doctoral student, is doing a study exploring change of shift handoffs on x and x at x. Martha Buffum, DNSc, RN, PMHCNS-BC from x and Audrey Lyndon, PhD, RN, from UCSF will supervise Ms. Birmingham during the course of this study. The purpose of this study is to learn about: (1) the handoff practices nurses use at change of shift, (2) facilitators and barriers to effective handoffs, and (3) how handoffs maintain safe continuity of patient care. There are two parts to this study: (1) shift report observations, and (2) individual interviews with nurses who volunteer to participate in the study.

Here is what will happen if you participate in the observation of shift reports:

- Ms. Birmingham may observe you during shift report.
- Observations may occur on day, evening, or night shift.
- There will be no identifying information about you on the notes taken.

Shift report will not be observed without your permission. You are free to choose not to be observed. If you decide not to be observed during shift report you will not be observed during the shift report and there will be no penalty to you. There is no consequence to your employment at x regardless of your choice to be observed. The shift report observations involve no foreseeable risks or harm to you.

Here is what will happen if you decide to enroll in the interview part of this study:

- Prior to the interview, Ms. Birmingham, will obtain written consent from you.
- You will meet with Ms. Birmingham at a private location that is convenient and comfortable for you.
- The interview will last about 45-60 minutes. You may be asked to return for one follow up interview of 45-60 minutes.
- The interview will be tape recorded. The interviews will be transcribed. There will be no identifying information about you on the tape recording or the notes taken. Research data (including tapes and transcripts) will be held in accordance with x.
- You will be asked questions about your experiences during shift handoffs and Ms. Birmingham will collect some demographic information from you. Ms. Birmingham will take notes during the interview and these notes will remain confidential.
- For your time, you will receive a $20 gift card upon completion of the interview. If a follow-up interview is requested, there will be a $20 gift care for the second interview also.

There is no consequence to your employment at x by choosing not to participate in the interviews.

If you have any questions or concerns about this study, please call Patricia at x or email at x. If for any reason you do not wish to do this, you may contact Marti Buffum at x or

Audrey Lyndon at x. If you still have concerns after doing so, you may contact the office of the Committee on Human Research, UCSF's Institutional Review Board (a group of people who review the research to protect your rights) at 415-476-1814, 8 am to 5 pm, Monday through Friday. Or you may write to: Committee on Human Research, Box 0962, University of California, San Francisco (UCSF), San Francisco, CA 94143.

STUDY INFORMATION SHEET

Subject Name:	Date:
Title of Study: Keeping Patients Safe: Exploring Nurses' Shift Handoff Practices	
Principal Investigator: Martha Buffum, DNSc, RN, PMHCNS-BC	Date of Document 06/05/2010

Patricia Birmingham, RN, PhD (c) a nurse and UCSF doctoral student, is doing a study exploring change of shift handoffs on x and x at x. Martha Buffum, DNSc, RN, PMHCNS-BC from x and Audrey Lyndon, PhD, RN, from UCSF will supervise Ms. Birmingham during the course of this study. The purpose of this study is to learn about: (1) the handoff practices nurses use at change of shift, (2) facilitators and barriers to effective handoffs, and (3) how handoffs maintain safe continuity of patient care. There are two parts to this study: (1) shift report observations, and (2) individual interviews with nurses who volunteer to participate in the study.

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Here is what will happen if you decide to enroll in the interview part of this study:

- Prior to the interview, Ms. Birmingham, will obtain written consent from you.
- You will meet with Ms. Birmingham at a private location that is convenient and comfortable for you.
- The interview will last about 45-60 minutes. You may be asked to return for one follow up interview of 45-60 minutes.
- The interview will be tape recorded. The interviews will be transcribed. All recordings will be destroyed at the end of the study. There will be no identifying information about you on the tape recording or the notes taken.
- You will be asked questions about your experiences during shift handoffs and Ms. Birmingham will collect some demographic information from you. Ms. Birmingham will take notes during the interview and these notes will remain confidential.
- For your time, you will receive a $20 gift card upon completion of the interview. If a follow-up interview is requested, there will be a $20 gift care for the second interview also.

There is no consequence to your employment at x by choosing not to participate in the interviews.

If you have any questions or concerns about this study, please call Patricia at x or email at x. If for any reason you do not wish to do this, you may contact Marti Buffum at x or

Audrey Lyndon at x. If you still have concerns after doing so, you may contact the office of the Committee on Human Research, UCSF's Institutional Review Board (a group of people who review the research to protect your rights) at 415-476-1814, 8 am to 5 pm, Monday through Friday. Or you may write to: Committee on Human Research, Box 0962, University of California, San Francisco (UCSF), San Francisco, CA 94143.

Keeping Patients Safe: Exploring Nurses' Shift Handoff Practices

Nurses' Stories Needed about Shift

Your experience about end of shift handoffs is needed for research. Patricia Birmingham, a nurse and UCSF doctoral student would like to talk to **RNs and LVNs** who work on **x and x** at x.

Patricia is doing a study to learn more about the handoff practices nurses use in acute care inpatient settings. She wants to learn more about the facilitators and barriers to effective handoffs and she wants to learn how handoffs maintain safe continuity of patient care. She would like to talk with:

- **Nurses who would like to share experiences about shift handoffs.**

Please consider volunteering for this study. Your expertise is vital to enhancing patient safety. The interview is strictly confidential and the information will be used for research purposes only.

If you are interested in participating in this study, please contact Patricia by phone at **x** or by email at **x**

Compensation for interview: $20 gift card

Thank you so much for your valuable time!

Appendix 1

Keeping Patients Safe: Exploring Nurses' Shift Handoff Practices

Nurses' Interview Guide

Interview Date:_____ Participant Code #:_____

Introduction
Thank you very much for agreeing to participate in this study. I am interested in learning more about the handoff practices nurses use in medical-surgical units. I am particularly interested in learning about the different handoff practices nurses use during the change of shift, and I want to understand more about the facilitators and barriers to effective handoffs, and I want to learn how handoffs maintain safe continuity of patient care. I believe that I can learn a lot from listening to your stories about shift handoffs. I will be taking notes and recording our interview and I'd like to remind you that it is best to avoid using your name so that I can protect your privacy. Also please don't mention other staff names or use patient names. If you have any questions during the interview, don't hesitate to let me know. Please include anything that stands out in your mind – no story is "too unimportant" to include in your answers. I'm going to start off with some general questions about shift handoffs.

What kinds of shift handoffs do you conduct on your unit?

> Probe: What kinds of handoffs do you prefer? - face-to-face/ tape-recorded/bedside/Verbal only/written only or both.
> Probe: Why do you prefer these types of handoffs?
> Probe: Do you do handoffs on all the patients on your unit or your assigned patients? Which do you prefer? Why?

Where do you conduct handoffs?

> Probe: Where do you think is the best location to conduct handoffs? Why?

How long do handoffs usually take?

> Probe: How much time do you think is needed to conduct an effective one-to-one handoff and an effective handoff for the entire unit?

Tell me your best shift handoff story?

> Probe: What makes a handoff successful?
> Probe: How do handoffs keep patients safe?

Tell me your worst shift handoff story?

Probe: What sorts of things make handoffs difficult?
Probe: How do you handle difficult handoffs?
Probe: What makes a handoff unsafe for patients?
Probe: What kinds of information do you need so you can continue taking care of patients safely?
Probe: What kinds of risks do patients face during shift handoffs?

What are the facilitators to an effective handoff?

What are the barriers to an effective handoff?

How do remember information during handoffs?

Probe: Where do you get your information from?

What sorts of things help you remember information when giving/receiving information during a handoff?

How do you decide what information to share during a handoff?

What kinds of information do you expect to receive during a handoff?

How does it feel when you have had a bad/good handoff?

Is there anything I should have asked that I didn't ask?

Turn Off Tape-Recorder

Before we finish, I'd like to ask you for some background information.

How long have you worked at the XXXX? _____
How long have you worked on your unit: _____ □ Ward XX □ XX
How many years have you been a nurse? _____
Working □FT □PT? □Float Pool □ Per Diem □ Registry □ Travel. What shift(s)? _____ □8 h □12 h
How old are you? _____ □ Male □ Female First Language: _____
What race to you consider yourself to be: □ American Indian or Alaska Native □ Asian □ Black or African American □ Native Hawaiian or other Pacific Islander □ White

Please Circle:
Highest Nursing Degree/Education: LVN Associate Degree Diploma
Bachelor's Degree Master's Degree PhD
Non-nursing degree:
Bachelors' Masters Degree PhD

If I have further questions may I contact you in the future for clarification and/or another brief interview? □ Yes □ No

Would you be interested in providing feedback/comments on my study findings? □ Y □ N

How would you like to be contacted? □ Phone: □ Work email: □ Personal email

Thank you so much for sharing your time and your expertise with me. I really appreciate it.

Appendix 2

Keeping Patients Safe: Exploring Nurses' Shift Handoff Practices

Checklist for Observation of Shift Report

Date: _____ Time Arrived on Unit: _____ Unit Code #:_____

Shift: ☐ 7:30 a.m ☐ 3:30 p.m. ☐ 7: 30 p.m. ☐ Midnight

Group Report

Location of shift report: _____

Time report started: _____ Time report ended: _____

Any nurses arrive after report started: Y ☐ N ☐ If yes, how many? ____
What time did nurses arrive? _____

Number of nurses giving report:____Number of nurses receiving report:_____
Number of patient reports: _____

Type of Report: ☐ Face-to-Face ☐ Tape Recorded Other Type of Report: _____

Types of documents used during report: _____

Did oncoming nurses ask questions? Y ☐ N ☐

Did oncoming nurses take notes? Y☐ N ☐

Did two-way dialogue occur between offgoing and oncoming shift nurses? ☐ Yes ☐ No

Any interruptions? Yes ☐ No ☐
Notes:_____

Noise? Yes ☐ No ☐ Interpersonal Interactions: ☐ Friendly ☐ Tense ☐ Familiar with each other

Notes:

_____
_____
_____
_____

_____
_____
_____
_____

Nurse-to-Nurse Report

Location of shift report: _____

Time report started: _____ Time report ended: _____

Type of Report: ☐ Face-to-Face ☐ Tape Recorded

Other Type of Report:_____ Number of patients reports: _____

Types of documents used during report: _____

Did oncoming nurse ask questions? Y ☐ N ☐

Did oncoming nurse take notes? Y☐ N ☐

Did two-way dialogue occur between offgoing and oncoming shift nurse? ☐ Yes ☐ No

Any interruptions? Yes ☐ No ☐

Notes:

_____
_____
_____
_____

Noise? Yes ☐ No ☐ Interpersonal Interactions: ☐ Friendly ☐ Tense
☐ Familiar with each other

Notes:

_____
_____
_____
_____
_____
_____
_____
_____
_____

Table 1

Demographic Characteristics of Participants (N = 21)

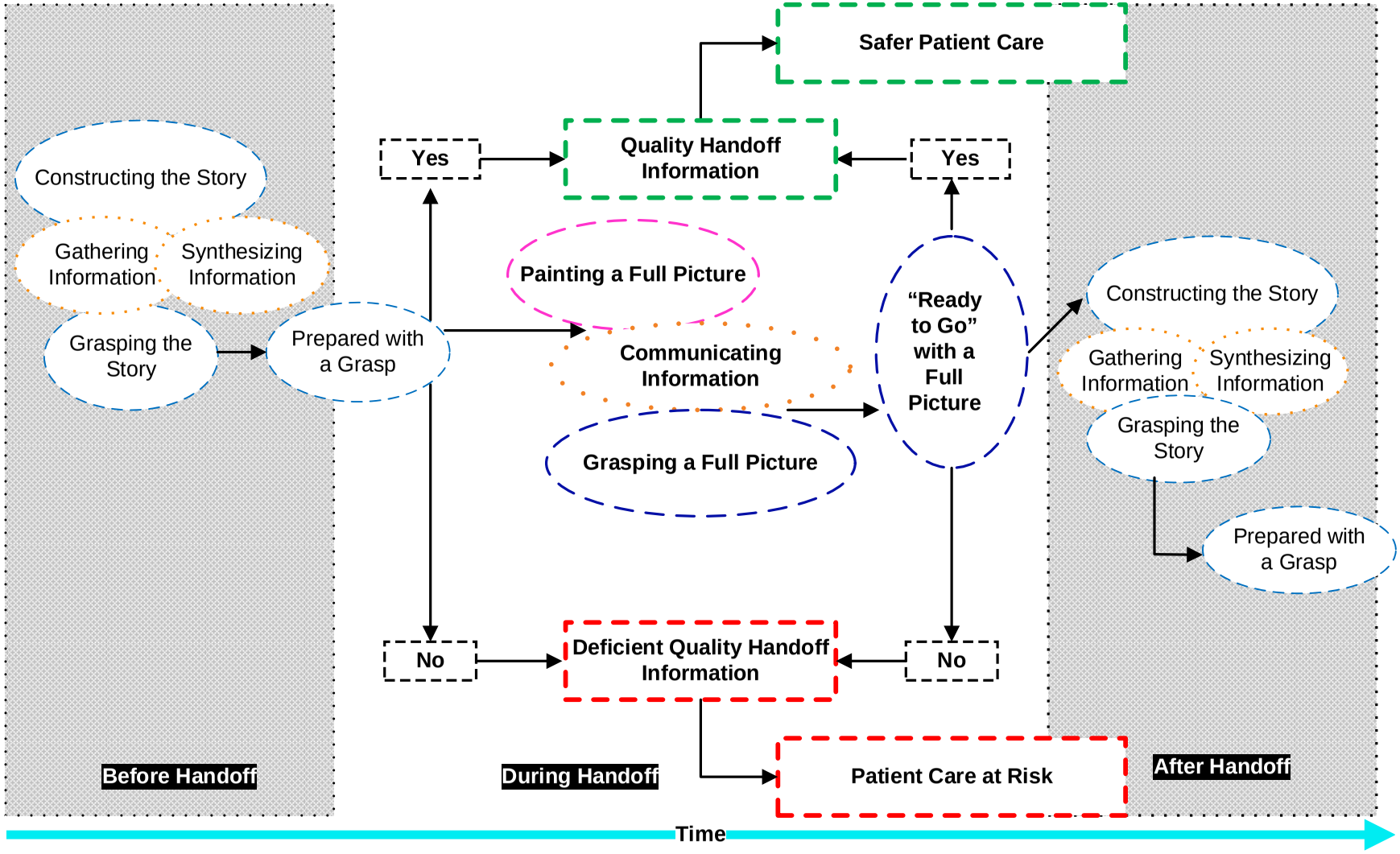
Age in Years	Mean: 39; Range = 24-66
Sex	
Female	18
Male	3
Registered nurses	20
Licensed vocational nurses	1
Ethnicity	
White	62%
Asian	38%
Years of experience	Mean: 12; Range = 9 months-43 years
Years in current position	Mean: 3 years; Range = 2 months-17 years
Education	
Associate degrees	3
Diploma	3
Bachelors	10
Masters	5
Non-nursing bachelors	8
Shifts types	
12 hours	7
8 hours	14
Shift times	
Days	10
Evenings	5
Nights	1
Rotate days and evenings	4
Rotate days and nights	1
Permanent	86%
Float/travel	14%
Interviews	
Medical Unit	8
Surgical Unit	12
Float Pool	1

Table 2

Ethnographic Observations of Intershift Handoffs (N = 87)

Unique patient reports	87
Complete shift reports	20
Complete Intershift handoffs	20
Day shift: 7:30 am	11
Evening shift: 3:30 pm	5
Evening shift: 7:30 pm	2
Night shift: 12:00 am	2
Medical-Surgical units	2
Observations on medical unit	9
Observations on surgical unit	11
Days of the week	
Monday	3
Tuesday	1
Wednesday	3
Thursday	4
Friday	6
Saturday	1
Sunday	2
Duration of complete shift report	Mean: 20 minutes; Range = 5-31 minutes
Handoff Method	
Oral face-to-face communication	17
Tape recorded message	3
Handoff Locations	
Nurses' lounge	9
Nurses' station	9
Report room	2

Figure 1 Nurses' Perspectives on Handoff Practices That Promote Patient Safety: Constructing the Story and Painting a Full Picture



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Patricia Birmingham
Author Signature

5/7/2012
Date