NAVIGATING THROUGH CHAOS: CHARGE NURSES AND PATIENT SAFETY

A GROUNDED THEORY STUDY

by

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A Dissertation Presented in Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy in Nursing

University of Phoenix

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ABSTRACT

Patient safety is a prominent issue in health care as evidenced by the staggering statistics of deaths and harm due to preventable medical errors. As front line clinical leaders, charge nurses (CNs) have key roles in keeping patients safe. There is a gap in knowledge of the specific actions and processes CNs implement to keep patients safe. This study attempted to narrow this gap by exploring actions and processes CNs implement to keep patients safe using a grounded theory design and generating a substantive theory that can inform CN job descriptions, serve as the basis for CN orientation and training, and empower CNs to promote patient safety in practice. This study utilized purposive sampling of CNs on medical-surgical units with data collected through 11 interviews and six observations. The substantive theory that emerged was *Navigating through Chaos: CNs balancing multiple roles, maintaining a watchful eye and working with and leading the health care team to keep patients safe.* This study contributes to the knowledge base of the CN role related to patient safety. Recommendations to maximize the potential of the CN role in promoting patient safety include clearly defining CN role responsibilities, addressing staffing shortages, and providing CNs with the necessary information to complete their work. The specific actions and processes identified in this study can be incorporated into course content on clinical nursing leadership. The substantive theory can also guide further research to study relationships between specific CN actions and processes and patient safety outcomes.

DEDICATION

This dissertation is dedicated to my parents, Doug and Lorraine Cathro, who have instilled the values of determination, hard work, and resiliency and to my beautiful daughter, Ella Lorraine, who makes me smile every day.

This dissertation is also dedicated to the charge nurses who graciously shared their experiences, insight, and commitment to patient safety through their participation in this study. Your commitment to patients, staff, and your profession makes you true leaders in health care.

ACKNOWLEDGMENTS

I would like to thank my chairperson, Dr. Anne Brett, for her timely feedback, straightforward advice, and for being my "cheerleader" and guide throughout this dissertation process. Also, I would like to thank my committee members, Dr. Sharon Beasley and Dr. Maureen Marzano, for their feedback and support.

I am grateful for the support I received from the nursing research and nursing leadership departments where this study was conducted.

I would also like to thank the charge nurses who participated in this study. Sharing your insights about the important work CNs do to keep patients safe and allowing me to observe you in action helps advance the knowledge of this vitally important role.

Finally, I would like to acknowledge the support provided to me by my family and friends during my doctoral journey. I appreciate your understanding when I had to devote so much of my time to completing this degree.

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Introduction

Estimates suggest 195,000 patients die annually in United States hospitals from patient safety events, totaling $19 Billion in health care expenditures (Department of Veterans Affairs, 2006). In addition, over 700,000 patient safety events affected Medicare recipients between the years 2007-2009 (Health Grades, 2011). According to the Department of Health and Human Services Office of the Inspector General (2010), 13.5% of Medicare beneficiaries hospitalized during a one-month period in 2008 had an adverse event. Of these events, 44% were preventable.

Prior to the Institute of Medicine (IOM) releasing the groundbreaking report, *To error is human* (Kohn, Corrigan, & Donaldson, 2000), the extent of health care errors and the seriousness of the state of patient safety were not well publicized. The basis of this lack of publicity related to the state of patient safety and the extent of health care errors was the medical community's historical reluctance to disclose errors (Key, 2007).

Now, patient safety is a prominent topic (Feng, Acord, Cheng, Zeng, & Song, 2011; Murphy, Shannon, & Pugliese, 2006; Shekelle et al., 2011). For example, patient safety is the focus of many national organizations and initiatives, including the National Patient Safety Foundation (2013), the Joint Commission (2013a), and the American Society for Healthcare Risk Management (2013), suggesting patient safety is a top priority for consumers, accreditation bodies, health care and risk management professionals.

Commitment to patient safety initiatives is also a political priority. Important legislation pertaining to patient safety initiatives involved the passing of the Patient

Safety and Quality Improvement Act in 2005, encouraging the development of patient safety organizations. Patient safety organizations support cultures of safety and work with health care professionals to define, analyze, and reduce patient safety risks (Agency for Healthcare Research and Quality, n. d. a.).

Additional legislation pertinent to patient safety included the Affordable Care Act passed in 2010 (Centers for Medicare & Medicaid Services, 2012). The aim of the Affordable Care Act is to improve coordination of care, financial accountability, and quality of care for Medicare recipients. The Affordable Care Act provides an incentive-based program for organizations to become Accountable Care Organizations. As Accountable Care Organizations, health care facilities must attain a specified level of performance in four key areas including care coordination/patient safety to receive optimal reimbursement from the Centers for Medicare & Medicaid Services. Key measures under care coordination/patient safety include 30-day hospital readmission rates, medication reconciliation, and fall risk screening (Centers for Medicare & Medicaid Services, 2012).

Chapter 1 provides an overview of the research problem of patient safety and the role of the charge nurse (CN) in keeping patients safe. Specifically, chapter 1 outlines the background of the problem: nurses' roles in patient safety, the CN role, and the CN role related to patient safety. Next, chapter 1 outlines the problem statement and describes the purpose and nature of this study. This chapter also includes the research questions, significance of the study, and theoretical framework. Chapter 1 concludes with definitions of key terms and a discussion of the study's scope, limitations, delimitations, and assumptions.

Background of the Problem

Nurses spend the most direct time with patients out of any health care professional and are "the critical link to patient safety" (Drenkard, 2011, p. 29). In hospitals, examples of outcomes of patient safety influenced by nurses include in-hospital mortality, falls, hospital-acquired pressure ulcers, hospital-acquired infections, rescuing patients from harm (or failing to rescue patients from harm), and medication errors (Blegen, 2006).

Charge nurses (CNs) and patient safety. As front line clinical leaders responsible for overseeing patient care and unit functioning (Cathro, 2013; Connelly & Yoder, 2003; Flynn, Prufeta, & Minghillo-Lipari, 2010; Homer & Ryan, 2013; Matthews, 2010; Small & Moynihan, 1999; Thomas, 2012), CNs have a pivotal role in maximizing positive patient outcomes and minimizing harm. The CN role evolved from a practice-based need to have a nurse oversee patient care on off shifts when the head nurse/manager was absent. The CN role has increased in importance over time due to staffing issues, increased use of registry/float nurses, increased acuities of patients, decreased length of hospital stays, increased mobility of nurses, and the need for a competent nurse to take accountability and ownership for unit functioning (Connelly & Yoder, 2003; Connelly, Yoder, & Miner-Williams, 2003; Flynn et al., 2010). In addition, Mahlmeister (1999) articulated how the CN role has become increasingly important due to regulatory and legal requirements.

Connelly, Yoder, et al. (2003) conducted a qualitative, exploratory study to identify CN role competencies. Many of the clinical/technical competencies identified pertained to patient safety including delegating workloads, checking emergency equipment, handling emergencies, and conducting initial patient assessments throughout

the unit. In addition, one category that emerged from Lewis's (1990) grounded theory study exploring CNs' perceptions of their role responsibilities was setting standards (including the need for standards related to patient safety). Since the time of Lewis's study, hospital care has changed significantly, including decreased length of stays, higher acuity patients, increased focus on customer satisfaction, and monitoring of nurse-sensitive outcomes, such as falls and pressure ulcers (Sherman et al., 2013). In addition, there are established patient safety standards. These standards include Joint Commission (2013b) established goals for hospital patient safety updated annually.

The concept of safety also emerged in Eggenberger's (2011, 2012) research. Eggenberger conducted a qualitative, descriptive study examining the acute care CN experience. Eggenberger identified the creation of safety nets as a key theme pertaining to the CN role. In addition, Eggenberger noted the gap in nursing knowledge pertaining to the influence of CNs on patient safety.

Problem Statement

Health care must become safer. One in twenty hospitalized patients will develop a hospital-acquired infection and 500,000 patients will fall this year in United States hospitals (National Patient Safety Foundation, 2014). Although CNs have had important roles within hospitals for at least the last four decades, less is known about this significant role compared to other nursing roles (Connelly, Nabarrete, & Smith, 2003; Flynn et al., 2010; Krugman & Smith, 2003; Sherman, 2005; Sherman, Schwarzkopf, & Kiger, 2011). This lack of knowledge specific to the CN role may have resulted from the traditional belief that any nurse could and should assume the CN role, even without formal role preparation (Connelly & Yoder, 2003; Eggenberger, 2011, 2012; Homer & Ryan, 2013;

Nunn, 2008). Wilson, Talsma, and Martyn (2011) suggested that developing the knowledge base surrounding the CN role related to patient safety is a crucial part of transforming nursing leadership. Furthermore, the IOM articulated the need for both quantitative and qualitative research describing the work nurses perform in a variety of settings (Page, 2004).

The main problem facing health care is the need to provide a safe environment for patients. CNs are the front line leaders on most hospital units and could function as the gatekeepers for safe patient care. Therefore, the specific problem addressed by this study is understanding the role of the CN in providing a safe environment for patient care. Advancing the knowledge base specific to the CN role in patient safety can help make health care safer.

Although there is literature suggesting that ensuring patient safety is one important part of the CN role (Connelly, Yoder, et al., 2003; Eggenberger, 2011, 2012; Lewis, 1990), little literature exists that is specific to the actions and processes CNs implement to keep patients safe. The single study located specific to CNs and patient safety was by Wilson, Redman, Talsma, and Aebersold (2012). Findings from Wilson et al.'s study suggested nurses who fulfilled the CN role perceived a unit's patient safety culture differently than nurses who did not fulfill the role. In addition, findings suggested CNs could provide unique insights into a unit's patient safety culture. However, Wilson et al.'s study did not specifically address the actions and processes CNs implement to keep patients safe nor did it offer a substantive theory specific to these actions and processes. This study focused on the gaps in the literature. Specifically, this study

outlined the actions and processes implemented by CNs to keep patients safe and proposed a substantive theory of these actions and processes.

Purpose of the Study

The purpose of this study was to explore the actions and processes CNs implement to keep patients safe and to develop a substantive theory regarding actions and processes CNs implement to keep patients safe. The intent of this study was potentially significant given most nurses do not receive formal preparation for the responsibilities and expectations of the CN role prior to assuming this complex position (Connelly & Yoder, 2003; Eggenberger, 2011, 2012; Flynn et al., 2010; Nunn, 2008). Articulating actions and processes CNs implement to keep patients safe and generating a substantive theory can inform CN job descriptions, serve as the basis for CN orientation and training, and empower CNs to promote patient safety in practice.

Nature of the Study

To address the gap in knowledge, this study used a qualitative, grounded theory design to develop a substantive theory regarding actions and processes CNs implement to keep patients safe. A grounded theory design was appropriate due to the limited literature on this topic (Glaser & Strauss, 1967; Strauss & Corbin, 1990, 1998). In addition, grounded theory's purpose is theory development that emerges from data (Glaser & Strauss, 1967), the goal of this study. A substantive theory is one that is applicable to a particular context and can inform practice (Glaser & Strauss, 1967). CNs are front line leaders at the hospital unit level. A substantive theory pertaining to the actions and processes CNs implement to keep patients safe can inform practice. For

example, a substantive theory can inform policy development and policy revision related to the CN role and patient safety.

Research Questions

The research questions were as follows:

RQ #1: What actions and processes do CNs on medical-surgical nursing units implement to keep patients safe?

RQ #2: What substantive theory might emerge from the data collected during interviews and observations with CNs?

Bogdan and Biklen (2007) indicated qualitative research questions tend to be broad and open-ended while also providing a focus for the study. Keeping research questions broad and open-ended provides flexibility for in-depth exploration (Strauss & Corbin, 1990, 1998). Strauss and Corbin suggested that qualitative research questions may become increasingly narrowed or more focused, depending upon how the study progresses and what data emerges. The initial research question therefore provided a conceptual base for the researcher, a place of reference to return to throughout the research process to keep the study focused on the original intent. The second research question was consistent with the expectation that a substantive theory may emerge from the data collected during interviews and observations with CN participants.

To provide focus, Koro-Ljungberg and Hayes (2010) suggested that qualitative research questions should incorporate the setting and study context. The main research question stated the setting of medical-surgical units and the context of CNs and patient safety. Qualitative research seeks to explore an emic, or insider, perspective, necessary to understand complex contexts of study participants' everyday lives (Denzin & Lincoln,

2008). The first research question incorporated the intent to obtain an emic perspective by identifying actions and processes CNs implement to keep patients safe. The second research question was consistent with the expectation that a substantive theory may emerge from the data collected through interviews and observations with CN participants.

In qualitative, grounded theory studies, Strauss and Corbin (1990) discussed how research questions assist in setting realistic limits on the scope of the study, providing structure. It is not possible to address all aspects of an identified problem in a single study, particularly a problem as complex and multifaceted as patient safety. By limiting the scope of this research topic to medical-surgical units and the actions and processes CNs implement to keep patients safe, the research questions stated the focus of the study and clarified what the study planned to accomplish.

Additionally, Strauss and Cobin (1990) indicated grounded theory research questions tend to focus on actions and processes. The research questions for this study focused on actions and processes and the potential substantive theory emerging from the data. Furthermore, grounded theory research questions assist in finding answers to important issues where there is a lack of literature and knowledge (Strauss & Corbin, 1990, 1998). Although it is known that CNs have important roles in ensuring patient safety, the gap in the literature pertains to the specific actions and processes CNs implement to keep patient safe. This study's research questions assisted in addressing this gap.

Significance of the Study

This study may contribute to the efforts to make health care safer by reducing the number of adverse events that occur in hospitals, thereby benefiting patients. As front

line clinical leaders, CNs have a role in ensuring the safety of patients on medical-surgical units. This study has implications for nursing practice, leadership, education, and research, within the context of patient safety.

Nursing practice. Nurses and other health care staff look to CNs for expert clinical guidance in the delivery of safe patient care (Flynn et al., 2010; Mahlmeister, 2006). As front line leaders, CNs respond quickly to changes in patient conditions and play key roles in intervening and reporting patient safety concerns, assisting the health care team in keeping patients safe (Eggenberger, 2011; Mahlmeister, 2006). Eggenberger indicated that understanding more about the CN role is crucial to improving patient safety and decreasing preventable medical errors. This study contributes to knowledge of the CN role; specifically contributing to the knowledge base of the CN role related to patient safety. The knowledge generated through this study may be helpful to all members of the multidisciplinary health care team by helping to clearly define the specific actions and processes CNs implement to keep patients safe.

Nursing leadership. This study has implications for CNs by empowering them to promote patient safety in practice. Clearly defining actions and processes CNs implement to keep patients safe helps to justify the need for the CN role and may help to reduce CN role ambiguity. Additionally, this study's findings can assist nurse leaders in the development of CN job descriptions, patient safety policies, and, serve as the basis for CN orientation and training. In addition to nurse leaders, other health care leaders involved with policies and performance related to patient safety may benefit from the study. These health care leaders include chief executive officers, chief operating officers, risk management professionals, and patient safety professionals.

Nursing education. Content on patient safety is a necessary component of all health care education, including nursing. In the IOM report, *Health professions education: A bridge to quality,* one of five core competencies for health professions education was the application of quality improvement (Greiner & Knebel, 2003). Included within this competency was for students to "understand and implement basic safety design principles" (Greiner & Knebel, 2003, p. 46). In addition, one core competency outlined by the Interprofessional Education Collaborative Expert Panel (2011) is "roles/responsibilities" (p. 20). The competency states that clearly defined discipline-specific roles and responsibilities are essential for effective teamwork and the provision of quality, safe patient care (Interprofessional Education Collaborative Expert Panel, 2011).

More specific to nursing, the Quality and Safety Education for Nurses (QSEN, n. d.) initiative articulating safety and quality competencies for nursing education began in 2005. The goal of QSEN is to provide nurses with skills and knowledge to advance patient safety and quality care in practice. In addition, Essential II of the *Essentials of baccalaureate education for professional nursing practice* is "basic organizational and systems leadership for quality care and patient safety" (American Association of Colleges of Nursing, 2008, p. 13). This Essential articulates the importance of clinical leadership for quality, safe patient care (American Association of Colleges of Nursing, 2008). Nurse educators can incorporate the generated substantive theory on actions and processes CNs implement to keep patients safe into nursing education curricula, particularly into course content on clinical nursing leadership.

Nursing research. The results of this study also have implications for nursing research. Page (2004), in the IOM's Report, *Keeping patients safe: Transforming the work environments of nurses,* articulated a need for research describing the work nurses perform, consistent with the aims of this study. This study generated knowledge specific to the work CNs perform. This substantive theory on the actions and processes CNs implement to keep patients safe can serve as a basis for future research examining relationships between CN role functions and patient safety outcomes.

Theoretical Framework

Pre-imposing theoretical frameworks is not generally conducive to grounded theory designs aimed at theory generation (Glaser & Strauss, 1967; Strauss & Corbin, 1990). However, having a broad, all-encompassing framework that was specific to nursing was important to the aims of this study focused on a specific nursing role. Almonte (2007) indicated when grounded theory researchers reference a specific theory or conceptual framework, their goal is not to prove or disprove the theory or framework. Instead, the purpose of utilizing a theory or framework is to provide a frame of reference to understand actions or processes pertinent to the study topic (Almonte, 2007).

For this reason, Fawcett's (1984, 2005) metaparadigm of nursing, consisting of person, health, environment, and nursing, was the broad conceptual framework used to situate this study. In this study, person referred to hospitalized patients. Health referred to keeping patients safe by striving to eliminate preventable errors and adverse events. Environment referred to medical-surgical units. Nursing referred to the CN role and the actions and processes CNs implement to keep patients safe. (See Appendix A for a diagram of the framework.) The metaparadigm of nursing (Fawcett, 1984, 2005) was

broad enough to fit within a grounded theory design, but was specific enough to nurses, the focus of this study. Once data collection and analysis began, links to existing theories and conceptual frameworks emerged. Therefore, throughout the research process, assessment of the appropriateness of the metaparadigm of nursing (Fawcett, 1984, 2005) to this study was necessary.

Definitions of Key Terms

The following definitions applied to this study:

- ***Charge Nurse (CN):*** A nurse who assumes responsibility for the overall functioning and delivery of patient care for a given shift on a hospital unit (Cathro, 2013; Flynn et al., 2010).
- ***Patient Safety***: Patient safety is "freedom from accidental or preventable injuries produced by medical care" (Agency for Healthcare Research and Quality, AHRQ, n. d. b, para. 1). For the purposes of this study, patient safety occurred within the context of inpatient hospital medical-surgical units. As discussed by Nunn (2008), the context of the CN role is the unit level. Most specifically, in this study, patient safety occurred within the context of the actions and processes CNs implement.

Scope and Limitations

Patient safety is a complex phenomenon. The scope of this study was limited to the perspectives of CNs on medical-surgical units at one acute care hospital within a large health system in a western state. In addition, this study's scope was limited to actions and processes CNs implemented to keep patients safe during the time of data collection (October 2014 to January 2015).

The study results are limited in generalizability due to a small sample size and purposive selection of participants. Strauss and Corbin (1990) suggested that in grounded theory designs, the goal is not to generalize findings, but rather to specify the particular contexts in which the theory applies. In this study, the particular contexts were medical-surgical units that have a formal CN role, or, for hospitals developing a formal CN role. An additional limitation is the interpretations of data by the researcher. To enhance the credibility of findings, the researcher implemented the following strategies: triangulation of data collection methods, member checks, detailed field notes, a reflective journal, and discussing all data collection and analysis procedures (Beck, 1993; Guba & Lincoln, 1981). The researcher also utilized both manual and software-assisted (NVivo ™) data organization and analysis techniques to enhance the credibility of study findings.

Delimitations

A qualitative, grounded theory design was consistent with articulating the specific actions and processes CNs implement to keep patients safe. However, delimitations of this qualitative, grounded theory design included the inability to quantify the frequency in which actions or processes occurred or demonstrate how actions or processes related to specific patient safety outcomes. An additional delimitation of this study was the reliance on study participants to provide truthful and realistic responses to interview questions and not change their usual actions or behaviors while observed.

Assumptions

The researcher held assumptions about the CN role since she was a CN. Based on the researcher's experiences and from informal interactions and conversations with her CN colleagues, the researcher had observed CNs participating in many role functions to

keep patients safe. These role functions may include being aware of the status of all patients on the unit as well as the status of potential admissions or transfers to the unit, and assisting nurses when patients arrive on the unit to understand their acuity levels and anticipate care needs. In addition, CNs may assist with patient emergencies, make patient assignments based on nurses' competencies and patients' needs, and be role models and unit leaders for initiatives such as pressure ulcer and fall prevention.

The researcher worked in the hospital setting for over thirteen years and worked as a CN for six years. Based on this experience, the researcher brought the assumption that CNs have key roles in health care and in the promotion of patient safety. Throughout her doctoral program, the researcher completed assignments pertaining to the CN role, including a concept analysis and theoretical framework pertaining to the process of how CNs make patient assignments. Based on this work, the researcher assumes that this study will advance knowledge pertaining to the CN role as an important aspect of making hospital care safer.

Additional assumptions included the willingness of CNs to participate in this study and the honesty and integrity of the participants as they described their roles in promoting patient safety. A final assumption related to the voluntary nature of participation in this study with confidentiality and anonymity maintained by removing all identifiable data and the use of codes in place of names during the data collection and analysis process.

Chapter Summary

Chapter 1 presented an overview of the research problem. Specifically, this chapter introduced nurses' roles in patient safety, the CN role, and the CN role related to patient safety, noting the research problem and gap in the literature. This chapter also provided a description of the purpose and nature of this study, the research questions, significance of the study to nursing practice, leadership, education, and research, as well as the theoretical framework. Chapter 1 concluded with definitions of key terms and a discussion of the study's scope, limitations, delimitations, and assumptions. Chapter 2 provides an overview of significant literature pertaining to patient safety, the CN role, the CN role related to patient safety, and the grounded theory design.

Chapter 2

Review of the Literature

Patient safety is a pressing problem given an estimated 195,000 patients die annually in United States hospitals from patient safety events (Department of Veterans Affairs, 2006). CNs are front line clinical leaders responsible for overseeing patient care and hospital unit functioning (Cathro, 2013; Connelly & Yoder, 2003; Flynn et al., 2010; Homer & Ryan, 2013; Small & Moynihan, 1999; Thomas, 2012) and have a role in ensuring patient safety. The purpose of this study was to explore actions and processes CNs implement to keep patients safe and develop a substantive theory regarding actions and processes CNs implement to keep patients safe. Articulating actions and processes CNs implement to keep patients safe and developing a substantive theory can inform CN job descriptions, serve as the basis for CN orientation and training, and empower CNs to promote patient safety in practice.

According to Leedy and Ormrod (2005) and Pan (2008), a literature review analyzes and synthesizes literature relevant to the study topic and situates the study within a broad context. Providing a broad contextual basis for the study was the purpose of this literature review. Specific to grounded theory, Strauss and Corbin (1998) suggested relevant literature serves the following purposes:

1) Assists in devising questions to guide interviews and observations
2) Provides a basis for the researchers to determine where to study relevant concepts
3) Assists in enhancing the researcher's sensitivity to the intricacies of the data
4) Provides a source for making comparisons among data that emerges

5) Assists in confirming findings as well as expanding and validating knowledge of phenomena of interest

Although an extensive literature review prior to data collection and analysis is not part of Classic grounded theory (Glaser & Strauss, 1967), Strauss and Corbin discussed how the researcher's perspective and educational institution requirements influence the use of literature for a study. Classic, Straussian, and Constructivist are three main approaches to grounded theory (Hunter, Murphy, Grealish, Casey, & Keady, 2011), discussed in more detail later in this chapter. This researcher has selected the Straussian approach. Based on the work of Strauss and Corbin (1990, 1998), the Straussian approach acknowledges the role of a literature review in grounded theory. McGhee, Marland, and Atkinson (2007) suggested a literature review at the beginning of grounded theory research is often necessary to fulfill requirements for ethics and quality reviews. In addition, conducting a literature review when beginning the research helps to justify the need for the study while examining the existing knowledge of the topic of interest to determine if grounded theory is the best research design (McGhee et al., 2007). Therefore, this literature review was justified.

This chapter includes discussion of how the literature frames the research on the topic. In addition to literature search criteria on CNs and patient safety, this chapter also includes a discussion of relevant theories applied to patient safety in the literature. Relevant literature pertinent to the CN role as well as the roles of nursing and nursing leadership in patient safety follows. An overview of grounded theory, along with the three main approaches and philosophical paradigms, follows. A critique of the selected

studies' methods and designs and their appropriateness is included, along with a brief discussion of how the selected studies' methods and designs relate to this study.

Literature Search Criteria: CNs and Patient Safety

The literature review on CNs and patient safety began with a general search of peer reviewed/scholarly articles in English with an open data range. The search terms included "charge nurses and patient safety," "charge nurse role functions related to patient safety," and the "charge nurse role" in the general search feature of the University of Phoenix library. This comprehensive search engine features 161 databases, including EBSCO host and ProQuest. The researcher also conducted a search of dissertations and theses with the same search terms in the ProQuest Dissertations and Theses and Dissertations and Theses at University of Phoenix databases. This search also included a third database, COS Papers Invited, featuring calls for papers for conferences and special issues of scholarly journals. Very few of the articles in the general search had relevance to this study. Due to the number of articles yielded with the general search terms, the researcher selected the filter term "charge nurses" in the title for the peer-reviewed articles and "charge nurses" in the subject heading for the dissertations/theses to narrow the search. Refer to Table 1 for a literature summary by search term, both with, and without, the filter.

Table 1

Summary of Literature by Search Terms

Search Term(s)	Peer-Reviewed Articles	Peer-Reviewed Articles with Filter Term	Dissertations and Theses	Dissertations and Theses with Filter Term
Charge nurses and patient safety	18, 114	27	59,787	3
Charge nurse role functions related to patient safety	5,359	8	55,206	3
Charge nurse role	47,351	92	136,547	3

Scanning of titles and abstracts for applicability to the CN role related to patient safety as well as the CN role in general narrowed the search. Articles specific to the CN role that may or may not have specifically discussed patient safety were included in the literature review. Exclusion criteria included articles that did not discuss the CN role or patient safety within hospitals. In addition, the researcher scanned reference lists for additional relevant articles. Google searches, including websites pertinent to patient safety, completed this literature review. A comprehensive literature search was necessary since multiple scholars noted the lack of literature pertaining to the CN role (Connelly, Nabarrete, et al., 2003; Sherman, 2005; Sherman et al., 2011).

Studies pertaining to the CN role suggested that promoting patient safety is an essential part of the CN role (Connelly, Yoder, et al., 2003; Eggenberger, 2011, 2012; Lewis, 1990), although the literature lacked studies exploring specific actions and processes CNs implement to keep patients safe. This gap in the literature supported the need for the proposed study that sought to explore the actions and processes CNs implement to keep patients safe.

Theories Applicable to Patient Safety Cited in the Nursing Literature

To gain an understanding of common theories applied to the patient safety nursing literature, the researcher noted references to specific theories from the search of the literature discussed above. Theories applied in the patient safety nursing literature included high reliability theory (LaPorte & Consolini, 1991), normal accident theory (Perrow, 1984), and Reason's (1990) theory of human error. A fourth theory, structuration theory (Giddens, 1984), proposed as applicable to nurses' roles in patient safety (Groves, Meisenbach, & Scott-Cawiezell, 2011), was also found. The purpose of reviewing theories present in the patient safety nursing literature was to provide an overview of the general literature on patient safety nursing literature, theories which may, or may not, have had relevance to the data analysis for this study.

High reliability theory. First, high reliability theory (HRT) was originally proposed by LaPorte and Consolini (1991), founders of the University of California at Berkeley High Reliability Organization Project. LaPorte and Consolini studied industries that remain virtually error free, despite complex and high-risk operations. These industries included naval aircraft carriers, air traffic control, and nuclear power operations. All of these industries face considerable public pressure to remain error free and have clear operational goals (LaPorte & Consolini, 1991). In addition to not tolerating failure, these three industries also share a similar characteristic: They place the achievement of high reliability operations over the achievement of short-term goals (LaPorte & Consolini, 1991). Similar to other high-risk industries, actions and decisions made on the front lines of health care operations can have catastrophic effects.

Wilson et al. (2011) used HRT as a framework for their study exploring CN decision making on intra-shift staffing. Similar to the decisions made by front line leaders in other high-risk industries, decisions made by CNs can significantly influence hospital unit operations and patient safety outcomes (Wilson et al., 2011). Results from the qualitative, descriptive study revealed that CNs engage in constant decision-making to keep patients safe. Interviews with CNs, staff nurses, and nurse managers revealed CNs balance fluctuations in patient census and acuities with the competencies of available staff. The information CNs obtain from their own assessments of patients along with discussions with health care team members and bed planning assist CNs in reassessing staffing needs throughout a shift (Wilson et al., 2011). Wilson et al. termed this process mindful staffing. One significant implication of Wilson et al.'s study was the identification of how CNs' intra-shift staffing decisions can influence patient safety. In this study, staffing decisions, including the assignment of patients to nurses, may emerge as actions CNs take to keep patients safe.

Normal accident theory. Second, normal accident theory (NAT), proposed by Perrow (1984), acknowledges the inevitability of errors in complex systems (Perrow, 1984; Rijpma, 1997). Tamuz and Harrison (2006) explained how the interaction of complex technologies, procedures, and the influence of human factors cumulate to cause entire systems to break down. According to principles of NAT, people within these complex organizations do not expect errors to occur. In addition, when errors do occur, people lack the ability to intercept and respond to them (Rijpma, 1997).

Redundancy is a key concept of NAT (Tamuz & Harrison, 2006). When applied to the patient safety process of double checking medications, redundancy may actually

contribute to an increase in medication errors. For example, a policy states that two nurses double-check a high-risk medication such as insulin. Since the double-checking of insulin becomes a routine, redundant task, diffusion of responsibility may occur (Tamuz & Harrison, 2006). This diffusion of responsibility can result in the omission of critical safety checks, and, ultimately harm a patient.

As opposed to HRT, where remaining error free is attainable, NAT is more pessimistic (Tamuz & Harrison, 2006). Also in comparison to HRT, where safety and reliability are the most important concerns, safety is one of many priorities in NAT (Tamuz & Harrison, 2006). Once seen as opposite theories, the literature acknowledges that HRT and NAT can, simultaneously, be applied to complex organizations (Rijpma, 1997), including health care (Tamuz & Harrison, 2006). The results of this study may contribute insight into how HRT and NAT apply to actions and processes CNs implement to keep patients safe, including critical safety checks.

Waring, McDonald, and Harrison (2006) found partial support for Perrow's NAT in their ethnographic study in Northern England. Waring et al. explored social, cultural, and organizational issues related to patient safety in the operating department. Findings revealed the need to examine a big picture approach of the entire organizational system, realizing the entire system influences care delivered in the operating department. Within a hospital, individual departments are interdependent and this interdependency contributes to latent or upstream failures. Latent, or upstream failures, result from system failures, as opposed to active failures, which occur at the individual level (Waring et al., 2006). Latent and active failures are also the focus of a third theory: Reason's (1990) theory of human error.

Theory of human error. Reason's (1990) theory of human error assumes errors occur because of the interplay of complex system factors as opposed to human error alone (Hinton Walker, Carlton, Holden, & Stone, 2006; Reason, 1990). According to Reason, errors may be either active or latent. Active failures result from front line operations that result in immediate negative events. Latent failures, in contrast, are generally not related to errors in front line operations, but rather stem from decisions from higher up in the organization and system weaknesses that may be triggered by active failures (Reason, 1990).

Considered within the context of inpatient nursing units, active failures resulting in a patient fall may be a slippery floor and failure to provide non-skid footwear. Latent failures may include a lack of appropriate staffing or lack of necessary equipment to complete work safely (Hinton Walker et al., 2006). For example, a nursing unit may be short-staffed and have a number of patients who are confused and impulsive requiring close monitoring. The lack of staffing needed to monitor patients coupled with a non-functioning bed exit alarm, are latent factors that can contribute to a patient fall.

Structuration theory. A fourth theory proposed as being applicable to nurses and patient safety is structuration theory (Groves et al., 2011), originally proposed by Giddens (1984). Similar to Reason's (1990) theory of human error identifying effects of active and latent failures, the premise of structuration theory is that structure and human action co-exist and interact to produce social phenomena (Giddens, 1984). Thus, structure both supports and limits individual actions. Groves et al.'s work is significant for this study as it articulates the important role of nurses in creating cultures that support patient safety.

Considered within the context of nursing, an organization's patient safety resources and rules influence nurses' actions that keep patients safe. These resources and rules are part of an organization's social structure (Giddens, 1984). Resources may include staffing, equipment access, policies, and having authority for necessary actions needed to keep patients safe (Groves et al., 2011). For example, a medication error may be more likely to occur when a nursing unit is short-staffed and nurses are rushing from patient to patient to administer medications on time. Short staffing, frequent interruptions, and a medication bar-code scanner that is not working influence a nurse to bypass critical checks for safe medication administration. A medication error may therefore occur due to a combination of structure and human actions.

Theoretical Framework: Metaparadigm of Nursing

Although the theories discussed appear in the nursing literature, none have their origins in nursing theory. As discussed in Chapter 1, Glaser and Strauss (1967) as well as Strauss and Corbin (1990) advocated pre-imposing theoretical frameworks is not generally conducive to grounded theory designs aimed at theory generation. However, having a broad, all-encompassing framework that was specific to nursing was important to the aims of this study focused on a specific nursing role. Fawcett, Watson, Neuman, Hinton Walker, and Fitzpatrick (2006) discussed how theoretical frameworks provide a basis for nursing inquiry and knowledge development necessary to advance nursing science.

As previously discussed, nursing knowledge is structured around the metaparadigm concepts of person, health, environment, and nursing (Fawcett, 1984, 2005). Although the metaparadigm is not prescriptive enough to be a theory (Fawcett,

2005), the metaparadigm provided a broad framework to situate this grounded theory study within the existing structure of nursing knowledge. Conducting research aimed at advancing nursing knowledge by generating a substantive theory pertaining to actions and processes CNs implement to keep patients safe fits within the broad, conceptual framework provided by the metaparadigm of nursing. For the purposes of this study, person referred to hospitalized patients. Health referred to keeping patients safe by striving to eliminate preventable errors and adverse events. Environment referred to medical-surgical units. Nursing referred to the CN role and the actions and processes CNs implement to keep patients safe. (See Appendix A for a diagram of the framework.)

Nurses, Leadership, and Patient Safety

Nurses are integral to patient safety (Drenkard, 2011; Griffin & Madigan, 2007; Groves et al., 2011; Page, 2004). Nurses spend the most time with patients out of any health care provider and their assessment and monitoring responsibilities place them in opportune positions to keep patients safe (Drenkard, 2011; Page, 2004). In the IOM report, *Keeping patients safe: Transforming the work environment of nurses,* Page articulated the importance of nursing leadership for cultures of safety. In fact, the IOM report discussed management and leadership as key elements in a bundle of factors needed to improve nursing work environments and keep patients safe (Page, 2004). As front line clinical leaders, CNs are responsible for patient safety.

Due to the emergent nature of grounded theory, adding to a literature review after data collection and analysis occurs is common in grounded theory, based on the categories and subcategories that emerge (Strauss & Corbin, 1990, 1998). Therefore, a brief overview of patient safety issues most frequently noted by CNs in this study is

included here. These patient safety issues include falls, pressure ulcers, health care acquired infections, and compliance with core measures.

According to the World Health Organization (WHO, 2012), a fall is "an event which results in a person coming to rest inadvertently on the ground or floor or other lower level" (para. 1). Falls are a significant patient safety problem in hospitals. According to the National Patient Safety Foundation (2014), 500,000 patients will fall this year in United States hospitals. Patient falls in hospitals contribute to patient and family suffering, increased lengths of stays as well as increased costs of treatment (Donoghue, Graham, Mitten-Lewis, Murphy, & Gibbs, 2005; Shever, Titler, Mackin, & Kueny, 2011; Tzeng, Yin, & Grunawalt, 2008).

Medicare and Medicaid no longer reimburse organizations for the costs associated with falls that occur when patients are hospitalized (Centers for Medicare & Medicaid Services, 2014). Dacenko-Grawe and Holm (2008) articulated that an important part of the CN role involves monitoring compliance with fall prevention initiatives. Fall prevention initiatives discussed in the literature include moving patients at high risk for falls closer to the nurses' station (Healey, Monro, Cockram, Adams, & Heseltine, 2004; Rush et al., 2008), utilizing bed exit alarms (Capezuti, Brush, Lane, Rabinowitz, & Secic, 2009; Dacenko-Grawe & Holm, 2008; Shorr et al., 2012), providing fall prevention education (Dacenko-Grawe & Holm, 2008; Quigley et al., 2009), hourly rounding (Meade, Bursell, & Ketelsen, 2006; Quigley et al., 2009), multidisciplinary team involvement in fall prevention (Dacenko-Grawe & Holm, 2008; Rush et al., 2008), and utilizing one to one sitters for patients most at risk for falls (Adams & Kaplow, 2013; Donoghue et al., 2005; Giles et al., 2006; Laws & Crawford, 2013).

According to the National Pressure Ulcer Advisory Panel (2014), a pressure ulcer is a "localized injury to the skin and/or underlying tissue usually over a bony prominence, as a result of pressure, or pressure in combination with sheer" (para. 4). Similar to falls, hospital-acquired pressure ulcers are considered preventable events and costs associated with the care of stage III or stage IV hospital-acquired pressure ulcers are no longer reimbursed through Medicare and Medicaid (Centers for Medicare & Medicaid Services, 2014). Stage III pressure ulcers involve full thickness skin loss, whereas stage IV pressure ulcers involve exposed bone, muscle or tendon resulting from full thickness tissue loss (National Pressure Ulcer Advisory Panel, 2014).

Nursing interventions applicable to the prevention of pressure ulcers supported by the literature include the following: identifying patients most at risk for pressure ulcer development, engaging the nursing and multidisciplinary teams in pressure ulcer prevention strategies, ensuring patients are on the appropriate surface (such as a pressure redistribution or low air loss mattress), frequent repositioning, addressing incontinence and moisture problems, as well as assessing and intervening to improve nutrition (Baldelli & Paciella, 2008; Barker et al., 2013; Downie, Perrin, & Kiernan, 2013). Although not specific to the CN role, Wurster (2007) suggested that nursing leaders have important roles in the prevention of pressure ulcers. Nursing leaders' responsibilities in pressure ulcer prevention include setting expectations for pressure ulcer prevention and providing guidance and support for staff in the implementation of evidence-based initiatives (Wurster, 2007).

Health care acquired infections are a global health problem. One of the WHO's global patient safety initiatives is for Clean Care (WHO, 2014a). Adams and Korniewicz

(2011) discussed how health care acquired infections are the adverse events that occur most frequently in health care with hundreds of millions of people affected globally on an annual basis. According to the WHO (2014b), at any given time, health care acquired infections impact 1.4 million people worldwide. Costs associated with health care acquired infections in some countries are between $6 billion and $29 billion United States dollars annually (WHO, 2014b). These costs relate to prolonged or recurrent hospitalizations, litigation costs, medical expenses, and lost income (WHO, 2014b). Examples of health care acquired infections discussed by CNs in this study included clostridium difficile (cdiff) (Dubberke, 2012) as well as central-line associated blood stream infections (Weeks, Goeschel, Cosgrove, Romig, Berenholtz, 2011).

Dubberke (2012) discussed how cdiff is a gram positive, spore producing, and toxic bacterium causing most cases of antibiotic resistant diarrhea. Depending upon its severity, patients who acquire cdiff infections may develop uncomplicated diarrhea or in severe cases, face sepsis and death (Dubberke, 2012). Cdiff is resistant to many standard hospital disinfectants including alcohol based waterless disinfectants, causing easy transmission. Cdiff is costly. Dubberke explained how costs in the United States associated with cdiff are between $1.1 and $3.2 billion annually. Ensuring patients are isolated when they first exhibit diarrhea and ensuring a stool specimen is promptly sent so appropriate treatment can be started if needed are necessary nursing actions when cdiff is suspected (Grossman & Mager, 2010).

Central-line associated blood stream infections occur when patients who have a central venous access develop bacteremia that is not attributable to another source (Weeks et al., 2011). Central-line associated blood stream infections are the most deadly,

prevalent, and expensive of all hospital-acquired conditions (Weeks et al., 2011). Infections can occur when the line is inserted or when bacteria enters through the hub of the catheter once it is in place. Reducing the prevalence of hospital-acquired infections is essential to the promotion of safe patient care (Weeks et al., 2011). Finis and Porche (2005) identified important actions and processes for nursing leaders in infection prevention that include ensuring the staff are aware of the infection prevention policies and protocols and actively involving staff in infection surveillance and infection prevention initiatives, actions and processes supported by this study.

Core measures as evidence-based standards of care reported to the public and tied to federal reimbursement and penalty (Rainer, 2013). Core measures exist for specific diseases, such as heart failure and stroke, as well as for preventative care, such as immunizations and health screenings (Rainer, 2013). Ensuring compliance with core measures is best achieved through a multidisciplinary approach with front line nurses and nursing leaders having key roles (Hinojosa, Giardina, Radtke, & Vournazos, 2009).

As the examples above illustrate, nurses and nursing leaders have important roles in patient safety initiatives. The IOM called for maximizing the capacity of the nursing workforce, including nursing leadership (Page, 2004). Within the context of the researcher's study and the CN role, this recommendation is significant. Maximizing the potential of CNs - front line clinical leaders - requires a thorough understanding of this important role.

The CN Role

The CN role involves complex clinical, leadership, managerial, and administrative functions (Cathro, 2013). As front line clinical leaders, CNs assume responsibility for

patient care and overall unit functioning (Cathro, 2013; Connelly & Yoder, 2003; Flynn et al., 2010; Homer & Ryan, 2013; Matthews, 2010; Small & Moynihan, 1999; Thomas, 2012). The literature on the CN role suggests this front line position involves diverse functions. CN functions discussed in the literature include supervising and coordinating nursing activities (Connelly & Yoder, 2003; Matthews, 2010) and assisting with managerial and administrative tasks (Connelly & Yoder, 2003; Hughes & Kring, 2005). In addition, CN functions include providing front line leadership (Allison, 2008; Ambrose, 1995; Cartier, 1995; Nunn, 2008; Sherman et al., 2011; Small & Moynihan, 1999); facilitating teamwork (Connelly & Yoder, 2003; Hughes & Kring, 2005; Sherman et al., 2013); making patient assignments (Bostrom & Suter, 1992; Cathro, 2013; Homer & Ryan, 2013; Matthews, 2010; Sherman et al., 2013; Shermont & Russell, 1996); facilitating and monitoring patient throughout (Homer & Ryan, 2013; Matthews, 2010; Sherman et al., 2013); and assuming responsibility for unit functioning within the context of regulatory and legal issues (Mahlmeister, 1999, 2006).

Due to the level of responsibility, complexity, and potential for stress when assuming the CN role, Admi and Moshe-Eilon (2010) developed a CN stress questionnaire (CNSQ) based on findings from interviews and focus groups with CNs at one large hospital in Israel. Admi and Moshe-Eilon found that stressors facing CNs were different from those facing staff nurses. The main stressors facing CNs included "authority-responsibility conflict, deficient resources, role conflict, patient-nurse interaction, overload (physical and emotional), and managerial decision-making" (Admi & Moshe-Eilon, 2010, p. 154-155). The CNSQ is an example of a tool that can help

articulate and quantify stress experienced by CNs and requires further validation in other countries (Krugman, Judd Kinney, Heggem, & Frueh, 2013).

Literature from the United States generally refers to a CN as a nurse who oversees the functioning of a unit on a given shift, but is not generally in a formal management position. In contrast, literature from the United Kingdom uses the term CN to describe a nurse in a formal management position, such as the head of a unit or department (Agnew & Flin, 2014; Platt & Foster, 2008; Wilmot, 1998). Hewison (2013) explained how in the UK, the CN may also be referred to as the ward sister. Within the management structure, the CN/ward sister position is below the executive level but above front line management (Hewison, 2013). The term head nurses was used to describe front line nurse leaders in a study exploring the nursing leadership role in facilitating patient safety in Iran (Vaismoradi, Bondas, Salsali, Jasper, & Turunen, 2014). For the purposes of this study, the use of the term CNs will refer to front line nursing leaders who are not in a formal management position.

CN Role Development, Competencies, and Role Perspectives

Given the complexity of their roles, CNs have identified the need for formal role preparation (Patrician, Oliver, Miltner, Dawson, & Ladner, 2012; Thomas, 2012). Some health care organizations have helped better prepare CNs for their roles by developing workshops and other role development activities (Cartier, 1995; Connelly, Nabarrete, et al., 2003; Homer & Ryan, 2013; Krugman et al., 2013; Krugman & Smith, 2003; Mahlmeister, 2006; Sherman, 2005, Sherman et al., 2013; Thomas, 2012). For example, Thomas described a three-part educational series one organization prepared for its CNs.

In addition to inadequate role preparation, results from surveys suggested CNs felt ambiguity surrounding their role expectations (Thomas, 2012). In addition, nurse leaders observed CNs and noted significant variance in actions performed. With this in mind, the three part educational series included content on leadership, management, delegation, and decision making, along with challenging clinical scenarios frequently experienced by CNs. Given the positive response from the educational series, Thomas recommended ongoing education and mentoring for CNs, recommendations supported by Patrician et al. (2012), Flynn et al. (2010), Eggenberger (2011, 2012); and Krugman et al., (2013). Furthermore, Thomas discussed one outcome of the educational series was CNs taking on active roles in patient advocacy and patient safety issues during rounds and care conferences. This finding suggests role development strategies might assist CNs in promoting patient safety, providing support for the purpose of this study.

A similar finding and recommendation emerged from Patrician et al.'s (2012) qualitative, descriptive study exploring role development needs from the perspectives of CNs. In addition to receiving ongoing role development and mentoring in the workplace, CN role preparation must begin in pre-licensure programs and continue in graduate programs (Patrician et al., 2012). Specifically, Patrician et al. recommended content on patient safety from the CN perspective be a competency included in graduate nursing programs.

Recognizing the lack of CN role preparation and clear role expectations, Connelly, Yoder, et al. (2003) conducted a qualitative, exploratory study to explore CN competencies. The study utilized stratified purposive sampling. Bogdan and Biklen (2007) indicated that qualitative researchers generally use purposive sampling, with study

participants selected based on their knowledge of, or experience with, the phenomena of interest. Purposive sampling was the sampling strategy used in this study for initial data collection. Connelly, Yoder, et al.'s purposive sample consisted of 42 participants including 12 CNs. The remaining study participants were staff nurses, head nurses, and supervisors at a military hospital.

Results of the study revealed four categories of competencies and 54 individual CN competencies (Connelly, Yoder, et al., 2003). The four categories of competencies included clinical/technical, critical thinking, organizational, and human relations (Connelly, Yoder, et al., 2003). Of particular significance to this study, one of the competencies noted under the clinical/technical category was providing for patient safety. Although Connelly, Yoder, et al.'s study was significant in articulating CN competencies, only some of the participants were CNs. The study findings are, therefore, not specific to CNs' perceptions of role competencies. The findings did have practical application as evidenced by the implementation of the competency categories by Flynn et al. (2010) to develop CN role responsibilities.

Similar to Connelly, Yoder, et al. (2003), Flynn et al. (2010) found role ambiguity and a lack of formal role preparation for those in the CN role. With these findings in mind, the leaders implemented an intervention. The intervention consisted of clarifying the CN role and developing criteria and responsibilities for CNs based on Connelly, Yoder, et al.'s CN competency categories. In addition, the leaders created a reference manual outlining CN roles and responsibilities and developed a CN orientation workshop. CNs reported the workshop assisted them with clinical challenges they often

encountered. Furthermore, the clear competencies and expectations increased CNs' confidence and performance in their roles (Flynn et al., 2010).

Homer and Ryan's (2013) study findings also support that CN education and role development programs may contribute to improvements in CNs' perceptions of their job satisfaction and job performance. For example, Homer and Ryan found statistically significant improvements in CNs' perceptions of job satisfaction and job performance before and after a CN educational program [t (78) = - 2.64; p = 0.01]. CNs also discussed the need to develop skills related to conflict management, providing feedback, performance management, and customer service (Homer & Ryan, 2013).

Sherman et al. (2013) discussed feedback received from CNs during role development workshops within a large health care system. Similar to findings from Homer and Ryan (2013), CNs reported many challenges faced as front line leaders including managing team conflict, keeping patients and their families happy, and staying up to date with policy and procedure changes (Sherman et al., 2013). However, CNs reported satisfaction in their roles by assisting with staff development, maintaining patient satisfaction, and leading their teams. Sherman et al. articulated how the focus of their past CN workshops was task-based competencies. Based on the feedback from CN participants, Sherman et al. discussed the need to further develop CNs' leadership capacity in managing stress and conflict and building high-functioning teams.

Assessing for improvements in CN role performance and leadership capacity was the focus of Krugman et al.'s (2013) longitudinal study. Krugman et al. (2013) reported on a longitudinal evaluation of a CN leadership and development program spanning the years 1996 - 2012 following implementation of a formal CN role. To assess for changes

in CN self-reported leadership capabilities, Krugman et al. utilized Kouzes and Posner's leadership practices inventory. *T* tests and ANOVA explored differences between and among groups.

Comparative data from 1996 and 2000 showed permanent CNs had statistically significant improvements in three of five leadership domains: "inspiring a shared vision (t = - 2.26, P = .025), challenging the process (t = 3.18, P = .002)" (Krugman et al., 2013, p. 441) as well as "modelling the way (t = 3.18, P = .025)" (Krugman et al., 2013, p. 441). Scores from 2008 compared to 2012 suggested that permanent CNs demonstrated statistically significant improvements in "enabling others to act (t = -3.08, P = .002)" (Krugman et al., 2013, p. 441). Furthermore, during the time frame from 1996 - 2008 compared to 2012, permanent CNs demonstrated statistically significant improvements in the domains of "enabling others to act (t = 3.49, $P = \leq .001$)" (Krugman et al., 2013, p. 441) and "inspiring a shared vision (t = 3.32, $P = \leq .001$)" (Krugman et al., 2013, p. 441). These results suggest that CN education and role development programs can assist in improving self-perceived leadership capabilities of CNs.

Similar to Patrician et al.'s (2012), Thomas's (2012), Flynn et al.'s (2010), Krugman et al.'s (2013), and Homer and Ryan's (2013) findings, one of the outcomes identified in Eggenberger's (2011, 2012) study was the need for ongoing education and role development for CNs. In addition, Eggenberger identified how most CNs function without role specific competencies, and, in some cases, without job descriptions, adding to role ambiguity. The aim of Eggenberger's qualitative, descriptive, exploratory study was to explore the experience of being a CN from the perspectives of CNs in acute care, perspectives not published previously in the nursing literature.

Eggenberger (2011, 2012) suggested a qualitative, descriptive, exploratory study was appropriate given her study's purpose was the first to explore the lived experience of being a CN in acute care from the perspectives of CNs. Sandelowski (2000) discussed how qualitative descriptive designs are common in practice disciplines. Unlike grounded theory where extensive interpretation of data occurs (Strauss & Corbin, 1990), the primary purpose of a qualitative, descriptive, exploratory study is description.

Qualitative descriptive designs feature low inference interpretation of beliefs, events, or actions as described by study participants (Sandelowski, 2000). Bogdan and Biklen (2007) indicated that with description, the focus is on maintaining the complexity of data without attempting to reduce the data. Consistent with Eggenberger's (2011, 2012) presentation of findings, Bogdan and Biklen suggested that direct quotes from participants help illustrate descriptive findings.

A key theme identified in Eggenberger's (2012) study was "creating a safety net" (p. 503). CNs consistently reported how ensuring patient safety was an important part of their role. To justify the importance of this study, Eggenberger (2011, 2012) articulated the need for future research to provide support for the CN role. Similar to Eggenberger's recommendations, one recommendation arising from Vaismoradi et al.'s (2014) qualitative study exploring facilitation of safe patient care was the need to conduct qualitative research aimed at theory development specific to nursing leadership and patient safety.

Based on the findings of the above studies, competencies required for the CN role are numerous. CNs also have diverse role responsibilities and generally do not receive formal role preparation, resulting in role ambiguity. Role development activities assist

CNs in clarifying their roles. In addition, role development activities assist CNs in managing their challenging role responsibilities, including promoting patient safety. Although role ambiguity surrounding the CN role exists, the above studies suggest keeping patients safe is an important part of the CN role.

Overview of Grounded Theory

Considered the founders of grounded theory, Barney Glaser and Anselm Strauss pioneered this research design in the 1960s to help bridge the theory to research gap in the social sciences by proposing theory generation through data by a process called constant comparison (Glaser & Strauss, 1967). Influenced by different world-views through their respective academic institutions, Glaser's background at Columbia University was primarily positivist, focused on an objective truth and quantitative methods. Strauss's background, on the other hand, was influenced by the qualitative movement from the 1920s-1950s, known as the Chicago Tradition (Glaser & Strauss, 1967). Glaser and Strauss (1967) discussed how, instead of theories based on assumptions, grounded theories emerge from the data and examples from the data illustrate the theories.

Hunter, Murphy, Grealish, Casey, and Keady (2011) discussed four main defining features of grounded theory as follows:

1) Moving beyond description for conceptualization and theory development
2) Concurrent data collection and analysis
3) Theoretical sampling with participants selected based on the data that emerges through constant comparison
4) An openness for theory development as it emerges in the data

Approaches to grounded theory. Three different approaches to grounded theory that have evolved over time include Classic, Straussian, and Constructivist (Hunter et al., 2011). Originating from Glaser and Strauss (1967), key features of Classic grounded theory include the following:

1) The problem of interest is determined emergently without an initial literature review
2) The emerging theory is derived directly from the data
3) Researchers interact with those being studied to understand social actions and processes
4) Lacks a detailed approach to guide the collection and analysis of data (Hunter et al., 2011)

Strauss and Corbin (1990, 1998) adopted a more structured approach to conducting grounded theory research compared to Glaser and Strauss (1967). This more structured approach also acknowledged the realities facing modern-day researchers needing to have a literature review and thorough descriptions of research methods and procedures. Key features of the Straussian approach, based on the work of Strauss and Corbin include the following:

1) Research problems identified through literature, professional and personal experiences, and pragmatic needs
2) Acknowledges the realities of the need to comply with ethics and quality reviews
3) Offers a structured approach to data collection and analysis through the Paradigm Model

4) The Paradigm model helps to organize emerging categories of data based on their structure and process
5) The structured approach may be most appropriate for novice researchers (Hunter et al., 2011; Strauss & Corbin, 1998)

The third main approach to grounded theory is constructivist grounded theory, primarily based on the work of Charmaz (2006). Key features of the constructivist approach include the following:

1) A collaborative approach to data collection and analysis as the researcher and participants co-construct meaning
2) Theory development builds on participants' and researchers' experiences by striving to eliminate power imbalances
3) In-depth interactions between participants and the researchers
4) Emerging theory situated in a specific time, place, and culture (Charmaz, 2006; Higginbottom & Lauridsen, 2014; Hunter et al., 2011)

Consistent with traditional grounded theory, Charmaz (2008) discussed how theoretical sampling, systematic comparison, using broad concepts to conceptualize research, and subjecting concepts to empirical scrutiny, are all part of constructivist grounded theory.

The approach to grounded theory selected for the purposes of this study was Straussian, based on the work of Strauss and Corbin (1990, 1998). The researcher discusses the application of this approach in further detail in chapter 3. The varying approaches to grounded theory have evolved through the influence of diverse philosophical paradigms discussed below.

Philosophical paradigms and grounded theory. Classical grounded theory, as proposed by Glasser and Strauss (1967), is most compatible with the post positivist paradigm (Annells, 1996; Higginbottom & Lauridsen, 2014). The post positivist paradigm deviates from positivism in the acknowledgement of a lack of one truth or reality (Letourneau & Allen, 2006). Rather, post positivists acknowledge the value of obtaining an insider's, or emic perspective, through qualitative research, and accept knowing as subject to interpretation (Annells, 1996; Letouneau & Allen, 2006). However, post positivists do maintain elements of positivist thought, including acknowledging the role of structure and control in research endeavors (Annells, 1996).

Grounded theory also has roots in the philosophical perspective of symbolic interactionism, based on the belief of creating meaning through social interaction and interpretation (Aldiabat & Le Navenec, 2011; Annells, 1996). Higginbottom and Lauridsen (2014) discussed how the work of Strauss and Corbin (1990, 1998) is more consistent with symbolic interactionism and pragmatism than is classical grounded theory. From a symbolic interactionism perspective, created meaning directs actions and a sense of self develops through interactions (Aldiabat & Le Navenec, 2011; Annells, 1996).

Based on the work of Pierce, James, and Dewey, pragmatism offers an action-oriented, practice-based approach to theory-development (Doane & Varcoe, 2005; Warms & Schroeder, 1999). From the pragmatic perspective, theory is relevant to, and derived from, practice, and practice is relevant to, and guided by, theory (Doane & Varcoe, 2005). Charmaz (2008) suggested principles of pragmatism align with principles

of constructivist grounded theory, including a focus on actions, processes, interpretations, and problem solving.

In addition to the philosophical perspectives of symbolic interactionism and pragmatism, Annells (1996) suggested the later work of grounded theorists' Strauss and Corbin (1990, 1998) is most compatible with relativism, whereby meaning and interpretation is, at least partially, dependent upon context-specific factors such as time, place, and organizational factors. Higginbottom and Lauridsen (2014) also suggested constructivist grounded theory is influenced by the relativist philosophical paradigm. The diverse philosophical paradigms that inform grounded theory help to make grounded theory a versatile approach for theory generation to inform nursing practice and leadership.

Using Grounded Theory to Inform Nursing Practice and Leadership

Strauss and Corbin (1990) explained how, in addition to description, a grounded theory design involves the interpretation of findings to provide explanations of data and the creation of a theory to guide actions. An example of a study pertaining to the CN role that used a grounded theory design to produce a substantive theory was by Lewis (1990). The aim of Lewis's study was creation of a substantive theory on CNs' perceptions of their role responsibilities. According to Glaser and Strauss (1967), substantive theories emerge from data and have a focused context and practical application.

Similar to Eggenberger (2011, 2012), Lewis (1990) also used participants' responses to describe the emerging categories of data and linked the responses and findings to existing literature. Data categories included setting frameworks, setting standards (including the need for standards related to patient safety), monitoring and

assessing competence, facilitating/supporting, and show and tell. These categories emerged during data analysis and interpretation as CNs discussed their responsibilities.

Lewis (1990) indicated one weakness of his study was basing findings on what CNs reported they did. Supplementing data obtained from interviews with observations to assess congruence with CNs' reported actions and the actions they take in practice may have strengthened Lewis's study. Despite this limitation, Lewis's study provided important insights. For example, outcomes of the study included the recommendation that CNs remain in front line clinical supervisory roles, instead of taking on more management responsibilities that reduce clinical time. Given CNs were found to have a tremendous influence on the adoption of change, Lewis recommended CNs be actively involved with discussions and decisions surrounding proposed change, an important consideration for nursing leaders. Most significant to this study, Lewis referred to CNs as professional gatekeepers. As professional gatekeepers, CNs uphold professionalism and protect public interest, important roles for keeping patients safe.

As Lewis's (1990) study illustrates, the substantive theory generated through a grounded theory design can inform nursing practice and leadership. Although not specific to the CN role, Dickson and Flynn (2012) used a grounded theory approach to understand nurses' thoughts and actions related to medication safety and the prevention of medication errors, key aspects of patient safety (Blegen, 2006). Specifically, Dickson and Flynn sought to identify the actions nurses take in practice to prevent medication errors from reaching patients, while also articulating the process of safe medication administration in the clinical setting.

Data collection occurred by interviewing nurses to obtain their thoughts and the specific actions they take to prevent medication errors (Dickson & Flynn, 2012). Dickson and Flynn had an outline of key questions prepared but conducted flexible interviews, allowing nurses the opportunity to explain their thought processes and provide detailed explanations of the phenomena of interest. Remaining flexible during the interview process is a strategy applicable to this study. Themes that emerged from the data included safe medication practices such as patient education, advocating for patients when working with pharmacy and physicians, along with actions to manage the environment, such as managing distractions and facilitating interdisciplinary communication (Dickson & Flynn, 2012).

Similar to Lewis's (1990) study, the outcome of Dickson and Flynn's (2012) grounded theory design was a substantive theory to guide practice. Dickson and Flynn's substantive theory outlined safe medication processes and practices from the perspectives of nurses, intended to have practical applications in the development and refinement of policies on medication safety (Dickson & Flynn, 2012). Similar to Dickson and Flynn's study, findings from this study may inform practice and be used to develop and refine policies related to the CN role and patient safety.

Actions and processes were also the focus of Nunn's (2008) grounded theory study pertaining to the CN role. Specifically, Nunn sought to understand leadership skills and behaviors (actions) that make CNs more effective in their roles as well as to understand how CNs acquired these skills (processes). Nunn's study also had the goal of informing nursing practice and leadership by using study findings to develop a CN leadership program. Nunn framed her problem by identifying the lack of literature

pertaining to CN leadership skills, the fact that many CNs enter the role lacking formal role preparation, as well as the need for health care organizations to develop clinical leaders.

Similar to Eggenberger's (2011, 2012) and Connelly, Yoder, et al.'s (2003) studies, Nunn's sample included CNs, relief CNs, staff nurses, and managers who had previously assumed the CN role. Nunn framed the significance of her study through a discussion of the nursing shortage, the complexities of the CN role, the importance of the CN role to unit functioning and staff performance, and the routine practice of placing nurses in charge roles without adequate preparation.

Nunn (2008) utilized a purposive sample of 15 participants and discussed the appropriateness of purposive sampling for the generation of well-developed categories, valid findings, and detailed descriptions. For data collection, Nunn conducted both interviews and observations, data collection techniques utilized in this study. The purpose of observations was to demonstrate congruence between participants' interview responses and their actions in practice (Nunn, 2008). One weakness Lewis (1990) noted in his grounded theory study was relying on participants' interview responses to describe their actions. By conducting observations, Nunn was able to observe CNs' actions in practice to support their interview responses.

The four main attributes of effective CNs based on data analysis included core leadership skills, relationship management, emotional intelligence, and technical skills (Nunn, 2008). Similar to recommendations from other scholars and researchers (Cartier, 1995; Connelly, Nabarrete, et al., 2003; Eggenberger, 2011, 2012; Flynn et al., 2010; Krugman & Smith, 2003; Mahlmeister, 2006; Patrician et al., 2012; Sherman, 2005,

Thomas, 2012), Nunn also recommended health care organizations implement CN role development programs to enhance the effectiveness of this important front line leadership role. This recommendation was significant to this study given one aim was to articulate actions and processes CNs implement to keep patients safe to serve as the basis for CN orientation and training.

The above studies all utilized grounded theory designs, the design most appropriate for this study. Data collection involved interviews and observations. Grounded theory data analysis procedures led to the development of substantive theories. The substantive theories had practical applications for nursing practice and leadership.

A Study That Used a Quantitative Approach

Instead of a qualitative approach, Wilson et al. (2012) used a quantitative, descriptive, correlational, and cross sectional design to explore differences between CNs and non-CNs in their perceptions of a unit's patient safety culture influencing the implementation of evidence-based guidelines. Feng, Bobay, and Weiss (2008) described the patient safety culture in nursing as the collective values and beliefs nurses hold about patient safety based on the complex interplay of personal, task, system, and communication contexts.

Wilson et al. (2012) indicated previous researchers studied how managers and staff nurses perceived a unit's patient safety culture, suggesting managers had more favorable perceptions of patient safety culture than staff nurses did. The problem identified by Wilson et al. was the gap in the literature related to differences between CNs and non-CN nurses in perceptions of a unit's patient safety culture. Wilson et al. framed the importance of their study within the context of implementing evidence-based

guidelines in practice, the importance of nursing leadership in implementing these guidelines, and the need to create High Reliability Organizations as a means to improve patient outcomes.

A *t* test analyzed differences between nurses with some CN experience and those with no CN experience on their perceptions of a unit's patient safety culture. Results showed that nurses with no CN experience reported higher perceptions of a unit's patient safety culture than those with some CN experience (Wilson et al., 2012). A possible explanation for this finding was that CNs are more aware of threats to patient safety than nurses who do not assume the CN role, due to their exposure to issues affecting all patients on a unit at a given time (Wilson et al., 2012). Wilson et al.'s study articulated how the CN role is distinct from the staff nurse role and that CNs may be able to contribute unique wisdom about a unit's patient safety culture, important justification for the researcher's study. In addition, Wilson et al.'s study provided valuable knowledge specific to the CN role and patient safety by identifying that CNs perceive a unit's patient safety culture differently than staff nurses.

One of Wilson et al.'s (2012) research questions consisted of exploring differences between groups. Therefore, a quantitative method was appropriate (Marczyk, DeMatteo, & Festinger, 2005). In addition, the various independent variables (percentage of time spent in the CN role, number of years of experience, shift worked, time worked on current unit, educational level) and dependent variables (perceptions of a unit's patient safety culture, reporting of safety events, team work, safety grade) studied were conducive to a quantitative approach (Marczyk et al., 2005). A quantitative approach was not conducive to the aims of this study. The intent of this study was to

explore CN actions and processes CNs implement to keep patients safe, as opposed to identifying cause and effect or correlational relationships between pre-determined variables (Marczyk et al., 2005).

As the above example illustrates, the studies included in this review provided justification for why a qualitative, grounded theory design was most consistent with the aims of this study, as opposed to other qualitative designs or a quantitative method. In addition, the literature included in this review provided support for the topic of this study.

Gap in the Literature

The existing literature lacks a clear discussion of the specific actions and processes CNs implement to keep patient safe. This study addressed this gap in the literature by articulating these actions and processes and proposing a substantive theory pertaining to how these actions and processes help to keep patients safe.

Chapter Summary

Chapter 2 expanded on the CN role and provided examples from the literature regarding the roles of nurses and CNs in patient safety. Key themes synthesized from the literature pertinent to the CN role included complex and diverse responsibilities, a lack of CN role preparation, role ambiguity, and the need for CN role development in the workplace and in nursing education programs. Specific to the CN role and patient safety, the literature suggests CNs have significant roles in promoting patient safety and further knowledge will help to maximize the effectiveness of CNs in fulfilling these important role functions.

Chapter 2 included an overview of grounded theory, including various approaches to grounded theory and applicable philosophical paradigms. The variety of studies

presented demonstrated how the methods and designs must align with the aims of the research. The studies that utilized grounded theory provided considerations for incorporation into this study. In addition, analysis of various data collection techniques provided support and justification for interviews and observations in grounded theory. Although each of the studies discussed offered insight into nurses' roles in patient safety, the CN role, and CNs and patient safety, none specifically addressed actions and processes CNs implement to keep patients safe. Chapter 2 helped identify the gap in the literature and supported the need for this study. Chapter 3 will explain the research methods and design implemented for this study.

Chapter 3

Methods

The purpose of this study was to explore actions and processes charge nurses (CNs) implement to keep patients safe. Patient safety is a pressing issue, given an estimated 195,000 patients die annually in United States hospitals from patient safety events (Department of Veterans Affairs, 2006). CNs are front line clinical leaders responsible for overseeing patient care and hospital unit functioning (Cathro, 2013; Connelly & Yoder, 2003; Flynn et al., 2010; Thomas, 2012) and have a role in ensuring patient safety.

Chapter 3 presents the study's method and design. This chapter provides justification for a qualitative methodology and grounded theory design as the most appropriate for the topic and purpose of this study. References to seminal sources for qualitative methodology and grounded theory design support the argument. In addition, this chapter includes an explanation of ethical considerations. This chapter also describes the alignment of the study's method and design with the site, sample, sampling, and data collection procedures, and how the research questions related to the interview questions. Next, this chapter includes a discussion of data collection instruments, including interview guides and an observation protocol. Following the discussion on instrumentation, this chapter outlines techniques used for data analysis, interpretation, and presentation of data. Chapter 3 concludes with information on trustworthiness, including rigor, biases, and assumptions.

Research Method Appropriateness

The three types of research methods are quantitative, qualitative, and mixed methods. Quantitative methods use numbers for description, identification of cause and effect, or identification of correlational relationships between pre-determined variables (Marczyk et al., 2005). The aim of this study was not to describe or quantify the frequency of pre-determined actions and processes, nor identify relationships between any specific actions and processes and patient safety outcomes. A quantitative or mixed method approach was not appropriate for this study since the aim was to articulate actions and processes CNs implement to keep patients safe from the perspective of those in the CN role and generate a substantive theory regarding actions and processes CNs implement to keep patients safe

Qualitative methods seek an emic (insider's) perspective, as opposed to an etic (outsider's) perspective of phenomena (Denzin & Lincoln, 2008). Seeking an emic perspective allows researchers to situate themselves within the complex contexts of study participants' everyday lives and secure rich descriptions (Denzin & Lincoln, 2008). Qualitative methodology is appropriate when little knowledge exists about a topic (Strauss & Corbin, 1990), consistent with the lack of literature on the actions and processes CNs implement to keep patients safe.

Research Design Appropriateness

Schram (2006) discussed five main types of qualitative designs: Narrative inquiry, ethnography, case study, phenomenology, and grounded theory. The following discussion helps justify why these other four designs were not appropriate for this study and articulates why grounded theory was consistent with the aims of this study.

Schram (2006) suggested narrative inquiry involves the construction of meaning through the stories told by participants' life experiences and events. Therefore, the focus of narrative inquiry is both the content of the stories as well as the manner in which participants' recall the experiences and events (Schram, 2006). Narrative inquiry would have been appropriate if the focus of this study was on CNs' stories of patient safety experiences and events. Although some participants chose to share specific stories of patient safety events and experiences, narratives were not the focus of this study. The focus of this study was on specific actions and processes CNs implement to keep patients safe.

Second, ethnography involves the exploration of a group of people who share a similar culture, characterized by the researcher engaging in prolonged observations of study participants in their natural environment (Schram, 2006). Schram further explained how the focus of ethnography is on the context in which behaviors and activities occur. Since ethnography requires prolonged observations in the field, it was not appropriate for this study. In addition, the goal of ethnography is describing and interpreting a particular culture (Schram, 2006), which was not consistent with the aim of this study.

Third, a case study involves the exploration of a system defined by a specific time and location, such as a specific activity, event, or program (Schram, 2006). A case study was not appropriate given the aim of this study was to identify actions and processes CNs implement to keep patients safe that were not bound by a specific time and a single unit. In addition, the focus of this study was not on a single activity or event, but rather multiple actions and processes.

Fourth, phenomenology involves the exploration of, and description of, people's lived experiences with a specific concept or phenomena (Schram, 2006). The construction of meaning occurs through the processes of dialogue and reflection (Schram, 2006). A phenomenological approach would have been appropriate if this study was interested in the entire lived experience of being a CN. However, this study specifically sought to explore actions and processes CNs implement to keep patients safe.

Grounded Theory Design

Schram (2006) and Strauss and Corbin (1990, 1998) suggested grounded theory is appropriate for investigating context specific actions and processes. In addition, grounded theory is appropriate when theory development is the goal of inquiry and when there is little existing knowledge on a topic (Glaser & Strauss, 1967; Strauss & Corbin, 1990, 1998). Nunn (2008) as well as Dickson and Flynn (2012) used grounded theory to allow for broad interpretation of phenomena resulting in theory development for their studies. Theory development was also the aim of this study.

Schram (2006) further suggested that an assumption of grounded theory is that meaning is socially constructed and that grounded theory is an appropriate design for the study of social situations. This study focused on medical-surgical nursing units where CNs constantly interacted with staff, patients, and families. Medical-surgical nursing units in this study were, therefore, social environments.

The goal of this study was to articulate specific actions and processes CNs implement to keep patients safe and generate a substantive theory. A substantive theory has practical implications. A substantive theory can inform CN job descriptions, serve as the basis for CN orientation and training, and empower CNs to promote patient safety in

practice, consistent with a grounded theory design. A grounded theory design was the most appropriate design to answer the research questions (RQs): RQ #1: What actions and processes do CNs on medical-surgical nursing units implement to keep patients safe? RQ #2: What substantive theory might emerge from the data collected during interviews and observations with CNs?

Research Ethics

Protecting the rights of human participants is an essential component of any research design. Content obtained from an online course through the Collaborative Institutional Training Initiative (CITI, n. d.) on ethical issues when conducting research with human subjects guided this study. Additional guidance on ethical requirements came from *Title 45 Part 46 of the Code of Federal Regulations* (United States Department of Health and Human Services, 2009). In this study, protection of participants' rights occurred through Institutional Review Board (IRB) approvals, obtaining informed consent, examining potential risks and benefits, and maintaining confidentiality.

IRB approvals. According to Marczyk et al. (2005), IRBs protect research participants' rights and have the authority to approve, require changes to, or disapprove, proposals for research involving human subjects prior to any data collection. The researcher obtained IRB approval from the organization where she collected data (Appendix B) and from the University of Phoenix (Appendix C).

Informed consent. According to the United States Department of Health and Human Services (2009), informed consent for research with human subjects must contain specific information. The required information includes disclosing that the study

involves research, the purpose of the research, a description of participation requirements, possible risks or benefits, handling of confidential information, contact information if participants have questions, voluntary participation without repercussions for non-participation, and, freedom to withdraw from the study at any time. The researcher incorporated these required elements into the introductory letter, introductory letter email script, and telephone scripts for potential participants as well as in the letters of informed consent. (See Appendices D, E, F, G, & H.)

There were two informed consents since both the organization where data collection occurred as well as the University of Phoenix required the use of the respective organizations' informed consent templates. Refer to Appendix G for the organization's informed consent form and Appendix H for the University of Phoenix informed consent form. Participants completed both forms prior to the start of each initial interview.

Houghton, Casey, Shaw, and Murphy (2010) discussed how with emergent qualitative designs, the researcher is not able to predict or specify with certainty how data collection will unfold. Therefore, Houghton et al. recommended that informed consent be an ongoing part of the qualitative research process. To follow this recommendation, one or two times during the interviews and observations, the researcher asked participants if they were comfortable proceeding. The researcher provided participants the opportunity to review interview transcripts and observation notes once data collection was complete.

Risks and benefits. This study involved minimal risk to participants. Participants were informed, both in writing as part of the informed consents, as well as verbally, that they could withdraw from the study at any time without penalty.

Participants received notice both in writing and verbally there may be no direct benefit to participating in the study. However, participants were informed their participation may help to increase the knowledge base of the CN role and patient safety by articulating the actions and process CNs implement to keep patients safe. Participation may help to inform CN job descriptions, serve as the basis for CN orientation and training, and empower CNs to promote patient safety in practice. (See Appendices D, E, & F.) The researcher offered CN study participants and pilot interview participants a $15 Starbucks gift card at the completion of the initial interview. The purpose of the gift card was to provide a small token of appreciation and to acknowledge participants' time.

Confidentiality. According to Marczyk et al. (2005), confidentiality refers to participants' rights to control access to their personal information. Since it may have been possible to identify a participant by a pseudonym, codes identified each participant for transcription, data analysis, and presentation of findings to protect participants' confidentiality. For example, in McSwain's (2011) study involving CN participants, she coded each participant the letter P followed by a number (P - 01, P - 02, etc.), a strategy utilized in this study. The researcher coded the pilot participants P1 and P2 and coded the study participants CN1, CN2, etc.).

Data was stored in a password-protected computer and hard drive. Data on paper was stored in a locked file cabinet only the researcher can access. Letters of informed consent with participants' names and signatures were stored in a separate locked file cabinet. Data destruction will occur three years after research completion by confidential shredding of any paper documents along with deleting all study-related electronic data from the researcher's computer and hard drive. Participants did not have to provide

study-related information through email. However, some participants chose to receive a copy of their transcribed interviews, observation notes, and data interpretations by email through a password-protected document.

Site, Sample, and Sampling Procedures

The population of interest for this study consisted of CNs on six medical-surgical nursing units. Data collection occurred at one acute care hospital within a large health care system located in a western state that had an established CN role. Since the CN role varies across units and departments in acute care, purposive sampling of CNs on medical-surgical nursing units helped promote consistency. Therefore, exclusion criteria included nurses who do not assume the CN role and CNs who worked in specialty areas such as the emergency department, labor and delivery, or intensive care. Data saturation occurred with a sample size of eight CNs**.** Six observations occurred on three shifts: day (n = 2), evening (n = 3), and night (n = 1). Once data saturation was attained, the researcher conducted three additional interviews to validate saturation for a total sample size of 11 CNs. The total sample consisted of CNs from each of the three shifts: day (n = 3), evening (n = 5), and night (n = 3).

The hospital setting was the appropriate site for data collection given qualitative research is naturalistic. This means the study of phenomena occurs in natural settings, allowing researchers to understand topics in all their complexity (Bogdan & Biklen, 2007). To assist in gaining entry to conduct research at the selected hospital, the researcher contacted the Nurse Scientist for the region and a research liaison, explained the topic and purpose of this study, and arranged a meeting. Krathwohl and Smith (2005) recommended researchers obtain letters granting approval to conduct their studies at

particular facilities prior to submitting their proposals, a strategy applied to this study. The researcher obtained written permission from the Chief Nurse Executive and the organization's Nursing Research Committee prior to beginning participant recruitment and data collection**.**

Once obtaining appropriate IRB approvals, the researcher recruited the study sample. The researcher received support from the Chief Nurse Executive to present an overview of the study at a nursing unit managers' meeting. At this meeting, the researcher asked nursing unit managers for permission to explain the study at CN or staff meetings and distribute her introductory letter (see Appendix D). In addition to CN or staff meetings, the researcher requested permission to attend at least one change of shift nursing unit staff huddle on each medical-surgical unit to briefly explain the study and distribute the introductory letter to potential participants. The researcher also provided potential participants the option of receiving the introductory letter via email by providing the researcher a preferred email address (see Appendix E).

An additional recruitment strategy involved posting flyers on medical-surgical units in staff break rooms (see Appendix I). This recruitment strategy required the permission of the nursing unit managers. Eggenberger (2011) posted eye-catching flyers around four hospitals to recruit participants for the study exploring the lived experiences of CNs in acute care. The flyer had the caption "Wanted! Charge Nurses!" (Eggenberger, 2011, p. 133).

Due to the low number of participants yielded through these initial strategies, the researcher added snowball sampling, which proved to be an effective strategy for acquiring additional participants. Sadler, Lee, Lim, and Fullerton (2010) explained that

snowball sampling is an effective sampling strategy for difficult to reach populations. Snowball sampling is a form of purposive sampling whereby study participants refer the researcher to other potential participants who have the characteristics necessary for the study sample (Sadler et al., 2010). In this study, pilot participants and study participants were asked to identify one or two CNs who they thought may be interested in participating in the study. Sadler et al. identified disadvantages of snowball sampling including a potentially biased sample since participants may refer like-minded participants as well as the potential for disclosure of personal information (Sadler et al., 2010).

Bogdan and Biklen (2007) suggested qualitative researchers generally use purposive sampling, with study participants selected based on their knowledge of, or experience with, the phenomena of interest. In addition, Strauss and Corbin (1990) discussed purposive sampling as one sampling technique appropriate for grounded theory designs. For this reason, this study involved purposefully selecting CNs employed on a regular basis to participate, given the aim of identifying actions and processes CNs implement to keep patients safe. Exclusion criteria included nurses who did not assume the CN role or those who worked in units other than medical-surgical.

Purposive sampling and a sample size of 10-20 participants is normally sufficient for a grounded theory study (Mauk, 2009; White, 2009). Another form of purposive sampling the researcher incorporated was theoretical sampling, where researchers select participants and data collection techniques to support theory development based on the findings that emerge throughout the study (Strauss & Corbin, 1998). For example, the

researcher used theoretical sampling to ensure she had more than one night shift participant, since the first night shift participant noted challenges unique to this shift.

Mason (2010) conducted a literature search on sample size in qualitative studies. Out of 174 grounded theory studies that met inclusion criteria, the range of the number of study participants was from a low of four to a high of 87. The mean number of participants was 32, the median 30, and the mode 25. Mason suggested sample sizes in qualitative studies should be large enough to identify important perceptions on the phenomena of interest. However, the sample sizes should not be so large that data becomes repetitive and data analysis impractical. In addition, Strauss and Corbin (1998) indicated people on different shifts tend to do different work, or approach their work in various ways. Therefore, it was important to include CNs from each of the following shifts: day, evening, and night to obtain multiple perspectives.

With the exception of the pilot participants who worked on the same unit as the researcher, study participants worked on different units than the researcher. In addition, the researcher was not a supervisor or manager of potential participants. Therefore, the researcher was not in a position to place undue pressure for participation. As a fellow CN, the researcher was in a comparable position to study participants.

Demographic information collected from participants at the beginning of each interview identified characteristics of the sample. The specific demographic information included the following: gender, age range, educational preparation, years as a CN, years as a registered nurse, years on their current unit, type of unit, number of beds on the unit, and shift worked. Refer to Appendix J for a full listing of demographic questions.

Data Collection Procedures

Denzin and Lincoln (2008) suggested qualitative research generally involves the collection of data from more than one source. Glaser and Strauss (1967) also supported obtaining data from various sources to assist in obtaining multiple perspectives. Although triangulation has multiple meanings, Bodgan and Biklen (2007) discussed one meaning of triangulation as the collection of data from a variety of sources. According to Guba and Lincoln (1981), triangulation assists in enhancing the credibility of research findings. For this reason, this study involved interviews with CNs, observations of CNs in their practice environments, and optional follow-up interviews with CNs where the researcher provided participants with analyzed data and interpretations and provided an opportunity for any additional feedback from participants or dialogue about the study, the CN role, or patient safety.

Interviews. Soklaridis (2009) suggested the goal of qualitative interviews is to understand the experiences of research participants and obtain detailed data on the phenomenon of interest. Shank (2006) recommended face-to-face interviews be conducted whenever possible, a strategy appropriate for this study. Shank explained how there are three main types of interviews: structured, unstructured, and semi-structured.

Structured interviews are less common than semi-structured or unstructured interviews due to the emergent nature of qualitative designs (Shank, 2006). Guba and Lincoln (1981) explained how highly structured interviews may resemble a verbal questionnaire since the same questions are asked in the same way with each participant. Guided by participants, unstructured interviews are the most flexible and can provide in-depth information in the participants' own words (Guba & Lincoln, 1981; Shank, 2006).

However, of the three types, unstructured interviews require the most skill of the interviewer (Shank, 2006). In addition, this study was concerned with specific actions and processes CNs take to keep patients safe. It could have been more difficult to obtain information on specific actions and processes with unstructured interviews than with semi-structured interviews.

In semi-structured interviews, the researcher has the flexibility of determining the order of questions and can allow interviews to unfold somewhat naturally, while still ensuring coverage of necessary content (Shank, 2006). Therefore, this study used a semi-structured approach to allow flexibility in interviews, a strategy used by Soklaridis (2009) in her grounded theory study. Shank recommended beginning each interview with one key question that is consistent throughout all interviews. Depending on how the interviews unfold, the other questions can serve as a guide, outlining information the researcher would like to obtain before the end of the interviews (Shank, 2006). Soklaridis also discussed how she closed each semi-structured interview by asking participants if there were any other pertinent issues they felt were important to discuss, a strategy applied to this study.

Each interview lasted approximately thirty minutes. Consistent with a grounded theory design, the interview questions were preliminary and additional questions were asked if required or initial questions modified depending upon the emerging data (Strauss & Corbin, 1990, 1998). For example, if a participant identified fall prevention as a patient safety concern, the researcher would ask the participant to identify things the CN does to help prevent patient falls. Similarly, if the participant identified the assignment of personnel to patients as being important to patient safety, the researcher asked

participants to elaborate on the process of making patient assignments. Some participants required more prompts to stimulate discussion, whereas some interviews flowed effortlessly and required very few questions and prompts. The following questions were included in some of the subsequent interviews: Are there any specific patient safety initiatives that the CN takes a leadership role in? What are some challenges associated with the CN role and patient safety?

As discussed by Strauss and Corbin (1998), questions start out open-ended and become more focused and specific as data collection progresses. Therefore, as data collection progresses, the intent behind questions is eliciting detailed information on the concepts emerging in the study (Strauss & Corbin, 1998). Jacob and Furgerson (2012) suggested the phrase "*tell me about…*" is an inviting and open-ended way to obtain information, a phrase utilized by this researcher. The researcher also kept a journal documenting the context of the interviews, including, but not limited to, non-verbal behaviors.

It is important that questions and prompts posed to participants align with the research questions. Table 2 lists the research questions, the corresponding semi-structured interview prompts, and the relationship between the research questions and the interview prompts.

Table 2

Interview Prompts

Research Questions (RQs)	Interview Prompts	Relationship between the RQs and Interview Prompts
RQ #1: What actions and processes do CNs on medical-surgical nursing units implement to keep patients safe?	Please tell me what you do as a CN to keep patients on your unit safe.	This prompt directly inquired about specific actions and processes needed to address the research questions.
RQ#2: What substantive theory might emerge from the data collected during interviews and observations with CNs?		This prompt also helped the researcher link the actions CNs take, and, the processes they engage in, to patient safety, necessary to build the substantive theory.
	Please tell me about a specific situation where you recently took action to keep a patient safe.	This prompt helped the researcher link the actions CNs take, and the processes they engage in, to patient safety by the identification of specific examples.
	Please discuss any additional issues or important information related to the CN role and patient safety not yet covered in our interview.	This prompt provided additional rationale for the actions and processes CNs implement to keep patients safe and provided participants the opportunity to engage in open dialogue about the CN role and patient safety.

With participants' consent, interviews were audio recorded using a Sony ™ digital recording device. The researcher used a password-secured iPhone ™ as a back-up recording method. The researcher erased each iPhone ™ recording once the digital recording was backed-up and secured on a password-protected computer. To maintain

confidentiality, the researcher transcribed the recordings verbatim and only she had access to the recordings.

Observations. Conducting observations assisted the researcher in obtaining additional data on the actions and processes CNs implement to keep patients safe. The researcher observed (n = 6) CNs willing to participate following the interviews, or at another date and time mutually agreed upon, during a shift. Data saturation with observations was attained after six observations which included day, evening, and night shifts. The observations took place on six different medical-surgical nursing units consistent with the study context and main research question. Given this study's focus was on actions and processes CNs implement to keep patients safe, the focus of the observations was on CNs' actions and processes as expressed in the interviews.

Mulhall (2003) suggested that observations provide a means for researchers to assess whether participants' actions are consistent with what they report they do. As discussed in the literature review, Lewis (1990) indicated that conducting observations in his grounded theory study would have strengthened his findings by providing support for CNs' reported actions. The main purpose of observations as a follow up to individual interviews in this study was for data triangulation. Data triangulation helped to determine congruence with CNs' reported actions and the actions they take in practice to ensure patient safety, thereby contributing to rigor and credibility of study findings.

Observations offer the additional benefit of providing valuable data on the physical environment where nursing work occurs, a perspective not often captured in nursing research (Mulhall, 2003). Since only six observations were needed to reach

theoretical saturation, the linking of observational data was considered in aggregate form, not linked to any specific interview participant's responses.

The time spent on each observation and the total number of observations conducted was dependent upon the data that emerged and achieving theoretical saturation. Theoretical saturation was obtained following six observations, each lasting approximately two hours, totaling approximately 12 hours of observation time. According to Glaser and Strauss (1967) and Strauss and Corbin (1998), theoretical saturation is accomplished when no original concepts or information is obtained.

Given CNs work directly with hospital staff, patients, and families, administrative approval was necessary (Shank, 2006) in addition to IRB approvals prior to conducting observations on medical-surgical nursing units. The researcher communicated with nursing unit managers via email to confirm dates and times for observations and received their approval prior to conducting observations. As discussed by Mulhall (2003), informed consent can be challenging with observations, as the researcher does not have control over who may be present during observations. Houghton et al. (2010) discussed challenges for researchers conducting observations in clinical settings. Contradictory information was present in the literature regarding the appropriateness of obtaining written, verbal, or no consent at all from patients present during observations (Houghton et al., 2010).

Houghton et al. (2010) recommended placing posters in visible locations and communicating with unit managers regarding times observers will be present on the units, a strategy adopted by this researcher. A copy of the poster for the nursing units is in Appendix K. When observing students interacting with patients, Houghton et al.

initially obtained written informed consent from patients. However, obtaining written consent made many patients anxious since they were unsure why they had to provide written consent for something as minor as having an observer present while a student was providing care. Consistent with the principles of beneficence, in subsequent observations, the researchers only obtained verbal consent from patients and did not observe critically ill and cognitively impaired patients (Houghton et al., 2010).

Given the complexity of obtaining informed consent when observing direct patient care, this researcher did not enter patient rooms during observations or access any protected health information. Instead, the researcher conducted observations from the nurses' stations and unit hallways. Shank (2006) also discussed the need to consider the impact the researcher has when observing. This was an important consideration for this study given the researcher is a nurse. The researcher only assumed the role of observer/researcher and did not engage in nursing functions during her observations.

Follow up interviews. Since the researcher was able to clarify actions and processes observed during each observation, formal follow up interviews were not necessary. Bogdan and Biklen (2007) suggested that researchers are often able to engage in informal interviewing during observations. For example, during the observations, the researcher asked participants to describe, expand upon, or clarify their actions related to the CN role in patient safety. Therefore, the researcher used the optional follow up interviews as opportunities to share the data analysis and interpretations with interested participants, receive feedback on the data analysis and interpretations, and to allow for any closing questions participants had. These interactions were informal and lasted less than 15 minutes. Some participants chose to receive a copy of their transcribed

interviews, observation notes, and data interpretations by email through a password-protected document, taking the place of a face-to-face follow up.

Instrumentation

According to Krathwohl and Smith (2005) and Roberts (2010), instrumentation refers to the specific tools used for data collection. The tools should align with the nature of the study and type of data desired (Krathwohl & Smith, 2005; Roberts, 2010). For this study, instruments included interview guides and an observation protocol. In qualitative studies, the researcher is the main research instrument, actively involved in all stages of the research process (Guba & Lincoln, 2008). The use of interview guides and an observation protocol assisted in achieving objectivity and consistency on the part of the researcher.

Interview guide. Jacob and Furgerson (2012) implied an interview guide is particularly important for a new qualitative researcher. In addition to providing an outline of the interview questions, the guide also prompts the researcher through the logistics of conducting an interview. These prompts include obtaining informed consent, verifying permission to record the interview and checking the recording devices, along with key points to discuss before and after the interview (Jacob & Furgerson, 2012). See Appendix L for the interview guide.

Pilot interviews. Krathwohl and Smith (2005) and Roberts (2010) recommended pilot testing data collection instruments. The purpose of the pilot interviews in this study was to test the interview questions. For this study, two CNs not participating in the study participated in the pilot to test the interview questions, interview protocol, and the researcher's interview techniques. The researcher personally invited two known CNs to

participate in the pilot and provide feedback. Specifically, the pilot interviews elicited feedback on the clarity of the questions and assessed for irrelevant questions. In addition, the pilot interviews assessed how well the participants' answers revealed the type of information necessary to answer the research questions (Roberts, 2010). Obtained feedback helped identify necessary changes to the interview questions to improve clarity and to optimize data collection consistent with the study goal. Practicing obtaining informed consent and receiving feedback on interviewing techniques were additional goals of the pilot interviews. Pilot interviews required permission from the IRBs from the organization where the research occurred and the University of Phoenix.

Observation protocol. Mulhall (2003) discussed multiple approaches to recording observations, often referred to as field notes. The researcher took brief notes during each observation and supplemented these notes once she completed the observation as described by Mulhall. To assist in documenting the observations, the researcher utilized an observation protocol focused on observed actions and processes of CNs related to patient safety (See Appendix M). In addition, Shank (2006) discussed how observation notes should focus on observed actions and contextual factors, a strategy appropriate for this study. The researcher took descriptive notes on the CNs' actions, processes, behaviors, and interactions. She also documented contextual factors pertinent to the actions, processes, behaviors, and interactions, such as members of the multidisciplinary health care team in which the CN interacted. The researcher also documented reflections, reactions, learning, and additional questions that arose to clarify with the CNs during the observation.

Data Analysis and Interpretation

In grounded theory, data analysis occurs concurrently with data collection in a process called constant comparison (Glaser & Strauss, 1967). While performing constant comparison, the researcher asked questions about the data and made theoretical comparisons among the various categories and the categories' properties (Glaser & Strauss, 1967; Strauss & Corbin, 1998). Asking questions and making theoretical comparisons occurred throughout data collection and analysis. Key questions asked about the data included the following:

1) What is important?
2) Who is involved and what are their roles?
3) What is the purpose or intention?
4) When and where did the action, process, or event occur?
5) How was this action or process accomplished? (Liamputtong, 2009)

For this study, applicable data analysis techniques included microanalysis, open coding, axial coding, and selective coding (Strauss & Corbin, 1998).

First, data analysis involved line-by-line analysis of interview transcripts and observation notes to identify initial categories, a process called microanalysis (Strauss & Corbin, 1998). The researcher read and re-read interview transcripts to become familiar with the content and highlighted important words and phrases. Second, data analysis involved open coding, consisting of the identification of concepts and their characteristics. Codes provided a means to label pieces of data for meaningful interpretation (Liamputtong, 2009). The researcher compiled highlighted words and phrases, noted similarities, identified concepts, and analyzed common characteristics of

these concepts. The phase of open coding was significant since concepts build the emerging theory (Strauss & Corbin, 1990, 1998).

Following open coding was axial coding, the third step, where the researcher related categories and subcategories to formulate more in-depth explanations of her findings (Strauss & Corbin, 1990, 1998). Finally, selective coding involved the grouping of categories, filling in missing details, articulating statements of relationships between categories, and presenting the developed theory (Strauss & Corbin, 1990, 1998).

Webb (1999) recommended novice researchers, such as PhD students, use manual coding, particularly for small-scale studies with less than 30 participants. Manual coding offers the benefit of helping researchers acquire valuable experience with qualitative data analysis and helps researchers become very familiar, and comfortable, with their data (Liamputtong, 2009; Webb, 1999). However, according to Bergin (2011), data analysis software can assist researchers in making sense of large volumes of qualitative data while enhancing the consistency of data analysis procedures.

This researcher used both manual coding as well as the software, NVivo 10 ™, for data organization and analysis. NVivo 10 ™ is a program that assists researchers in organizing and analyzing unstructured data, such as data from interviews, to help justify study results (QSR International, 2012). Engaging in both manual and software-assisted data organization and analysis helped the researcher engage in constant comparison, provided a means to triangulate data analysis procedures, and ensured identification of key concepts and categories.

As discussed by Strauss and Corbin (1998), researchers using grounded theory do not just summarize data; they also interpret the data by explaining relationships between

identified concepts. The researcher used Strauss and Corbin's recommendation of sharing interpretations with participants to verify accuracy. In addition to offering participants the opportunity to review the transcribed interviews and observation notes, the researcher also invited participants to review her analyses and interpretations. The sharing of this data and analyses occurred through a mutually-agreed upon meeting time and place or via email through a password-protected file.

In addition, memo writing was a strategy to assist data interpretation utilized in this study. Glaser and Strauss (1967) and Strauss and Corbin (1998) suggested memo writing provides researchers with an ongoing record of their analyses and interpretations, helping them to integrate findings as they develop a theory grounded in data. The researcher also maintained a reflective journal throughout the data collection and analysis processes to serve as an audit trial for decisions made.

Presentation of Findings

The specific type of proposed theory applicable to this study was substantive (Glaser & Strauss, 1967), as it has practical applications and relevance in a specific context: medical-surgical nursing units. According to Glaser and Strauss, one way to present findings from a grounded theory study is by a theoretical discussion consisting of conceptual categories and their properties identified in the data. Presentation of this study's findings and developed substantive theory was in narrative form, incorporating direct words and phrases from participants, referred to by Glaser and Strauss as in vivo. Strauss and Corbin (1998) also discussed the narrative, or story-telling, approach for presenting grounded theory findings. In addition to the narrative approach, Strauss and

Corbin explained the use of mini-frameworks and conceptual diagrams to present relationships between concepts.

Trustworthiness

Shenton (2004) recommended qualitative researchers have a plan to ensure the trustworthiness of their study findings. For the purposes of this study, trustworthiness involved maintaining rigor. Trustworthiness also involved acknowledging biases and assumptions.

Rigor in grounded theory. Guba and Lincoln (1981) discussed rigor as "trust in the outcomes of the inquiry" (p. 103). Given the assumptions underlying qualitative research are distinct from quantitative research, Beck (1993) and Guba and Lincoln articulated the need for distinct criteria to evaluate rigor in qualitative research instead of reliability and internal and external validity normally applied to quantitative studies. Guba and Lincoln suggested credibility, fittingness, auditability, and confirmability as naturalistic concepts to determine the rigor of qualitative research. Specific to qualitative nursing research, Beck suggested the concepts of credibility, fittingness, and auditability be applied to the evaluation of rigor. More specifically, Cooney (2011) applied the concepts of credibility, fittingness, and auditability to determine rigor in a grounded theory nursing study.

Instead of internal validity, credibility evaluates how accurately the researcher's description of observed phenomena and participants' responses match actual human experiences (Beck, 1993; Guba & Lincoln, 1981). To achieve credibility, the researcher kept detailed field notes throughout the research process and provided participants with findings for validation, a process referred to by Guba and Lincoln as 'member checks' (p. 110). Instead of external validity, fittingness refers to how well propositions or

hypotheses generated from data have applicability to particular settings and contexts (Beck, 1993; Guba & Lincoln, 1981). To strive for fittingness, the researcher examined how well the study findings were congruent with data collected as discussed by Beck.

Guba and Lincoln (1981) suggested research findings involving human phenomena are always context dependent. Therefore, this study's findings are most likely applicable to the context of medical-surgical units that have an established CN role. Instead of reliability, the term auditability evaluates how well another researcher can follow decisions made during data analysis through an audit trail (Beck, 1993; Guba & Lincoln, 1981). Recording interviews with participants' permission, keeping detailed field notes during observations, and thoroughly discussing all data collection and analysis procedures as suggested by Beck were strategies utilized to achieve auditability. An additional strategy to achieve auditability involved keeping a reflective journal throughout data collection and analysis processes.

Biases and assumptions. In qualitative research, the researcher is a research instrument, often an active participant in all stages of the research process (Denzin & Lincoln, 2008). Burns (1989) discussed the importance of acknowledging biases and assumptions the researcher brings to the qualitative study. For example, the researcher assumed a qualitative method was consistent with seeking to understand the actions and processes CNs implement to keep patients safe. In addition, the researcher assumed study participants responded to interview questions honestly and openly and did not change their usual actions or behaviors while observed.

One strategy to acknowledge biases and assumptions utilized for this study was reflexivity. According to Dowling (2006), reflexivity is an important aspect of

qualitative inquiry. Reflexivity is the process where researchers acknowledge how various roles, experiences, and perceptions have influenced all aspects of the research process. A common strategy to incorporate reflexivity in the research process is journal writing (Koch & Harrington, 1998), a strategy utilized for this study.

Eggenberger (2011) kept a journal and utilized reflexivity in her study exploring the experience of being a CN in acute care by explaining how her role as a nursing supervisor likely contributed to holding preconceived ideas about the CN role. Eggenberger openly discussed how her current and previous roles and experiences may have influenced her research. Similar to Eggenberger, as a CN in acute care, it was important for this researcher to openly discuss how being a CN influenced her research.

Chapter Summary

Chapter 3 provided justification for the appropriateness of a qualitative, grounded theory design to explore actions and processes CNs implement to keep patients safe. This chapter addressed ethical considerations and alignment of the study's method and design with the site, sample, sampling procedures, and data collection procedures, and outlined how the research questions related to the interview prompts. Next, this chapter included a discussion of data collection instruments, along with techniques utilized for data analyses, interpretation, and presentation of findings. Chapter 3 concluded with a discussion on trustworthiness, including the maintenance of rigor and acknowledgment of biases and assumptions. This study sought to explore the complex phenomena of actions and processes CNs implement, within the context of the setting where they occur. Given the aim of this study, a qualitative, grounded theory approach was an appropriate methodology and design for exploring the actions and processes CNs implement to keep

patients safe. Purposive sampling, the use of both interviews and observations for data collection, and constant comparison during data analysis also aligned with this qualitative, grounded theory approach. Chapter 4 presents the findings from the interviews and observations.

Chapter 4

Presentation of Findings

The purpose of this qualitative, grounded theory study was to explore actions and processes charge nurses (CNs) implement to keep patients safe. The study sample consisted of 11 CNs working on medical-surgical units at one acute care hospital within a large health system in a western state. The sample included CNs from day, evening, and night shifts. Recruitment of participants involved purposive sampling, incorporating both theoretical and snowball sampling. Data collection consisted of semi-structured interviews with 11 CNs and observations with six CNs. Data collection began in October 2014 and ended in January 2015. Data analysis involved microanalysis, open coding, axial coding, and selective coding and consisted of both manual and software-assisted (NVivo ™) analysis.

Chapter 4 consists of a detailed analysis of the actions and processes CNs implement to keep patients safe based on the data collected during interviews and observations. Specifically, Chapter 4 includes findings from the pilot interviews, recruitment procedures, a review of the data collection process and characteristics of the sample, a discussion on the data analysis process, as well as findings from the interviews and the observations. The discussion of the interview and observation findings includes the identification of categories, subcategories, and numerous properties, using examples from participants' words and actions. This chapter concludes with the identification of the core category, or central phenomenon, which emerged from the findings.

Pilot Study

Since the purpose of the pilot interviews was for the researcher to test the interview questions to gain feedback and to practice interview techniques, the data obtained from the pilot interviews was not included in the analysis for the purposes of this study. Pilot interviews with two of the researcher's CN colleagues elicited feedback regarding the interview guide and allowed the researcher an opportunity to practice interviewing and obtaining informed consent. The pilot protocol included obtaining informed consents (Appendices E & F), a brief demographic questionnaire (Appendix H), and a semi-structured interview implementing the interview guide (Appendix J). At the completion of the interview, the researcher provided participants with a $15 Starbucks gift card to acknowledge participants' time and as a token of appreciation. Table 3 provides a summary of the pilot participants' demographics including the number of beds on the unit, shift worked, gender, age range, years of experiences as a CN, years of experiences as a registered nurse (RN), years worked on the current unit, and highest level of education.

Table 3

Pilot Participant Demographics

Participant Number Number of Beds On Unit	Shift	Gender	Age Range	Years as a CN	Years as a RN	Years on Current Unit	Highest Level of Education
P1 24	Night 8 hour	F	Over 60	15	28	9	ADN
P2 24	Evening 8 hour	F	51-60	25	27	15	BSN

RN = Registered Nurse; ADN = Associates Degree in Nursing; BSN = Bachelor of Science in Nursing

The researcher obtained specific feedback regarding the interview questions following the pilot interviews. The first interview prompt, *please tell me what you do as a CN to keep patients on your unit safe,* provided an open-ended way to begin the interview. The researcher determined that adding questions pertaining to specific actions and processes was not necessary as participants identified actions and processes following the first prompt. Furthermore, questions pertaining to how and why these actions and processes are necessary to keep patients safe were generally answered following the first prompt, so they were not formally asked in subsequent interviews. The prompt, *please tell me about a specific situation where you recently took action to keep a patient safe*, was also an effective prompt that yielded significant information on specific actions and processes CNs implement to keep patients safe. *Please discuss any additional issues or important information related to the CN role and patient safety not yet covered in our interview* provided an opportunity for open dialogue and closing thoughts on the CN role and patient safety. Based on the feedback from the pilot interviews, the interview guide for subsequent interviews included three prompts as follows: *Please tell me what you do as a CN to keep patients on your unit safe. Please tell me about a specific situation where you recently took action to keep a patient safe. Please discuss any additional issues or important information related to the CN role and patient safety not yet covered in our interview.*

The pilot interviews helped determine that the interview questions and prompts may vary depending upon how the interview unfolds. For example, if a participant identified fall prevention as a patient safety concern, the follow up prompt would ask the participant to identify things the CN does to help prevent patient falls. The researcher

transcribed the pilot interviews and also practiced data analysis, although the data obtained from the pilot interviews were not included in the dataset for the study findings. Practicing transcription and analysis provided an opportunity to develop a comfort level with these processes and also helped develop sensitivity for identifying significant themes when conducting analysis of the study data.

Recruitment Procedures

The main recruitment procedures used in this study included posting flyers in the break rooms on medical-surgical units, providing an overview of the study at two hospital-wide CN meetings, two unit level staff meetings, and five nursing unit huddles. Huddles are very brief meetings conducted at the nurses' station on a unit covering important information relevant for a given shift. Due to the low number of participants yielded through these initial strategies, the researcher implemented snowball sampling, which proved to be an effective strategy for acquiring additional participants.

Data Collection Process and Characteristics of the Sample

Once IRB approvals were obtained from the organization where the research was conducted (Appendix B) and the University of Phoenix (Appendix C), data collection occurred following the process outlined in Chapter 3.

1. Initial interviews with 11 medical-surgical CNs lasted approximately 30 minutes each. The interviews were conducted at a time and location chosen by the participant within the hospital. The interview protocol included obtaining informed consents (Appendices G & H), a brief demographic questionnaire used to describe the sample (Appendix J), and a semi-structured interview implementing the interview guide (Appendix L). The researcher asked

participants if they would be willing to participate in an observation on the unit. At the completion of the interview, the researcher provided participants with a $15 Starbucks gift card to acknowledge participants' time and as a token of appreciation.

2. Optional observations with six medical-surgical CNs lasted approximately two hours per observation. The observations occurred on the medical-surgical inpatient nursing units while the participant worked as a CN, guided by an observation protocol (Appendix M).
3. The researcher provided participants with transcripts and analysis of their individual interview or observation, if appropriate, as an opportunity for the participant to clarify or add any additional information.

Table 4 summarizes characteristics of the study sample.

Table 4

Participant Demographics

Number of Beds on the Unit	Shift	Gender	Age Range	Years as a CN	Years as a RN	Years on Current Unit	Highest Level of Education
24 Beds *n* = 5	Day *n* = 3	M *n* = 2	31-40 *n* = 2	Range 2-16	Range 9-38	Range 1-36	BSN *n* = 10
26 Beds *n* = 3	Evening *n* = 6	F *n* = 9	41-50 *n* = 6	Mean 7.7	Mean 20	Mean 10.7	MSN *n* = 1
34 Bed *n* = 2	Night *n* = 2		51-60 *n* = 2				
36 Beds *n* = 1			60 or above *n* = 2				

RN = Registered Nurse; BSN = Bachelor of Science in Nursing; MSN = Master of Science in Nursing

Nine participants were female and two were male. Having both male and female participants may have provided more diverse perspectives than just having a sample with one gender. The median and mode age range was 41-50. The age range of participants was 31-40 to over 60, with no participants under the age of 30, which may be because CNs generally are experienced nurses. The CNs in this sample were all experienced RNs as well as experienced CNs. The mean numbers of years participants had been CNs was 7.7 years, with a range of two to 16 years. The mean number of years participants had been RNs was 20 years with a range of nine to 38 years. Participants had worked on their current units between one and 36 years, with a mean of 10.7 years. The number of beds on the units ranged from 24 to 36. Since all study participants had a bachelor's degree, and one had a master's degree, the participants may have leadership knowledge or a broad theoretical knowledge base obtained through a baccalaureate or higher education.

Data Analysis Process

Data analysis involved both manual coding and software assisted (NVivo 10 ™) coding. Consistent with a grounded theory design, simultaneous data collection and data analysis occurred. The researcher transcribed the interview data as the first step of being grounded in the data. Transcription of the interviews and review of the observation protocol notes began as soon after the data collection as possible. The process of constant comparison occurred after each subsequent interview or observation, involving comparing and contrasting findings from the current analysis with previous findings. Consistent with principles of theoretical sampling, additional interviews and observations occurred until achieving theoretical saturation and no new data categories or subcategories emerged.

Data analysis consisted of four main steps: Microanalysis, open coding, axial coding, and selective coding. The initial processes of data analysis consisting of microanalysis and open coding helped answer the first research question: RQ #1: What actions and processes do CNs on medical-surgical nursing units implement to keep patients safe? Axial coding and selective coding helped answer the second research question: RQ #2: What substantive theory might emerge from the data collected during interviews and observations with CNs?

Microanalysis. Microanalysis involved line-by-line analysis of interview transcripts and observation notes. Microanalysis involved highlighting key words or phrases relating to specific actions and processes CNs implement to keep patients safe. Highlighting of key words or phrases facilitated the initial identification of nodes in NVivo ™. The identification of nodes and utilization of NVivo ™ helped organize the data from the interviews and observations. This line-by-line analysis facilitated the second phase of data analysis of open coding.

Open coding. After review of all interview transcripts and observation notes and highlighting key words and phrases, the next step of analysis asked who, what, where, why, and how questions about these key words and phrases to identify categories and subcategories. This questioning is part of constant comparison, a process involving continually comparing data being analyzed with all other data to identify commonalities and differences. Open coding, therefore, helped establish who was involved with the CNs' actions and processes, actually what was taking place, where the actions and processes took place, why the CNs were engaging in specific actions and processes, and how these actions and processes relate to patient safety.

Listening to the audio recordings of the interviews multiple times, reading and re-reading interview transcripts and observation notes, keeping a reflective journal, and maintaining a working document of data analysis memos assisted with open coding. The categories and subcategories identified in open coding helped build the emerging theory. Categories identified through open coding represented the main themes CNs identified as the actions and processes they implement to keep patients safe. Analyzing findings from the process of open coding facilitated the next step of data analysis needed to articulate the emerging theory: axial coding.

Axial coding. In axial coding, researchers articulate relationships between categories and subcategories to formulate more in-depth explanations of their findings. Axial coding yielded examples of relationships between categories and subcategories. The relationships identified in axial coding facilitated the identification of a core concept, or central phenomenon, in selective coding.

Selective coding. Selective coding involved the grouping of categories, filling in missing details, articulating statements of relationships between categories, and presenting the developed theory. The final stage of selective coding involved the identification of one core category, or central phenomena, around which the theory revolves. Since this study involved two separate sources of data, interviews and observations, the findings from the interviews and observations are discussed separately beginning with the interview data.

Interview Data Findings

The use of an interview guide with three interview prompts focused on the actions and processes CNs implement to keep patients safe provided the data to answer the first

research question. RQ #1: What actions and processes do CNs on medical-surgical nursing units implement to keep patients safe? The three interview prompts were as follows: *Please tell me what you do as a CN to keep patients on your unit safe. Please tell me about a specific situation where you recently took action to keep a patient safe. Please discuss any additional issues or important information related to the CN role and patient safety not yet covered in our interview.* There were three main categories identified from the interview data findings: balancing multiple roles, maintaining a watchful eye, and working with and leading the health care team.

Category # 1: Balancing multiple roles. To balance multiple role functions necessary to keep patients safe, eight CNs (CN1, CN2, CN3, CN4, CN5, CN8, CN9, and CN10) suggested that it was important for the CN to know the background on all the patients, the complexity level of each patient, and also to know the staff. Having this knowledge was essential for understanding complex clinical situations and making the best decisions based on the information available at a given time. CN10 suggested that it was essential for CNs to be informed if patients experience a significant change in condition so they can help ensure the patient is safe. CN10 provided the example of a physician calling her questioning why an important test was not carried out. CN10 stated: "I have to look/visualize the whole unit - it's not only for one patient, it's not only for one nurse. I have to see the whole unit - that everything is ok. I am the one answering for them**."** To assist with understanding complex clinical situations and to assist with her decision making, CN9 discussed rounding frequently with patients to remain up to date on their statuses.

To make decisions, CN4, CN5, and CN6 discussed needing to go beyond the information obtained from CN to CN report that occurs at the change of shift. CN4, CN5, and CN6 all explained how they also obtained necessary information by reading the chart, communicating with the nurses and other members of the team, as well as by directly assessing patients and having a hands on role in the provision of care. CN7 further expanded on the need to directly assess patients and be hands on:

> Sometimes report might be different from what you actually see physically when the patient is already on your unit and you actually see what is going on. So the first thing that I would probably do is just make my own assessment.

CN4 further supported this point by stating: "As a CN, I want to know the patient, not only by paper, I want to know: How does the patient look?"

Part of balancing multiple roles involved being prepared for the unexpected. CN1 and CN4 reported the need to anticipate what may happen next and be flexible when plans change. CN1 discussed: "You have always got to have Plan B. You always have to have - Yeah - what's the back up here?" Having a Plan B was particularly important when the unit was disorganized, understaffed, or when the unit had high acuity patients, factors identified by four CNs (CN1, CN4, CN5, CN8). These conditions are often outside the CNs' control and can impact patient safety.

CN1 discussed the situation on the unit the night prior to the interview: "Last night was one of the most disorganized nights I've ever had because there were brush fires every 10 minutes somewhere. Just things that we couldn't - we just couldn't control. And it was very, very disorganized." CN4 explained: "You need people to care for people. If you don't have the people - enough personnel, then things - they might get

done, but they might get done late, and that turns to a reduction in patient satisfaction and patient safety." CN5 further elaborated: "If we have full staff, the more the patients are going to be safe." CN11 discussed how having sufficient staffing for the needs of the patients is essential for patient safety: "The staffing…it is a very big challenge for our unit. We're not talking about a matrix here. We are not talking about six or seven nurses here. No. We are talking about the safety of our patients here."

Even with sufficient staffing, CN8 discussed how personnel resources can still be stretched: "There are days that even if we are staffed good on the floor there are days when nurses are swamped and busy." In these situations, CN6 discussed the use of prioritization and delegation skills to try to maintain the necessary flow to keep patients safe. In addition to always having a Plan B, CNs also engaged in numerous actions and processes as they balanced multiple roles to keep patients safe. These roles included performing direct interventions, being a resource, educator, and advocate, and making patient assignments.

Direct interventions. Among the direct interventions CNs engaged in included providing direct patient care identified by all CNs, assisting with admissions and/or discharges identified by six CNs (CN1, CN3, CN4, CN6, CN7, CN8), and actively intervening when changes in patients' conditions jeopardized their safety identified by eight CNs (CN1, CN2, CN3, CN4, CN5, CN6, CN7, CN9).

All CNs discussed the need to assist with patient care tasks and nursing skills that ranged from toileting patients to nasogastric tube insertions. For example, CN8 explained how "if the nurses are busy and patients are needing to go to the bathroom…I take them to the bathroom." CN5 and CN8 articulated that rapidly responding to

patients' toileting needs is essential to prevent them from getting up independently which poses a risk for falls. CNs were regarded as significant resource people who could assist nurses with whatever tasks arose. CN1 explained being known as the expert at nasogastric tube insertion. He described a specific situation where he was able to help a patient relax and successfully inserted the nasogastric tube after numerous failed attempts prior to the patient's arrival on the unit.

Assisting with admissions and discharges was a necessary part of the CN role essential to keep patients safe. CN8 discussed: "As a CN, I'm the one who receives the patient, settles them down, orients them to the unit, and just try to give them a hint of what's going on." CN4 and CN7 discussed how assisting with admissions allowed them to understand the acuity levels of the patients, their levels of complexity, and their anticipated needs, including immediate needs for interventions to keep them safe. To gather information about new admissions to their units, CNs reviewed the patients' charts (CN2, CN4, CN5), greeted the patients when they arrived on the unit (CN4, CN8, CN10), and assessed patients to better understand their needs (CN4, CN7, CN8).

CN4 discussed the process of "screening" new admissions to ensure they were appropriate for a medical-surgical level of care. In some situations, the level of care indicated in the patients' chart was not accurate, prompting the CN to contact the admitting provider to clarify the level of care prior to the patients' arrival on the unit. This "screening" process was particularly important to identify patients who required telemetry (cardiac) monitoring or frequent assessments or interventions that required a higher level of care, as discussed by CN4.

Directly intervening with confused or agitated patients was identified as an important direct intervention needed to keep patients safe. CN1 explained:

> We have discovered that my voice actually calms disturbed and confused patients and so many times I will go in and literally just talk. I also have the good fortune to have a background in psych - that's what my degree is in. So, I have a little more insight and comfort level dealing with dementia, and/or even psych patients.

CN4 provided the example of activating the rapid response team when a patient was in acute respiratory distress. Even though the patient's attending physician was not pleased with the decision to call the rapid response team, CN4 articulated:

> If the patient is in danger and has an airway condition and he is desating, he needs to be treated, regardless of "I don't want a lot of people in here" - that's secondary - it's not important. It's important to treat the patient.

Using skillful communication and making critical decisions to keep patients safe illustrates how CNs are valuable resources on their units.

Resource. All CNs noted being resources for nurses and other members of the multidisciplinary team. In addition, CNs discussed how they were resource people regarding policies, protocols, and procedures. CN7 indicated "everything has to be guided by the policy - that is actually my guiding principle." When presented with a challenging situation, CN7 explained that she assisted staff in taking the most appropriate action to ensure patient safety by asking: "So what is the policy? If we are not sure - let's look into it and do some research before we do anything."

Applying their experience and clinical knowledge to bedside care was also an important way in which CNs help keep patients safe. CN7 discussed:

> It's not just doing that leadership role - you need to be skillful as well. Because your nurses are looking at you as somebody that they can rely on and you can tell you get the respect from the staff when they know that they can depend on you as a CN.

CN1 explained the process of applying both leadership and clinical skills as "bringing all of my clinical knowledge and skills to whatever particular situation that will come up...my experience comes in handy." CN1 went on to discuss how his early nursing days on a very busy respiratory-focused unit helped to prepare him to deal with very complex clinical situations and unstable patients. CN1 passes on this knowledge and experience to the new graduates he works alongside. Working in the same organization and the same unit for a number of years was also identified as an asset in the CN role by five CNs (CN1, CN2, CN3, CN9, CN10), since this experience made CNs very familiar with the organization's policies, routines, and personnel.

As key resource people on their units, all CNs discussed the need to guide, support, and actively assist staff with problem solving. For example, CN5 stated: "I want to be a guide and at the same time, a coach, and really a team leader." CN2 articulated:

> As a CN I am a leader of the staff and I make sure I guide them to the right procedure and if they need help, I have to help them, and help them solve the problem - to come up with the correct solution for the issue.

Being a resource person was also related to another important CN role function necessary for patient safety: being an educator.

Educator. Eight CNs (CN1, CN2, CN3, CN4, CN6, CN7, CN9, and CN10) discussed being educators for staff, patients, and patients' family members. CN1 stated,

on the night shift, he was the primary person responsible for keeping nursing staff up to date with any pertinent updates happening within the hospital that influenced the nursing role or patient safety. To keep staff updated, CN6, CN9, and CN10 discussed conducting change of shift huddles. CN9 stated: "We do huddles before the beginning of the shift and at the end of the shift. We focus on who the high risk patients are." CN6 also discussed conducting as needed huddles when a patient safety event, such as a fall, or near miss occurs. A huddle is a brief meeting with the nursing staff normally led by the CN. As-needed huddles provide a means to educate staff about the changing needs of patients during a shift.

Working alongside new graduate nurses for teaching and mentoring purposes was also identified by three CNs (CN1, CN9, CN10) as an important CN role function necessary to promote patient safety. CN1 explained that new graduates will ask him to guide them when performing certain procedures, such as nasogastric tube insertion, stating: "I have been trying to guide a few people. I give people credit - I've had a couple of what I call the younger ones say, 'Ok will you come with me and show me'…I will talk them through it." CN9 also discussed encouraging new graduates to come to her with any questions or concerns. CN9 stated:

> I try to let them know that I am very approachable - there are no dumb questions. I look at their patient load to see if somebody has a chest tube - or something new that we don't see often. So I make sure I tell them if they have any questions to let me know. I check in with them every hour at least.

CN10 concurred with CN9 and stated:

> I have new grads…I can be a mentor to them. So I explain to them to avoid problems …"Please, I'm here to help you out. I don't mind." I've been in that (position) of being a new grad. So they tell me - that's how I make rapport with them - because it's for patients' safety.

In addition to helping educate staff, five CNs (CN2, CN3, CN6, CN10, and CN11) also spoke about the need to educate patients on such things as fall prevention. Educating patients about fall prevention, including discussing the organization's fall prevention policy, the use of bed exit alarms, as well as the importance of calling for assistance prior to getting out of bed. The organization's fall prevention policy is that patients do not get out of bed without the assistance of a staff member. CN10 discussed: "As part of the admission protocol…we explain it to them - everything in the hospital's policies, especially the (specific policy that patients do not walk independently)."

Educating patients about their care was an essential part of the CN role as discussed by CN1. CN1 discussed the need to narrate care and be a mentor for other staff to do the same. Narrating care involves telling patients what you are doing and why, instead of automatically just going and doing things to and with patients, assuming they understand why. CN8 also explained how when she helped to admit a new patient, she would provide them with a general idea of what they could expect during their hospital stay.

CN4 suggested CNs are also educators for visitors and family members about infection prevention. If patients required isolation precautions, CN4 explains the reason for the isolation precautions and monitors compliance with infection prevention practices. CN4 also ensures other members of the multidisciplinary team are compliant with

infection prevention policies, including wearing the appropriate personal protective equipment prior to entering patients' rooms. CN4 provided the example of a busy provider entering a room without the appropriate equipment and asking the provider to come back out and don the necessary protective attire. The actions CN4 takes to prevent the spread of infection is one way she advocates for the safety of all patients on the unit.

Advocate. Five CNs (CN1, CN2, CN4, CN7, and CN10) identified being advocates for both patients and nurses as a component of their role. Ensuring patients received timely and appropriate interventions was identified as a priority for these CNs. For example, CN4 provided an example of ensuring a young patient with a new brain mass receives frequent neurological assessments. CN4 articulated:

> The patient with the new brain mass - you have to make sure the mental status is good, it's not going downhill, you have to have tools to assess, really report what you seeing. You might not have an order, "ok there's no order, I'm not going to do it" - NO! It's patient safety and this is what we are looking for with this patient - the provider might have forgotten, the provider might not agree, but we see it every day and we know what to expect.

CN4 went on to explain that as a CN, she gets to know the patients on her unit well, particularly those that are on the unit for a relatively long period of time. Having this continuity allows her to recognize changes in the patients' conditions, often before their attending providers. When this happens, CN4 advocates for the patient: "You see them every day and you notice something different - you have to report it."

Advocating for safe practice environments was also a priority identified by six CNs (CN1, CN2, CN4, CN7, CN10, and CN11). To advocate for safe practice

environments, CN1, CN2, and CN10 discussed how they take their concerns to the unit managers or shift supervisors (also referred to as house managers), particularly when it comes to multiple admissions or needing to request additional support personnel. CN1 explained: "Sometimes I will actually plead my case to the supervisor…'we are a little crazy - if you can skip us' (referring to receiving another admission) sometimes they will. I like to believe I have the credibility of the managers." CN2 discussed the need to advocate for additional support personnel to assist with patients who may be combative or require continuous monitoring to keep both the patients and the staff safe.

> I will escalate it to the house manager or to the manager to see if we can get extra help - maybe the patient needs a sitter…if he is combative then we need to call a code (security) and we need some extra help from the security department.

CN7 discussed the need to advocate for a patient's safety by speaking with the house manager to try to move a patient closer to the nurses' station when they were identified as being at high risk for falls and requiring close observation. In addition, CN7 explained how she would communicate with the nurses and CNAs regarding the patients who were most at risk for falls and required close monitoring.

CN1 expressed the need to be an advocate for the night shift in general, stating that sometimes the night shift is the forgotten shift. CN1 discussed: "There was one time I just begged people to come on and just watch because there are times when the people making the decisions on a shift that have never seen the shift they are making the decisions for." To help advocate for the night shift and also to stay up to date on what was happening in the hospital, CN1 discussed taking an active role as a member on unit

committees. CN7 also articulated that being involved on unit committees provides a way to…

> Recommend what we think would be best and what we think would be safe for the patients and for the benefit of our patients…usually the management is pretty good at listening and entertaining all those ideas that we tell them.

Two CNs (CN1, CN4) discussed the need to advocate for patients to not be transferred or admitted to the units at change of shift, due to the potential for lack of monitoring at this time. During change of shift, nurses are giving and receiving reports on all their patients, so CNs identified the arrival of new patients to the unit during these times as a patient safety concern - an issue that has been ongoing for many years, according to CN1. The process of assigning admissions to nurses also emerged as an important CN role function.

Patient assignments. The process of assigning patients to nurses was identified as an important part of the CN role and patient safety identified by all CNs. Having a safe unit was the ultimate goal of the patient assignment process discussed by CN1. Making safe patient assignments involved knowing the acuity and complexity levels of patients coupled with knowing the capabilities of the nursing staff considered within the context of the available resources for that shift. CN8 explained: "Working with different nurses here you know their weaknesses and their strengths and so I try to match the patients to the nurses who can take care of challenging patients."

CN10 discussed being objective and fair when making assignments and avoiding favoritism. Being mindful of the assignments given to float nurses (nurses who are not regular staff on the unit) was also a consideration noted by CN10:

> So I explain it to them - you can't just dump all these heavy assignments to floats…If I get the report and I know that it is too complicated for one of the nurses, then I always change the assignment….it's all fair.

To be objective and fair when delegating workloads, CN1 discussed looking at the nurses' current patient assignments, gauging how busy the nurses were based on the amount of care their patients required. If CN1 had the option of which nurse to assign an admission to, he would try to ensure the receiving nurse would have a manageable and, therefore, safe workload. CN8 concurred: "I try to give the nurse with the confused one who has a patient who is jumping out of bed just four, no more than four, to kind of focus on the patient more."

One challenge identified by CN2 focused on dealing with a nurse reluctant to assume care of a particular patient. When this situation arose, CN2 stated she would explain to the nurse why she felt the nurse was the most capable of taking care of that particular patient.

> If I think the nurse is the most capable of taking care of that patient for the shift then - I just have to explain it to her in a very positive way…and then hopefully they will be able to accept the challenge they are going to have with that patient.

CN5 also reported encountering similar challenges when assigning patients to nurses. CN5 shared a recent incident when one nurse complained about the patient load assigned. CN5 reported having the exact same patient assignment on a previous shift and was able to manage the challenge.

Another challenge related to making safe patient assignments related to high numbers of admissions and discharges. This rapid turnover resulted in nurses often

having six or seven patients during the span of their shifts. CN11 stated: "So you are looking at least six or seven patients in a day - because they come and go - we admit them and we discharge them. So that is the challenge that we have every day on this unit." Short staffing also posed challenges for CNs trying to make safe patient assignments. CN9 discussed how short staffing poses a risk to patient safety, particularly when CNs are responsible for providing breaks to all the nurses on top of their leadership responsibilities. CN9 stated:

> It is hard to juggle doing the leadership responsibilities like the audits, ensuring everything is put in place, and yet still try to break the nurse, and pass meds for them. It's tough and it is really handling two job descriptions with one person. And that, I think, is very unsafe.

CN11 further elaborated on the challenges of having to fulfill the roles of unit clerk, Certified Nursing Assistant (CNA), the breaker, and also be the CN.

> So it doesn't matter how many patients they have - because sometimes we do not have the unit clerk, we don't have a CNA, we don't have a breaker. So my challenge as the CN is that I'm the breaker, the secretary, the CNA, and I'm still the CN.

During particularly busy times on the unit, CN4 and CN8 discussed how they would do their very best to provide direct assistance to the nurses receiving new patients while also ensuring the safety of the other patients on the unit. CN4 articulated how she could not hire more staff but she can be another nurse and resource for the staff. Actively assisting staff to provide the safest care possible within the context of available resources helped to take the pressure off nurses with heavy patient assignments discussed CN4 and

CN8. In some of the interviews, there were undertones of worry, sadness, and, at times, frustration, as participants discussed how insufficient staffing and resources jeopardized patient safety.

As the above examples illustrate, keeping patients safe requires the CN to assume multiple roles. Refer to Table 9 in Appendix N for a summary of the subcategories, breakdown of the properties, and examples of participants' words from the interview data for category #1: balancing multiple roles. The second category that emerged from the interview data was maintaining a watchful eye.

Category #2: Maintaining a watchful eye. All CNs reported the need to oversee patient care and overall unit functioning during their shifts. CN7 saw the CN role as "a second eye of the management - you want to make sure that things are being implemented." CN3 concurred: "You want to ensure that everything is being done on time and in the right manner." Furthermore, CN2 explained how CNs oversee adherence to organizational protocols and procedures as a key component of patient safety. "I make sure that all the protocols and procedures are being carried (out) and observed by all the personnel on my unit and I make sure that the patients are safe and we are meeting the standards of care." Multiple CNs articulated the need to provide a watchful eye over specific patient safety initiatives and associated protocols and procedures that included fall prevention, pressure ulcer prevention, infection prevention, ensuring compliance with core measures, and monitoring equipment.

Fall prevention. The prevention of falls was a major patient safety initiative identified by all CNs interviewed. All CN participants identified actions and processes they take to prevent falls. These actions included rounding on patients to ensure their bed

exit alarms were on, educating patients about the importance of bed alarms, and advocating to move patients at high risk for falls closer to the nurses' station. CN2 explained: **"**He is very high risk for falls, so I had to move the patient closer to the nurses' station so we can watch him…and that was for his own safety." CN11 also discussed how she called the bed control department to ask to move patients at high risk for falls where they can be in view of the nurses' station, instead of in a room on the back hallway that is not visible from the nurses' station. CN11 stated:

> I have a patient who has a subdural hematoma. I think he is 86 years old. So, they wanted to put the patient in room ___ which is all the way to the corner. And I called the bed control and I said, "I cannot put the patient there because it is too far and I cannot see the patient. I need that patient close to the station where we can see him."

An additional action CNs reported taking was advocating for a CNA to sit with a patient who was at very high risk for falls. CN2 explained: "If it is really necessary to have a sitter, it is because the patient is very high risk for falls." CN7 also discussed how a fall may have been prevented if the patient had been previously identified as high risk for falls. The patient was a young man who had suffered a cardiac arrest and was ambulatory but quite impulsive. CN6 also explained how it is often the younger patients and ambulatory patients who are most at risk for falling, particularly if they are receiving certain cardiac medications or sedatives and get up independently. In addition, CN11 articulated that patients at high risk for falls on her unit include elderly post-operative patients and those admitted with head injuries. In addition to advocating for high risk patients to be in rooms in view of the nurses' station, CN11 also identifies patients most

at risk for falls during unit huddles, reminding staff that these patients require a close watch.

Participating in, and overseeing compliance with, frequent rounding was another process six CNs (CN5, CN6, CN7, CN9, CN10, CN11) reported engaging in to help prevent falls. When CN11 conducts her rounds, she ensures patient rooms are free of clutter, patients have their call lights, and that bed alarms are on. CN5 discussed how during hourly rounds, patients are asked if they require assistance with getting to the bathroom and have necessary items within reach, a strategy that can help prevent falls. CN5 explained: "If my nurses are in the other patients' rooms and other patients are calling to go to the bathroom and there are no unit assistants available, I don't just sit here - I go to prevent falls." CN8 also explained how part of her role as the CN was to assist with patients' toileting needs - an important part of preventing falls.

Pressure ulcer prevention. One nursing specific patient safety initiative three CNs (CN3, CN5, CN6) identified as important to their role was pressure ulcer prevention. Checking all patients admitted and transferred to the unit for potential skin issues was identified as one of the actions CNs take to keep patients safe. CN3 explained: "If we admit a patient with a pressure ulcer or skin problems, we assess it and the necessary treatment that we can do." When assisting with patient care, CN5 takes the opportunity to assess patients' skin. He stated: "I like to see what is going on. Is there a pressure ulcer?"

CN6 articulated how she directly assesses skin and intervenes when patients are admitted with complex skin issues: "If there is a lot of skin problems, then I get involved. I was part of the wound team before so I'm pretty skilled at it." With complicated skin

issues, CN6 assists staff in determining the nature of the problem and how to document it. Another important way CNs helped keep patients on their unit safe was through infection prevention.

Infection prevention. Three CNs (CN3, CN4, CN9) identified actions and processes related to infection prevention they engage in to help keep patients safe. CN3 provided the example of immediately isolating a patient with suspected clostridium difficile and communicating with members of the team. The prevention of hospital-acquired clostridium difficile was also identified by CN4 as a key patient safety initiative. CN4 also stressed the importance of monitoring compliance with infection prevention and infection control policies and protocols, such as hand hygiene and wearing personal protective equipment, when entering isolation rooms. As a way of preventing central-line associated blood stream infections, CN9 discussed ensuring that patients with central lines had orders for daily bed baths with chlorhexidine wipes. Preventing the spread of infection is essential to safe patient care. Core measures are other examples of indicators for monitoring safe patient care.

Core measures. Three CNs (CN5, CN6, CN9) discussed the CN role in ensuring compliance with core measures as being important to patient safety. Core measures are evidence-based standards of care that, when implemented correctly, promote quality, safe patient care. Among the core measures identified by CN6 were for the care of patients with congestive heart failure and stroke. CN6 explained how she conducts both formal and informal audits to monitor compliance with the core measures standards of care.

CN9 discussed conducting audits to ensure compliance with the core measure of venous thromboembolism prophylaxis (VTE), a term referring to the prevention of blood

clots. CN9 stated: "Every morning we have this audit tool where we are checking to make sure that all the patients have either a chemical or a mechanical prophylaxis and if not, then we question it with the physician."

Care of diabetic patients is another area of patient care requiring compliance with core measures. Monitoring the assignment of personnel for diabetic patients was a patient safety issue identified by CN5. Care of diabetic patients was on the mind of CN5 during the interview after participating in a recent survey. CN5 commented:

> I don't think it is safe for you to have five patients and five with diabetes - what if there is three of them that are going hypoglycemic? I was telling them that because we were doing audits for diabetes, too. So, I was suggesting… I think it is better to split them - one each as much as possible. I think it is better that way - for the safety.

CN6 discussed checking discharges to ensure the printed medication information provided to the patient matches the provider's discharge summary. Checking discharges also involves ensuring the appropriate education is provided to the patient and that all necessary disciplines have been involved with the patient. Another way in which CNs maintained a watchful eye and helped to promote patient safety was by monitoring equipment.

Equipment. To keep patients safe, four CNs (CN1, CN4, CN7, CN9) noted they had to ensure there was enough equipment and that the equipment was utilized appropriately. For example, CN1 stated he ensured there was enough intravenous (IV) pumps and that the bed was present in the room prior to admissions arriving. CN4 discussed challenges when there was only one pulse oximeter for 24 patients. In order to

provide safe care, it was crucial to have the necessary equipment. When staff were caring for a patient with suspected or confirmed clostridium difficile, CN4 made sure there were bleach wipes outside the room for disinfecting equipment and surfaces.

With regards to bed alarms, CN7 explained how there are different sensitivity settings. For patients are who ambulatory, having the alarm on the least sensitive setting may mean the patient is already out of the bed before the alarm is activated and staff are alerted to check the patient. CN9 provided an example of a specific situation she recalled where a patient at high risk for falls got out of bed on her own: "(The) bed alarm went off, but these bed alarms sometimes don't react as quick, so she was already up and about." CN7 stated: "In instances for patients who are really unsteady and very confused and able to bear weight on their own, then we kind of try to tweak…the settings of the alarm and make it a little bit more sensitive." CN11 also discussed reminding staff at unit huddles to ensure the bed alarms were set to the most sensitive setting for patients most at risk for falls.

CN11 also discussed the importance of ensuring that equipment was not cluttered in the unit hallways. In the event of an emergency situation, it is important to be able to move beds and emergency equipment freely through the halls. In addition, ensuring patient rooms are uncluttered is important to prevent patients from tripping or running into objects when they mobilize, as stated by CN11. As the above examples illustrate, actions and processes that involved both monitoring the presence, and appropriate utilization, of equipment, is an important part of keeping patients safe.

Refer to Table 10 in Appendix N for a summary of the subcategories, breakdown of the properties, and examples of participants' words for category # 2: maintaining a

watchful eye. While maintaining a watchful eye, CNs both worked with and led the health care team, the third category to emerge from the interview data.

Category #3: Working with and leading the health care team. As essential members of the health care team, all CNs reported both working with and leading the health care team. As a regular, full time CN, CN1 explained how he knows the background on all the patients on the unit and relays important details to the nurses caring for the patients, other CN colleagues, and other members of the health care team. CN3 echoed this tremendous leadership responsibility by stating:

> The CN is the one who oversees everything. It's like you know everybody - you know all the patients, you know all the nurses, you know the doctors - and you're the one who coordinates everything for everyone. It's like you're in the middle of everybody. So if somebody missed something you're the one who's following it up or trying to fix it. You're the one who (is aware) of everything we have to do. It's like a little bit of everything. You're a little bit of everyone.

The phenomenon of being "a little bit of everyone" as a team member and leader was also identified by CN7 who articulated: "You need to be ready with the different roles that you do. You have to be more flexible, since it is not just the CN role that you are doing." CN10 and CN11 further elaborated on the points made by CN7 by stating: "I'm the clerk, I'm the unit assistant, I'm the staff" (CN10). CN11 articulated:

> I change my hat every time - I switch around. I become a secretary, I become the CN, I become the breaker, I become the CNA and the nurse at the bedside at the same time. I don't know what else I am going to be! Maybe I could be the waiter sometimes!

Being flexible and taking on multiple roles as a member, and leader, of the health care team helped CNs keep patients safe. CNs also kept patients safe through the actions and processes of collaborating, building a high functioning team, and taking care of the staff.

Collaborating. All CNs noted the importance of collaborating with the nurses on their units. For example, CN4 discussed maintaining close communication with the nurses for updates on the patients' conditions, stating there is "a lot of feedback and communication between the nurses and my role." CN4 provided the example of going to assess a patient with the primary nurse to determine the best course of action needed to keep the patient safe. "We both go and assess the patient and we decided to call the provider. 'Hey, this is what we think we should do, what do you think?' and we get an order."

CN10 further elaborated about how it is crucial to have open communication with the nurses to keep patients safe. CN10 discussed how she instills in the nursing staff the importance of keeping her up to date when patients experience changes in condition. CN10 stated:

> I see to it that everything is ok - you have to collaborate with the doctors if they have problems with the staff. At times, they always, always, call the CN. So that's why I told my primary nurses if they have some change in status with their patients - please let me know.

In addition to collaborating with the nurses and involving the attending provider, CNs also had an important role in facilitating collaboration among other multidisciplinary team members to keep patients safe. CN9 provided the example of involving the CNAs and unit clerks in unit huddles where patients at high risk for falls were identified.

Collaborating with all unit staff was a strategy to raise awareness about patient safety issues also identified by CN3: "the CNAs and unit clerks give me some input, too, of the patients who are not in a safe state. Like the patients that are confused."

Collaborating with unit level managers and house managers to keep patients safe was also identified by seven CNs (CN1, CN2, CN4, CN7, CN9, CN10, and CN11). CN10 discussed collaborating with the unit manager or house manager when issues with staff arose that posed a threat to patient safety. CN10 stated:

> So far I have no problems with the supervisors or my managers. I always communicate with them. If I have problems with the staff - I talk to the staff first, if I can resolve it - that's fine. If not, "I told you many times, so I'm sorry, I have to escalate this one." So that's where the manager comes in.

In addition, CN6 suggested that an important part of her role was "closing the loops - with the nurse, the CN, the physical therapists, occupational therapists…speech, everybody that's involved, including the doctor." CN3 mentioned consulting the wound ostomy continence nurse (WOCN) when the CN identified pressure ulcers or patients at high risk for skin issues. Another time in which CNs collaborated with the multidisciplinary team to keep patients safe was following an actual patient safety event or near miss. CN6 discussed:

> Anytime that we miss something that is big, we do what we call a debrief where the nurse involved, the CNs involved, the doctor, any of the disciplines involved; we all get together in a meeting and we discuss what everybody (whoever is involved) could have done better. Where did we drop the ball, basically? When did it happen? Why did it happen?

CN7 also discussed her role in a unit level committee focused on improving the safety and quality of patient care: "We try to recommend what we think would be best and what we think would be safe for the patients and for the benefit of our patients." CN7 went on to explain how this unit level committee involves collaboration with front line staff, CNs, and unit managers. CN10 was also involved in a similar unit level committee. CN10 asks staff to come to her with patient safety issues or concerns so they can be addressed at the next meeting. CN10 articulated: "Please let me know if you have any concerns we need to discuss…that way we can resolve some issues."

Six CNs (CN2, CN3, CN4, CN5, CN7, and CN10) identified family as being an important part of the health care team. CN2 discussed collaborating with the patients' family members to obtain important information about the patients, particularly when a patient is confused or cannot speak for themselves. CN3 provided an example of how the nursing staff on her unit taught a patient's wife how to safely feed him with a tracheostomy, utilizing recommendations from the speech therapist.

CN4 discussed the importance of educating patients' family members about infection control practices and why they are important to protect other hospitalized patients. CN5 provided an example of having to call the physician to clarify a patient's level of care when the family had questions about their loved one being on end of life comfort care. CN7 suggested that family members may also help keep patients safe when they are present with patients, particularly when they are at high risk for falls and injuries while in the hospital. CN7 articulated: "We could have had somebody who can be sitting with him at least, or maybe a family member."

CN10 provided the example of making an effort to accommodate a patient's family member who had travelled out of state to visit a patient. The family member arrived at 2 o'clock in the morning and the patient was in a semi-private room. Realizing it was important for the family member to see the patient, CN10 contacted the house manager and spoke with security and the patient sharing the room to allow the family member to come to the unit. Actions and processes that included patients' family members in the provision of safe patient care was part of the CNs' role in building a high functioning team.

Building a high functioning team. Building a high functioning team was an essential part of maintaining patient safety. All CNs reported having a role in ensuring staff were responsive to the needs of all the patients on the unit. This involved role modeling and promoting a culture where everyone was responsible for the safety and wellbeing of all the patients on the unit. CN9 had the following to say about staff responsiveness to bed alarms:

> Focusing on reacting to those bed alarms quickly, trying to get that culture with the staff - I think is important. I see a lot of times sometimes we are so caught up with charting, or at the nurses' station, and we don't pay attention to the alarms. So just reacting quickly and setting that example.

CN11 further articulated:

> I have to make sure that we talk about it in the huddle. "Ok, this patient so and so is a watch, so make sure that the bed alarm is on sensitive and if you hear the alarm - go run - you don't just pass by. You go help right away - that's how it is." So we help each other.

Building a high functioning team involved having confidence in their teams' abilities and genuinely liking the people on their team. CN3 explained: "I don't really micromanage them because I really trust them - I just follow up with some things…pretty much everybody is aware about patient safety… health care workers are very conscientious about patient safety."

CN1 discussed how a high functioning team occurs when…

> Everybody looks out for everybody else. We don't consider only my patients - and so that is the only way that we can operate at night - you have to always be aware. And if someone hears an alarm, then boom - or some call light is going off, usually whoever is the closest answers. That again mentality is what keeps us as safe as we can.

One of the other night shift CNs (CN10) also elaborated on how well her team works together. CN10 stated: "The night shift people, my staff, I have a good team on the night shift." CN10 provided the example of nurses who were not as busy offering to help out with other patients on the unit if the primary nurse was busy.

Building a high functioning team that works together to keep patients and each other safe can be challenging. CN5 explained that difficult staff posed a challenge for the CN, noting it is important to "get to know the people you are working with" since as a CN "you have a team to build." Adopting the attitude of "let's do it together" is a strategy CN5 finds effective. CN9 echoed the challenge of working with diverse personalities by stating "there are different personalities that you try and adjust how you would handle things with certain people." Similar to CN5, CN9 found a collaborative leadership style effective for building a high functioning team. CN9 articulated:

> It's how you know your staff and how they are receptive to you. I'm known to be a quiet leader. I'll be assertive when I have to be, but I'm all about respect and working as a team. I'm not one to tell people what to do - you know "you do this and you do that." I make them feel like we are all working together.

Although building a high functioning team is challenging, the CN participants seemed up to the challenge. CN2 discussed:

> The CN role is always a very challenging position. And it takes a lot of patience and courage to work on the unit. You know it's always a day to day basis - the one day you are ok - the next day you may encounter some difficulties but hoping that the next day will be a lot better.

CN11 further elaborated: "I have multiple hats on this unit. What can you do? You just do what you can do to protect your patients."

It seems the CNs developed resiliency through their years of experience and insights gained. Being involved in direct patient care and being present at the bedside were identified as essential to patient safety, and also a source of job satisfaction for CNs. CN2 explained: "I like to really be with the patients - with the care at the bedside. That's why I like this job - close to the patients more than anything else."

Despite the challenges of the CN role, CN9 concurred with CN2: "We just do the best we can. I love my job and I wouldn't do anything else." CN1 also discussed how working with a high functioning team was part of the reason he still worked as a nurse. CN1 stated: "If I didn't have that kind of great high functioning, I probably would have retired. But, because we do have it, it makes it really - I won't say it - fun - but it's still a joy."

Being present at the bedside with patients and staff was another way in which CNs helped to build high functioning teams as they both worked within, and led, the health care team. CN4 discussed:

> Before a CN, I'm a nurse. I have the same skills as them, it's just that instead of four patients, I have 24 and six nurses. It's more of a responsibility but I think my role it has to be more - beyond the nurses' station and being on a computer monitoring the patients. It has to go in each room and speak to each nurse.

CN7 echoed this responsibility of being a key member of the health care team: "At some point we need to be there at the bedside." To further support the need to be an active member of the team, CN8 discussed how when one member of her team was busy, "I kind of get the little things done for this nurse so she can focus more on this either very sick patient, or very busy patient that she has." Assisting nurses as much as possible was one way CNs demonstrated a leadership role within the health care team, as they helped look after not only patients, but also took care of the staff.

Taking care of staff. In addition to taking care of patients and ensuring patients on their units were looked after and safe, all CNs expressed the need to ensure that staff were safe and taken care of too. CN2 explained: "I make sure not only the patients, but also the staff, on our unit are safe and well taken care of." CN5 discussed how turn teams - three or four staff members assisting total care patients with repositioning in the bed - were important not only for the patients' safety, but also to lessen the chance of staff being injured. CN10 articulated how she always includes herself in the turn teams, particularly when many of the nurses are busy, to ensure there are enough staff to safely reposition the patients.

Ensuring staff received their breaks was also an important role function identified by multiple CNs. CN6 stated: "I also help by breaking nurses - making sure that they get their breaks." CN9 discussed how 80% of her shift involves breaking nurses. Making sure the needs of the staff were met, in addition to the needs of the patients, was discussed by CN4 as part of her leadership vision: "I think a good leader - we should have the vision and the passion to really care for those patients and the nurses."

As the above examples demonstrate, the CNs' ability to work with and lead the health care team is essential to promoting patient safety. Refer to Table 11 in Appendix N for a summary of the subcategories, breakdown of properties, and examples of participants' words for category #3: working with and leading the health care team.

Summary of interview data. Three main categories relating to how CNs keep patients safe emerged from the analysis of the interview data:

1) Balancing multiple roles
2) Maintaining a watchful eye, and
3) Working with and leading the health care team.

As the above discussion and tables illustrated, the analysis of the interview data yielded numerous subcategories, and multiple properties within each category. The properties identified consisted of examples of specific actions and processes CNs take to keep patients safe as reported during the interviews. The second type of data collected in this study was observations of CNs during shifts on their respective units. The intent of the observations was to provide support for the actions and processes identified in the interviews.

Observation Data Findings

Documenting CNs' actions and processes and the context in which they occurred was the focus of the observations. The data from the observations supported the three main categories pertaining to how CNs keep patient safe:

1) Balancing multiple roles
2) Maintaining a watchful eye, and
3) Working with and leading the health care team

Category # 1: Balancing multiple roles. During observations, CNs were observed engaging in a variety of actions and processes that involved managing the flow on busy medical-surgical units. These actions and processes involved engaging in direct interventions, being a resource person, educator, and advocate, and making safe patient assignments.

Direct interventions. Additional evidence was found in the observations to support direct interventions as a key way CNs help keep patients safe. During one observation, the CN was observed assisting with a challenging intravenous (IV) insertion for a patient receiving a blood transfusion who lost his only functioning IV midway through the transfusion. Recognizing completing the blood transfusion was a priority for this patient's safety, the CN went to assist with reinserting the IV. In another observation, the CN administered pain medication for a patient while she was covering for a nurse on her dinner break.

Additional direct interventions observed included the following: Ensuring rooms were ready and prepared for new admissions (five observations), answering call lights

(all observations), answering unit phones (all observations), assisting patients to the bathroom (three observations), and responding to bed alarms (two observations).

Resource. Consistent with findings from the interviews, during all observations, CNs were observed as the key resource person for everyone from the nursing staff, assistant personnel, lab personnel, and transportation staff. Physicians also sought out the CN to receive updates about patients. CNs were observed assisting with admissions in three observations. This assistance included greeting patients, helping to settle patients, and conducting brief assessments to understand the new patients' acuity levels and care needs.

Educator. As discussed by CN6 in the interview, unit huddles were observed during two observations. A huddle is a brief meeting with the nursing staff that generally occurs near the beginning of a shift. A huddle is normally led by the CN and may cover what is happening in the hospital and organization, unit performance on key quality and safety metrics, as well as patient safety updates pertinent for the shift. These updates may include identifying patients that are high risk for falls, confused patients who are requiring close monitoring, or patients who are unstable.

In addition to being educators for staff, during one observation, the CN conducted rounds to check all the bed alarms, an action identified in multiple interviews as a fall prevention strategy. While checking the bed alarms, the CN took the time to educate patients about the importance of bed exit alarms as a fall prevention strategy. If there is time later in a shift, the CN discussed following up with patients who may have previously declined use of the bed alarms.

As CN6 noted in the interview, it is often the patients who are alert and ambulatory who are actually at greater risk for falls, so these patients may benefit most from fall prevention education. In another observation, the CN shared a rounding log that included educating patients about the hospital's policy on being accompanied by a staff member when ambulating, as well as checking compliance with the use of bed exit alarms.

Advocate. Consistent with findings from the interviews, during observations CNs were observed escalating patient care issues to the appropriate personnel. For example, during one observation, the CN was observed calling the house manager to request permission to order specialty beds for two patients on the unit. These specialty beds are important for patients who require low air loss mattresses when they either have existing pressure ulcers, or are at high risk for pressure ulcers, or for those patients that require a special bed due to their size.

In another observation, the CN was observed speaking with a patient's family about the plan of care and involving the physician since the family's requests were not consistent with the plan of care previously agreed upon. In this situation, the CN felt it was important that the patient's request be honored. During one observation, the CN discussed her role as a patient advocate, stating how her role is to make decisions that are best for the patients and patient safety. Although she practices a collaborative leadership style, there are times where she has to exercise her authority as a CN, and speak up for what is best for the patients, even when these actions are not well received by staff.

Patient assignments. Consistent with data obtained in the interviews, during all observations CNs were observed being responsible for assigning new admissions and

transfers to their units to a receiving RN. CNs were also responsible for making assignments for the oncoming shift, both processes identified as important to patient safety in the interviews. On the units where observations occurred, there were staff who worked both eight hour and 12 hour shifts, so the CNs were responsible for making patient assignments anytime new staff came on shift. During four of the observations that coincided with a change of shift, CNs were observed calling the CN on another unit to confirm which staff would be going to which unit.

During one observation, a nurse questioned the new admission assigned. The CN offered an explanation for the patient assignment decision and carried on. Having to work with staff who were either reluctant to take a particular patient assignment or questioned their assignments was a challenging part of the CN role identified in multiple interviews. Table 5 summarizes the findings from the observations for category #1: balancing multiple roles.

Table 5

Observation Data: Balancing Multiple Roles

Open Codes: Subcategories	Examples of Observation Findings
Direct interventions	Assisting with a difficult intravenous (IV) insertion; preparing for admissions; answering call lights; assisting patients to the bathroom; responding to bed alarms
Resource	Being a resource for all disciplines; assisting with admissions
Educator	Conducting huddles; educating patients about fall prevention including bed alarms
Advocate	Speaking to the house manager, family members, and physicians on the patients' behalf; making decisions that are in the best interest of the patient and patient safety
Patient assignments	Assigning admissions and transfers; making assignments before change of shift; collaborating with other CNs for the assignment of staff; providing rationales for assignment decisions

Category # 2: Maintaining a watchful eye. Consistent with interview findings, maintaining a watchful eye was evident during the observations. CNs were observed maintaining a watchful eye over such diverse initiatives as fall prevention, pressure ulcer prevention, infection prevention, core measures, and monitoring equipment. One way of maintaining a watchful eye over patient safety initiatives involved participating in leadership rounds, observed by three CNs. Leadership rounds are generally an effort shared between CNs and managers that involve checking in with patients and their visitors, if applicable. Questions asked focus on service, quality of care, and patient safety. One patient safety indicator monitored during leadership rounds is fall prevention, specifically the use of bed exit alarms.

Fall prevention. During all observations, CNs were observed monitoring compliance with fall prevention policies, including monitoring compliance with bed exit alarms. One CN shared a CN rounding log which included checking bed exit alarms and providing education to patients about the importance of the alarms. During two observations, the CNs discussed how alert and oriented patients who are ambulatory often decline the bed alarms. One CN explained how this situation is an example of when patient safety is sometimes at odds with patient autonomy. As discussed under the subcategory of direct interventions, CNs were also observed responding to bed exit alarms and assisting patients to the bathroom to prevent falls.

Pressure ulcer prevention. During three observations, CNs were observed checking the patients' skin with the primary nurse upon admission. In another observation, the CN was observed going in to personally assess a patient with an actual skin problem and investigating if this problem was previously addressed. Taking part in

repositioning total care patients was another process observed as a way for CNs to assess patients' skin and ensure all the necessary pressure ulcer prevention strategies were implemented. CNs were observed organizing and participating in the turn teams in four different observations.

Infection prevention. During all observations, CNs were observed adhering to infection control practices, such as hand hygiene and complying with isolation procedures. During one observation, the CN was observed having an audit log to keep track of all patients on the unit with indwelling urinary catheters. Urinary catheters can lead to catheter-associated urinary tract infections and ensuring non-essential indwelling urinary catheters are removed in a timely manner is a key part of infection prevention. For all patients with indwelling urinary-catheters, it was an expectation that the CN would follow up with the primary nurse and physician if necessary to clarify if the catheter was still needed. Compliance with indwelling urinary catheter removal within two days of most surgeries is also a core measure the CN monitored.

Core measures. In two observations, the researcher observed CNs engaging in monitoring compliance with core measures, including utilizing a formal checklist during the admission process with a stroke patient. In addition, during two observations the researcher observed CNs checking patients' discharge instructions and completing a discharge checklist to ensure compliance with applicable core measures. One additional way CNs maintained a watchful eye was by monitoring equipment.

Equipment. During one observation, the CN was observed ensuring the necessary equipment was present in the room prior to the arrival of a patient from the emergency department. During this same observation, a staff member approached the

CN about following up with a maintenance request. Table 6 summarizes the findings from the observations under category #2: maintaining a watchful eye.

Table 6

Observation Data: Maintaining a Watchful Eye

Open Codes: Subcategories	Examples of Observation Findings
Fall prevention	Monitoring compliance with fall prevention policies including bed exit alarms; responding to alarms and assisting patients to the bathroom
Pressure ulcer prevention	Checking patients' skin upon admission; participating in repositioning patients at risk for pressure ulcer development; following up with a skin issue
Infection prevention	Role modeling infection control practices, such as hand hygiene and isolation precautions; auditing patients with indwelling urinary catheters to prevent catheter-associated urinary tract infections
Core measures	Completing an admission checklist for a stroke patient; checking discharge documents for compliance with core measures
Equipment	Checking the room for a bed and intravenous (IV) pole prior to an admission arriving; following up with a maintenance request

Category #3: Working with and leading the health care team. During the observations, CNs were observed engaging in various actions and processes as they both worked with, and led, the health care team. These actions and processes involved collaborating, building a high functioning team, and taking care of staff.

Collaborating. Consistent with interview findings, CNs were observed collaborating with various members of the health care team to help keep patients on their units safe. During three observations, CNs were observed collaborating with case managers to coordinate safe discharges. For example, in one observation, the CN took a leadership role because a transportation crew was already present on the unit when the CN received a call for the case manager that the receiving facility was no longer able to

accept the patient. The CN was able to intercept the transfer and ensure the patient remained on the unit until another suitable facility was found.

In another observation, the CN was observed collaborating with a hospice liaison for discharge planning arrangements for a patient being discharged on home hospice. During one observation, the CN spoke with a physician when a patient's family member had questions about test results. In another observation, the CN was observed collaborating with a nurse from the IV team to assist with a difficult IV insertion. Collaborating with members of the multidisciplinary health care team was an important part of building a high functioning team.

Building a high functioning team. During four observations, CNs were observed participating in the turn teams, where groups of four nursing staff members assist with repositioning total care patients. In some observations, the researcher observed the closest staff member promptly responding to call lights and bed alarms, regardless of whether or not that staff member was formally assigned to care for that patient. In other observations, the researcher observed less teamwork and the CN had to directly ask staff to assist.

During one observation, the CN was observed offering insight to members of his team about a particular patient's condition, commenting that this was the third night in a row a patient had nausea and vomiting at approximately the same time. The CN reflected that his presence on multiple consecutive nights allowed him to have continuity with patients and guide the nurses with assessments and interventions necessary to keep their patients' safe. He joked during the observation that sometimes he was the one giving the report to the nurses caring for the patients, instead of the other way around. Sharing this

insight is one way the CN helps take care of patients while also assisting the staff in their work.

Taking care of staff. In all observations, the CNs were observed having a role in either organizing and coordinating breaks or directly providing breaks to staff. This included taking over any necessary tasks while the primary nurse was on a break, or taking over the role of a CNA who was sitting with a confused patient who wanders. One CN was observed having a relaxed approach to his interactions with the staff and joked that "they expect me to make the coffee now!" Table 7 summarizes the data from the observations for category #3: working with and leading the health care team.

Table 7

Observation Data: Working With and Leading the Health Care Team

Open Codes: Subcategories	Examples of Observation Findings
Collaborating	Speaking with members of the health care team; involving family members with care decisions
Building a high functioning team	Participating with turning patients; responding to call lights and bed alarms; offering insight about patient care
Taking care of staff	Organizing and coordinating breaks; providing a relaxed and collegial work environment

As the previous examples illustrated, the observation component of this study provided support for the actions and processes CNs identified in the interviews as important to keep patients safe. Examples from the observations provided additional properties to support the categories and subcategories that emerged from the data in the interviews. The findings from the interviews and observations suggest that CNs engage in a multitude of complex actions and processes all aimed at the same goal: keeping patients safe.

Chapter Summary

Chapter 4 provided a detailed presentation of the findings using microanalysis, open coding, axial coding, and selective coding processes to organize and analyze the data collected through interviews and observations with CNs. Three main categories emerged from the actions and processes CNs engage in to keep patients safe: balancing multiple roles, maintaining a watchful eye, and working with and leading the health care team. The subcategories for balancing multiple roles included direct interventions, resource, educator, advocate, and patient assignments. The subcategories for maintaining a watchful eye were fall prevention, pressure ulcer prevention, infection prevention, core measures, and equipment. For working with and leading the health care team, the subcategories were collaborating, building a high functioning team, and taking care of staff.

The identification of subcategories included an articulation of properties supported with numerous examples of specific actions and processes CNs engage in to keep patients safe. The core category, or central phenomena, that emerged was navigating through chaos. Chapter 5 provides a discussion and synthesis of the study findings within the context of nursing science, the substantive grounded theory that emerged from the data, along with implications of the findings and recommendations.

Chapter 5

Discussions, Implications, and Recommendations

Patient safety is a significant problem globally and throughout health care settings, including hospitals (Adams & Korniewicz, 2011; Richardson & Storr, 2010; World Health Organization, 2014b). Estimates suggest 195,000 patients die annually in United States hospitals from patient safety events, totaling $19 Billion in health care expenditures (Department of Veterans Affairs, 2006). As front line clinical leaders responsible for overseeing patient care and unit functioning (Cathro, 2013; Connelly & Yoder, 2003; Flynn et al., 2010; Thomas, 2012), Charge Nurses (CNs) have a pivotal role in maximizing positive patient outcomes and minimizing harm.

The purpose of this qualitative, grounded theory study was to explore the actions and processes CNs implement to keep patients safe and to generate a substantive theory that can inform CN job descriptions, serve as the basis for CN orientation and training, and empower CNs to promote patient safety in practice. Data collection involved interviews and observations, with the aim of answering two research questions:

RQ #1: What actions and processes do CNs on medical-surgical nursing units implement to keep patients safe?

RQ #2: What substantive theory might emerge from the data collected during interviews and observations with CNs?

Data analysis involved microanalysis, open coding, axial coding, and selective coding as discussed by Strauss and Corbin (1998) and consisted of both manual and software-assisted (NVivo ™) analysis. In Chapter 4, the researcher presented the data analysis procedures and study findings. Chapter 5 provides a discussion and synthesis of the study findings for the first research question within the context of nursing science. In

addition, the substantive grounded theory that emerged from the data to answer the second research question is discussed as well as how the study findings relate to the metaparadigm of nursing (Fawcett, 1984, 2005) and relevant theories. Chapter 5 also includes a discussion of the study limitations, as well as recommendations for nursing practice, leadership, education, and research.

Study Findings RQ #1

Data analysis from the interviews and observations with CNs yielded three main categories, multiple subcategories, and numerous properties. This section includes a summary of each of the three main categories and corresponding subcategories that emerged in this study within the context of the relevant literature. The three main categories were balancing multiple roles, maintaining a watchful eye, and working with and leading the health care team.

Category #1: Balancing multiple roles. The category of balancing multiple roles that emerged in this study was consistent with literature describing the CN role. In Connelly, Yoder, et al.'s (2003) study identifying CN competencies, one organizational competency consisted of coordinating multiple tasks to keep the unit running. One way in which CNs in this study reported overseeing the unit functions related to patient safety was by frequent rounding. In Eggenberger's (2011) study exploring the experience of being a CN in acute care, "doing my rounds" (p. 75) was a subtheme under the theme of "keeping patients happy" (p. 75). Among the many roles CNs in this study discussed performing were direct interventions; acting as a resource, educator, and advocate; and making patient assignments.

Direct interventions. The CNs in this study engaged in a variety of direct interventions to keep patients safe. These direct interventions ranged from answering call lights, responding to bed alarms, assisting patients to the bathroom, assisting with admissions and discharges, and performing technical skills. In Eggenberger's (2011) study exploring the CN role, one theme was "jumping in the trenches" (p. 77). Providing direct assistance with patient care activities was necessary to prevent staff from being overwhelmed when faced with multiple patient care needs (Eggenberger, 2011). One theme that emerged in Nunn's (2008) grounded theory study exploring leadership competencies for CNs was "technical skills" (p. 56); specifically being able to assist with intravenous (IV) insertions. In addition, one clinical/technical competency identified in Connelly, Yoder, et al.'s (2003) study exploring CN competencies involved conducting patient assessments throughout the unit, assisting staff, performing direct patient care, and using knowledge of both patients and the staff to provide care, actions and processes discussed by the CNs in this study.

CNs in this study also reported stepping in to assist with challenging clinical situations, such as when a patient experienced a sudden change in condition requiring immediate action as a strategy to keep the patient safe. Matthews (2010) identified the need for CNs to respond immediately and be present during crises. Mahlmeister (2006) also discussed CNs as first responders in emergencies, helping to communicate with team members, managing the flow of traffic, while ensuring other patients are cared for and necessary equipment and supplies are available. Similar to Eggenberger's (2011) findings of "making a difference" (p. 72) and being "close to the bedside" (p. 72), being

able to be present at the bedside and provide direct interventions were sources of job satisfaction for CNs in this study.

Resource. CNs in this study reported being front line resource people for nurses and all members of the health care team. CNs were knowledgeable about policies and procedures necessary to keep patients safe. CNs used their knowledge, clinical experience, and leadership skills to guide nurses' decision making and keep patients safe. In Eggenberger's (2011) study, the theme of "putting out fires" (p. 74) was most consistent with the subcategory of being a resource in this study. In Eggenberger's study, CNs reported being the first point of contact for problems and issues. Additional subthemes in Eggenberger's study pertinent to being a resource included "setting an example" (p. 80) and "advising clinical practice" (p. 64). Eggenberger's participants discussed guiding decision making and problem solving - including assisting with solving complex clinical problems - consistent with findings from this study.

CN competencies identified in Connelly, Yoder, et al.'s (2003) study under the category of clinical/technical included clinical resourcefulness and knowledge sharing. In addition, critical thinking competencies included using knowledge of patients and staff to provide care, trouble shooting, and problem solving. Matthews (2010) also identified the need for CNs to know the health needs and conditions of the patients on the unit. Organizational CN competencies identified by Connelly, Yoder, et al. included knowing and applying policies and procedures and overseeing the activities on the unit, consistent with findings from this study.

Additional support for the subcategory of resource is found in studies by Nunn (2008) and Wilson et al. (2012). One core leadership skill identified in Nunn's study

exploring the perceived leadership skills needed to improve the effectiveness of CNs was "resourceful" (p. 52). Finally, in Wilson et al.'s study exploring intrashift staffing decisions made by CNs, one theme related to necessary attributes of the CN was "resourcefulness" (p. 812). Being resourceful involved being a resource on policies, assisting with decision making, as well as knowing the patients and knowing the unit (Wilson et al., 2012), which supported the findings from this study.

Educator. CNs in this study assumed the role of educator to help keep patients safe. CNs were educators for staff on the unit, paying particular attention to the needs of new graduate nurses, or other staff requiring additional guidance and support. McSwain's (2011) study exploring perceived mentoring responsibilities of CNs suggested that CNs are often the only mentors for new staff and the only source of continuing education and constructive criticism for all nurses. Similar to Eggenberger's (2011) findings, including a theme of "nurturing staff growth" (p. 80), CNs in this study took active roles in educating, mentoring, and supporting staff.

In Connelly, Yoder, et al.'s (2003) study exploring CN competencies, engaging in staff development and training was a competency under the category of human relations. Sherman et al. (2011) indicated that an essential leadership quality for front line leaders involves being an expert educator. In this study, CNs also educated patients and families about patient safety issues, including fall prevention and infection prevention. Roberts (2004) suggested the nursing roles of educators and patient advocates often go hand-in-hand.

Advocate. The concept of advocacy has a strong presence in the discipline of nursing (American Nurses Association, 2001; Curtin, 1979; International Council of

Nurses, 2006). In this study, CNs assumed the roles of advocates for patients and staff, as well as for safe practice environments. CNs reported advocating for patients to receive necessary and timely assessments, interventions, and treatments, similar to the subtheme of "advocating for patients" (p. 82) in Eggenberger's (2011).

Similar to Eggenberger's (2011) findings indicating that CNs reported a sense of obligation to be present with, and listen to, nurses, CNs in this study discussed the need to ensure the voices of the nurses were heard in organizational decision making, particularly related to issues pertaining to the provision of safe patient care. In this study, CNs advocated for adequate staffing as well as staff assignments conducive to safe patient care. CNs in this study seemed empowered to let their voices be heard. Assuming the role of advocate was a subcategory that emerged in this study under the category of balancing multiple roles. In this study, CNs reported advocating not only for patients, but also for practice environments that were conducive to safe patient care.

CN participants did not dwell on their lack of power. They used the respect and influence they did have to advocate for sufficient staffing with supervisors and managers. Multiple CNs were also involved in shared governance committees that provided them a voice in decision making at the unit level on issues impacting the quality and safety of patient care.

Lewis (1990) recommended CNs be actively involved with discussions and decisions surrounding proposed change, since CNs were found to have a tremendous influence on the adoption of change. Similar to Lewis' recommendations, having CNs on committees that influence organizational decision-making can help ensure the voices of the frontline staff related to patient safety concerns are addressed when organizational

decisions are made. Drenkard (2010) discussed the role of structural empowerment, including the need for strong nursing leaders who have a voice in organizational decision making impacting patient safety. Vaismoradi et al. (2014) implied that involving nurses in organizational decision making can help nurses feel empowered to promote patient safety in practice. Similarly, Sherman et al. (2011) voiced the need for front line nursing leaders to be professional advocates for nursing.

Patient assignments. A crucial part of the CN role and patient safety identified in this study was delegating workloads and making patient assignments. Delegating workloads and making patient assignments are actions and processes identified in previous literature on the CN role (Bostrom & Suter, 1992; Cathro, 2013; Homer & Ryan, 2013; Matthews, 2010; Sherman et al., 2013; Shermont & Russell, 1996). Factors identified as important when making patient assignment decisions identified in this study included the acuity levels and needs of the patients, the capabilities of the staff, as well as each nurse's current workloads, factors discussed previously in the literature on the patient assignment process (Bostrom & Suter, 1992; Cathro, 2013).

Matthews (2010) identified one aspect of the CN role involves knowing the staff, including their competencies. In Vaismoradi et al.'s (2014) study exploring the nurse leader's role in facilitating safe care, matching the needs of the patients with the capabilities of the nurses was important for creating an environment conducive to patient safety. CNs in this study reported the need to assume a big picture approach of everything that was happening on the unit at a given time with patients and staff to assist them with patient assignment decisions. Similarly, Wilson et al. (2011) described how CNs engage in frequent rounding allowing them to understand the acuity levels of the

patients and determine which nurse would take the next patient. Wilson et al. referred to this process as mindful staffing. Mindful staffing involves balancing the needs of the changing patient acuities, census, and the experience level and availability of nurses (Wilson et al., 2011): processes both reported and observed in this study.

Similar to findings from Bostrom and Suter's (1992) study exploring factors CNs consider when making patient assignments, CNs in this study considered the competencies and capabilities of the nurses. Bostrom and Suter noted experienced CNs were more likely to consider factors beyond patient acuity when making assignments. Similarly, in Connelly, Yoder, et al.'s (2003) study, two critical thinking competencies that related to patient assignments included anticipating staffing requirements based on patients' needs as well as using knowledge of patients and staff to provide care.

CNs in this study also noted the importance of being fair when making patient assignment decisions. One clinical/technical competency noted in Connelly, Yoder, et al.'s (2003) study was to make fair and appropriate delegation and patient assignment decisions. Being fair with delegation decisions was also a leadership skill identified in Nunn's (2008) study. According to Shermont and Russell (1996), perceptions of unfair workloads contribute to low morale, burnout, and job dissatisfaction.

CNs in this study identified insufficient staffing as one of the greatest challenges faced in ensuring the provision of safe patient care, and an issue in which they had little influence or control. Connelly and Yoder (2003) explored barriers and facilitators to the CN role. Staffing, along with the lack of ancillary and support staff, were significant barriers to the effectiveness of the CN role. Similarly, Eggenberger (2011) and Mahlmeister (2006) identified staffing as a significant barrier to effective CN

functioning. Vaismoradi et al. (2014) suggested that when a unit was insufficiently staffed, front line nursing leaders spent most of their time assisting with direct patient care leaving little time for leadership functions and overseeing the functions of the entire unit.

Category #2: Maintaining a watchful eye. CN participants in this study maintained a watchful eye over quality and safe patient care, particularly the following initiatives: fall prevention, pressure ulcer prevention, infection prevention, compliance with core measures, and monitoring equipment. The literature supports the importance of CNs overseeing the quality and safety of patient care. Drenkard (2011) discussed the role of CNs in ensuring accountability with clinical protocols within the context of a safety culture. Furthermore, one theme in Eggenberger's (2011) study was "monitoring for quality" (p. 61) by watching over care provided through frequent rounding on patients and staff and assuming responsibility for the well-being of all the patients on the unit. Sherman et al. (2011) also discussed the need for CNs to oversee nursing sensitive indicators for quality, including fall prevention.

Fall prevention. The most frequently discussed nursing sensitive patient safety indicator discussed by CN participants in this study was fall prevention. CNs in this study reported taking a variety of actions to prevent falls that included working with the house manager to move patients at high risk for falls closer to the nurses' station; checking bed alarms when rounding; educating patients on the importance of bed alarms and calling for assistance prior to getting up; monitoring compliance, and assisting, with hourly rounding; working with the health care team to promote awareness of fall

prevention strategies; and utilizing one to one sitters for those patients most at risk for falls.

Moving patients at risk for falls close to the nurses' station and ensuring adequate staff to monitor high risk patients are fall prevention strategies discussed by CNs in this study supported in the literature (Healey et al., 2004; Rush et al., 2008). Although bed alarms are a commonly used strategy for fall prevention, the literature on the effectiveness of bed alarms in fall reduction shows mixed results (Capezuti et al., 2009; Dacenko-Grawe & Holm, 2008; Shorr et al., 2012). Educating patients on fall prevention initiatives is another fall prevention initiative supported by the literature (Dacenko-Grawe & Holm, 2008; Quigley et al., 2009). The literature supports that frequent rounding on patients, either every hour or every other hour, with a focus on safety can assist in the reduction of falls (Meade et al., 2006; Quigley et al., 2009).

CNs in this study reported informing the entire team during unit huddles, including unit clerks and certified nursing assistants (CNAs), which patients were most at risk for falls and required vigilant monitoring, a fall prevention strategy supported by the literature (Dacenko-Grawe & Holm, 2008; Rush et al., 2008). In addition, when a patient fall occurred, or a near miss, CN participants reported conducting debriefing huddles to discuss factors that may have contributed to the fall and how the fall could have been prevented, a strategy supported by Quigley et al. (2009). One final action CNs reported was utilizing one to one sitters as a fall prevention strategy for those patients most at risk for falls. Sitters may be a useful adjunctive intervention for fall prevention (Donoghue et al., 2005; Giles et al., 2006). However, the literature does not support that the use of

sitters alone reduces falls (Adams & Kaplow, 2013; Lang, 2014; Laws & Crawford, 2013).

Pressure ulcer prevention. To assist in pressure ulcer prevention, CNs in this study engaged in a variety of strategies. These strategies included assessing patients' skin on admission, assisting in the identification of patients at high risk for pressure ulcer development, guiding staff in identifying and documenting pressure ulcers, ensuring appropriate referrals for assessment and treatment, and participating in repositioning patients at risk for pressure ulcer development. The literature supports a multifaceted approach to the prevention of pressure ulcers, consistent with the actions and processes identified and observed by CNs in this study (Baldelli & Paciella, 2008; Barker et al., 2013; Downie, Perrin, & Kiernan, 2013). Sherman et al. (2011) articulated the need for CNs to oversee nursing sensitive indicators for quality, including pressure ulcer prevention. Another patient safety and quality metric CNs identified in this study was infection prevention.

Infection prevention. CNs in this study reported and were observed engaging in actions and processes to prevent the spread of infection. In this study, CNs monitored compliance with infection-prevention strategies; ensured compliance with isolation precautions; and also educated patients, families, and staff about the importance of adhering to isolation precautions. For example, when a patient first exhibited signs of diarrhea, the CN ensured the stool specimen was sent and the patient was appropriately isolated until clostridium difficile was ruled out. Reducing the prevalence of hospital-acquired infections is essential to the promotion of safe patient care (Weeks et al., 2011). Finis and Porche (2005) identified important actions and processes for nursing leaders in

infection prevention that include ensuring the staff are aware of the infection prevention policies and protocols and actively involving staff in infection surveillance and infection prevention initiatives, actions and processes supported by this study.

One additional infection prevention strategy observed involved CNs keeping an audit log of patients with indwelling urinary catheters. Removing indwelling urinary catheters within two days postoperatively for most surgeries is part of the Surgical Care Improvement Project (SCIP) (Drake, 2011). SCIP guidelines are examples of core measures, another subtheme under the category of maintaining a watchful eye.

Core measures. CNs in this study engaged in actions and processes to ensure compliance with core measures. These actions and processes included utilizing checklists for admissions and discharges and conducting chart audits to ensure core measures were addressed. Rainer (2013) articulated the importance of everyone within an organization assuming responsibility for the provision of high quality care that complies with core measures - not just quality departments.

Literature on the CN role supports the need for CNs to engage in actions and processes related to core measure compliance. For example, Mahlmeister (1999) stated the CN role involves assuming responsibility for unit functioning within the context of regulatory and legal issues**.** In addition, both Eggenberger (2011) and Sherman et al. (2011) articulated the need for CNs to oversee compliance with regulatory issues and core measures. Drenkard (2011) also suggested that CNs have an important role in helping to ensure accountability with clinical protocols necessary to keep patients safe.

Equipment. CNs in this study noted the importance of their units having the necessary equipment for the provision of safe patient care. This involves ensuring the

basic equipment, such as beds and IV poles and pumps, are present in the room prior to receiving an admission, to checking the settings on bed exit alarms. One competency under the clinical/technical category in Connelly, Yoder, et al.'s (2003) study involved having knowledge of the use of medical equipment necessary for patient care. Nunn (2008) also noted the need for CNs to be proficient in the use of equipment. In addition, Eggenberger (2011), Mahlmeister (2006), and Vaismarodi et al. (2014) identified the importance of having the necessary equipment in the provision of safe patient care.

Category #3: Working with and leading the health care team. CNs reported and were observed engaging in multiple actions and processes as they worked with, and led, the health care team. These actions and processes included collaborating with all members of the health care team through effective communication and care coordination strategies. CN participants also built high functioning teams through role modeling, instilling trust in the team, and promoting a culture where all staff are responsible for patient safety. CNs in this study described the need to take care of their staff, realizing that in order to provide safe, quality patient care, staff need to be supported and have their needs met.

Collaborating. Being able to effectively communicate and collaborate with all members of the health care team is an essential part of the CN role (Connelly, Yoder, et al., 2003; Eggenberger, 2011; Mahlmeister, 2006; Matthews, 2010; Nunn; 2008; Patrician et al., 2012; Sherman et al., 2011; Wilson et al., 2012). CNs in this study collaborated with patients, families, and all members of the multidisciplinary team. This collaboration helped ensure patients received timely and appropriate treatment and care and that actual or potential patient safety issues were addressed. Eggenberger discussed

how CNs in her study helped maintain collaborative connections as they coordinated patient care, a finding supported in this study.

Maintaining open communication and fostering solid professional relationships with unit managers and house managers was particularly crucial to promoting patient safety according to the CN participants. The unit managers and house managers had the authority to make staffing decisions and also assist CNs with escalating patient safety issues. Findings from Wilson et al.'s (2012) study exploring intrashift staffing decisions made by CNs suggested tactful communication and collaboration with other members of the health care team were essential for assessing workloads and making staffing decisions.

Connelly and Yoder (2003) articulated communication with supervisors as a common barrier or facilitator to the CN role. Furthermore, Mahlmeister (2006) elaborated that the CN role requires effective communication and collaboration with managers as well as with all members of the health care team. Effective communication and collaboration is particularly important when patient safety issues must be escalated (Mahlmeister, 2006), statements supported by the findings of this study.

Some CNs in this study also had an active role on their unit level committees focused on improving the quality and safety of patient care. Being on these committees helped CNs bring quality of care and patient safety issues to the attention of the unit manager and their peers facilitating collaboration, problem solving, and decision making. Drenkard (2011) discussed the importance of having front line nurses involved in organizational decision making through their participation in nursing and multidisciplinary committees.

Building a high functioning team. Building high functioning teams was a subcategory that emerged in this study as a key part of the CN's role to ensure patient safety. CNs suggested that promoting patient safety requires all staff on a unit to be aware of, and actively intervene in, potential or actual patient safety concerns. Connelly and Yoder (2003), Hughes and Kring (2005), and Sherman et al. (2013) all identified facilitating teamwork as an important part of the CN role. In addition, six months after implementation of a permanent and consistent CN role, Hughes and Kring reported significant improvements among nurses in perceptions of teamwork and conflict resolution on a 15-question Likert style survey. Themes related to leading teams were also identified by Connelly, Yoder, et al. (2003), Eggenberger (2011), Nunn (2008), and Sherman et al. (2011).

Sherman et al. (2013) discussed how, despite multiple challenges, CNs reported satisfaction in their roles by assisting with staff development, maintaining patient satisfaction, and leading their teams. Similar to Sherman et al.'s findings, CNs in this study discussed how working with high functioning teams was a source of job satisfaction. However, CNs in this study also noted having to deal with challenging staff personalities and staff conflict. Patrician et al. (2012) noted that dealing with staff with poor attitudes and those demonstrating lack of accountability as challenges to the CN role. Furthermore, barriers to the CN role identified in Connelly and Yoder's (2003) study included being tested by the staff and working with unsupportive staff. To help CNs learn to deal effectively with these challenges, Eggenberger (2011) and Sherman et al. articulated the need for CNs to receive education on conflict resolution.

Taking care of staff. The CNs in this study believed an important part of keeping patients safe was ensuring their staff had safe working conditions, were provided breaks, and were cared for. These findings are similar to Eggenberger's (2011) theme of "looking after nurses." Participants in Eggenberger's study discussed how their goal on busy shifts was to keep everyone safe - patients and staff - consistent with findings from this study. Human relations competencies identified by Connelly, Yoder, et al. (2003) included demonstrate caring for and protecting staff, along with supporting the personal needs of staff. Sherman et al. (2011) identified leadership qualities for front line leaders that included being nonjudgmental, caring, and available, consistent with findings from this study.

The discussion of findings to answer RQ #1 suggests this study's results support findings from previous research and literature published on the CN role. In addition, the findings from this study add new insights into the specific actions and processes CNs engage in to keep patients safe.

Study Findings RQ #2: Building the Emerging Substantive Theory

The researcher used the process of constant comparison and the data analysis steps of microanalysis, open coding, axial coding, and selective coding to categorize findings from interviews and observations with CNs. The categorization of findings helped to answer RQ #2: What substantive theory might emerge from the data collected during interviews and observations with CNs?

The substantive theory, *Navigating through Chaos: CNs balancing multiple rules, maintaining a watchful eye and working with and leading the health care team to keep patients safe,* emerged from the data collected through interviews and observations with

CNs. The theory incorporates the core concept/central phenomenon of navigating through chaos as well as the three main categories: balancing multiple roles, maintaining a watchful eye, and working with and leading the health care team.

The following are statements of relationships between categories and subcategories that helped formulate more in-depth explanations of the study findings. The relationships identified in axial coding facilitated the identification of a core concept, or central phenomenon, in selective coding. CNs must make sense of complex clinical situations while balancing the needs of the patients within the context of available resources for a given shift. In order to keep patients safe, CNs must be knowledgeable about the patients on their units and their staff, and take care of patients as well as the staff. This means doing what they have control over to make sure the nurses have patient assignments that are conducive to providing safe patient care. Or, when circumstances are outside of the CNs' control - such as with multiple change of shift admissions, short staffing and lack of assistive personnel - CNs take a hands on approach and provide direct interventions, are resource people for staff, and advocate for the necessary resources and information needed to help keep patients safe.

Providing a watchful eye over patient safety entails having a big picture approach and being aware of everything that is going on at a given time on a unit. This big picture approach includes balancing multiple roles and overseeing key patient safety initiatives while working with and leading the health care team. CNs collaborate with nurses, other members of the multidisciplinary health care team, and patients' families as they work with, and lead, the health care team. Knowing the patients, and knowing both the

personalities and the capabilities of staff, can assist CNs in making safe and effective patient assignments.

To keep patients safe, CNs must balance multiple roles, maintain a watchful eye over key patient safety initiatives, and work with and lead the health care team. CNs' roles in keeping patients safe take place within a complex environment. CN roles are multifaceted and include direct interventions, acting as a resource, educator, and advocate, and also making effective decisions about the assignment of personnel within the realm of available resources.

Key patient safety initiatives in which the CN plays an integral role include fall prevention, pressure ulcer prevention, infection control, adherence to core measures, and monitoring equipment needed for safe patient care. To promote and maintain a safe environment, CNs collaborate, build high functioning teams, and take care of their staff. High functioning teams can work with the CN to provide a watchful eye over patient safety as CNs balance multiple roles.

The final stage of selective coding involves the identification of one core concept, or central phenomena, around which the theory revolves. This core concept, or central phenomena, is navigating through chaos. To keep patients safe, CNs must navigate through the chaos of complex health care environments as they balance multiple role functions, maintain a watchful eye over key patient safety initiatives, and work with and lead the health care team. Figure 1 depicts the substantive theory. Figure 1 includes a compass graphic. The compass represents the navigational role CNs assume within the context of patient safety.

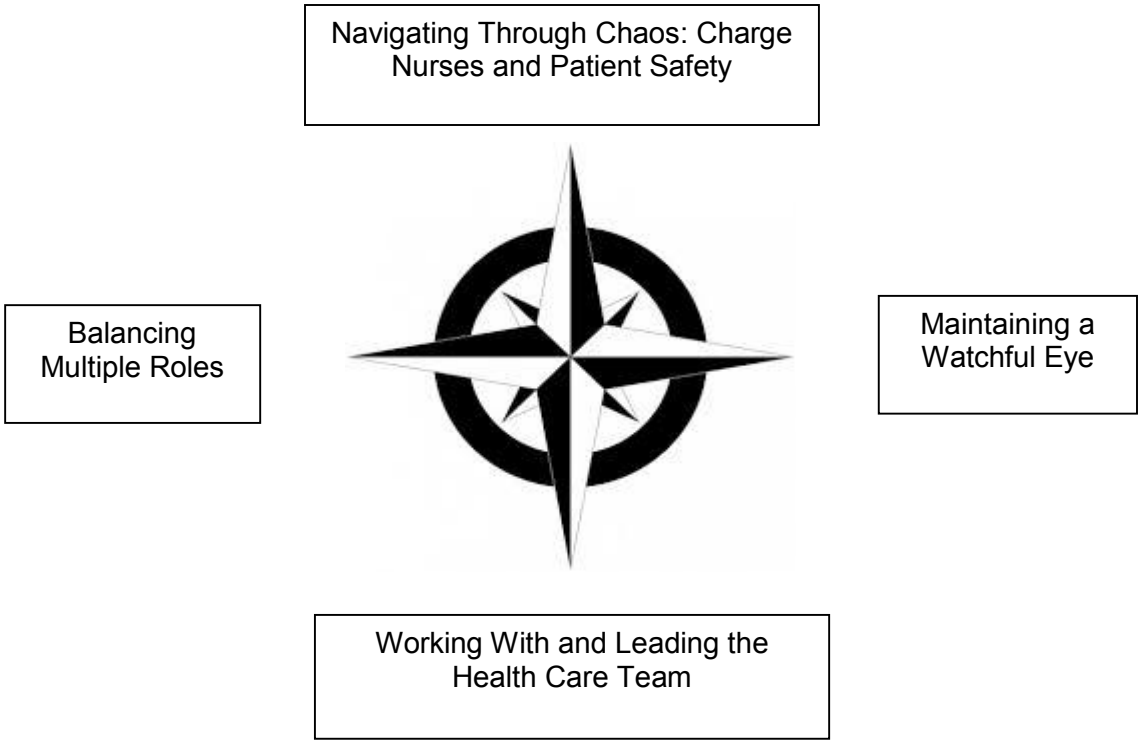

Figure 1. Substantive theory - Navigating through chaos: Charge nurses and patient safety.

Relationship to the Theoretical Framework: Metaparadigm of Nursing

As previously discussed, nursing knowledge is structured around the metaparadigm concepts of person, health, environment, and nursing (Fawcett, 1984, 2005). Conducting research aimed at advancing nursing knowledge by generating a substantive theory pertaining to actions and processes CNs implement to keep patients safe fits within the broad, conceptual framework provided by the metaparadigm of nursing. This section includes a brief discussion on how the findings from this study fit within the metaparadigm of nursing concepts: person, health, environment, and nursing.

Person. Within the context of this study's findings, person refers to hospitalized patients on medical-surgical units. The core category/central phenomenon relates to the

metaparadigm concept of person since the safety and well-being of the patients on their units is the focus of the CN role. CNs make sense of complex clinical situations while balancing the needs of the patients within the context of available resources for a given shift. In order to keep patients safe, CNs must be knowledgeable about the patients on their units and their staff, and take care of patients as well as the staff.

A finding that emerged from this study is that, in addition to ensuring the safety and well-being of the patients on their units, CNs also look out for the safety and well-being of the staff. Therefore, within the context of this study's findings, the concept of person also includes the staff that care for the patients on the units.

Health. For the purposes of this study, health was defined as keeping patients safe and striving to eliminate preventable errors. Maintaining a watchful eye is the main category that most closely relates to the metaparadigm concept of health. To keep patients safe and strive to eliminate preventable errors, CNs in this study maintained a watchful eye over patient safety initiatives that included fall prevention, pressure ulcer prevention, infection prevention, ensuring compliance with core measures, and monitoring equipment.

Environment. For the purposes of this study, environment was defined as medical-surgical nursing units. Working with and leading the health care team is the main category that most closely relates to the metaparadigm concept of environment. As discussed in chapter 4, there are multiple team members on medical-surgical units that work together and collaborate to keep patients safe. Sometimes the CN works collaboratively with the team and sometimes the CN is a leader of the team on the medical-surgical unit. Building a high functioning team helps to facilitate safe patient

care. An important part of maintaining an environment that is conducive to patient safety is ensuring that staff are taken care of too.

Nursing. For the purposes of this study, nursing was defined as the CN role and the specific actions and processes CNs implement to keep patients safe. Balancing multiple roles is the main category that most closely relates to the metaparadigm concept of nursing. As discussed in chapter 4, CNs assume multiple role functions to help keep patients safe. These role functions include performing direct interventions, being a resource, educator, and advocate, as well as making safe patient assignments.

Relationship of Study Findings to Other Relevant Theories

Additional theories pertinent to patient safety with relevance to the findings of this study include high reliability theory, normal accident theory, theory of human error, and structuration theory. These theories were introduced in the literature review. This section includes a brief discussion of how each theory related to this study's findings.

High reliability theory (HRT). Industries that remain virtually error free, despite complex and high-risk operations include naval aircraft carriers, air traffic control, and nuclear power operations (LaPorte & Consolini, 1991). These industries do not tolerate failure and place the achievement of high reliability operations over the achievement of short-term goals (LaPorte & Consolini, 1991).

Wilson et al. (2011) used HRT as a theoretical framework for their study exploring the staffing decisions made by CNs during a shift. Decisions made by CNs can significantly influence patient safety outcomes, similar to the decisions made by front line leaders in other high-risk industries (Wilson et al., 2011). Similar to Wilson et al.'s findings, CNs in this study engaged in continuous decision-making to keep patients safe.

Specific to the patient assignment making process, CNs in this study made patient assignment decisions based on the needs of the patients and the available staffing resources, along with the capabilities and competencies of the staff. Other high reliability actions and processes taken to keep patients safe included rounding on all patients to assess their safety and understand their needs, checking bed alarms, double checking discharge instructions, and monitoring compliance with core measures.

Theory of human error. Reason's (1990) theory of human error assumes errors do not occur because of human error alone, but rather result from the interplay of complex system factors (Hinton Walker et al., 2006; Reason, 1990). CNs in this study had an understanding that organizational and system issues, such as staffing levels, receiving new patients at the change of shift, and the physical layout of the units, had the potential to be detrimental to patient safety. When an error or near miss occurs, CNs discussed the need to engage in a fact finding investigation or debriefing to identify what factors contributed to the event, rather than placing blame on an individual. Wilson et al. (2012) discussed how CNs have important insights on patient safety issues due to their close presence to patients as well as their knowledge of multiple potential safety concerns that may be happening on a unit at a given time.

Normal accident theory (NAT). Similar to the theory of human error, NAT acknowledges that the interaction of complex technologies, procedures, and the influence of human factors, cumulate to cause entire systems to break down leading to errors (Tamuz & Harrison, 2006). Rijpma (1997) discussed how errors are inevitable within complex and tightly coupled systems. Tight coupling refers to dependency of one system on another, or when one part of the system affects another (Rijpma, 1997).

Waring et al. (2006) found partial support for Perrow's NAT in their study exploring patient safety issues in the operating department. Waring et al.'s findings revealed the need to examine a big picture approach of the entire organizational system, realizing the entire system influences care delivered in one unit or department. Similar to Waring et al.'s study, findings from this study suggest that CNs must be able to work within complex systems. The CN role involves having an awareness of system-wide issues that may compromise patient safety, while communicating and collaborating with multiple disciplines and departments.

Structuration theory. Giddens (1984) stated that structure and human action co-exist and interact to produce social phenomena. Structure both supports and limits individual action (Giddens, 1984). The findings from this study support structuration theory since resources and organizational policies were factors that influenced the CN's role and patient safety. Organizational policies included a hospital-wide focus on fall prevention initiatives. Resources included having sufficient staff and equipment, along with support when taking necessary actions to keep patients safe.

For example, multiple CNs in this study cited inadequate staffing as their greatest challenge in the provision of safe patient care. The organizational structure and procedures within this hospital did not allow CNs the power to address staffing issues. Instead, they had to make decisions on how best to delegate assignments within the context of the human resources provided for the shift. In addition, having sufficient quantities of functioning equipment was also a subcategory in this study under the category of maintaining a watchful eye. Groves et al. (2011) discussed the application of structuration theory to patient safety. Groves et al. articulated: "The allocative resources

nurses draw upon could include access to adequate, skilled and experienced staff to perform tasks required for patient safety and appropriate supplies and technology to carry out those tasks" (p. 1851).

Limitations

The relatively small sample size limits generalizability of findings. However, the sample size was sufficient for the purposes of this grounded theory study since theoretical and data saturation were achieved. The researcher has over six years of experience working as a CN and was a CN working in the hospital where the study was conducted at the time of the study. This may also have resulted in some participants feeling obligated to participate, although the researcher did not work on any of the medical-surgical units and was not in a supervisory role over any study participants.

Working in the hospital at the time of the study meant the researcher was aware of patient safety initiatives that had received attention during her time in this role. For example, this hospital had a fall prevention campaign in the two years prior to this study. The hospital-wide focus on fall prevention may have influenced the actions and processes CNs take to prevent patient falls. Given the researcher was a CN, she may have overlooked certain actions or processes CNs engaged in during the observation part of the data collection, particularly routine actions or processes that an outside observer may have noted to be significant. In this study, all CN participants had at least a baccalaureate level education which may have contributed to having knowledge of leadership principles, evidence-based practice, and the importance of communication and collaboration (American Association of Colleges of Nursing, 2008).

Recommendations for Nursing Practice

As front line nursing leaders, CNs engage in numerous actions and processes to keep patients safe. Recommendations for nursing practice to maximize the CN role and patient safety include the following: conducting CN-led safety huddles each shift, ensuring CNs remain up to date with the evidence-base surrounding patient safety initiatives and patient assignment processes, and providing CNs with the necessary information to complete their work,

Safety huddles provide an opportunity to inform staff of high risk patients and also instill accountability among staff that everyone is responsible for patient safety (Griffin & Madigan, 2007). High risk patients may include those who are most at risk for falls and those who are most acutely ill and require vigilant monitoring. In addition, safety huddles provide an opportunity to inform all unit staff about any equipment or staffing issues, and organizational information that is pertinent to patient safety. If a recent patient safety event - such as a fall, pressure ulcer, or hospital-acquired infection - has occurred on the unit, the CN can discuss the circumstances of the event and contributing factors.

Ensuring CNs remain current on the evidence-base surrounding patient safety initiatives and patient assignment processes is essential. Since CNs take leadership roles in patient safety initiatives, they need access to the best current evidence to make decisions. For example, a routine practice discussed by CNs in this study was placing one to one CNA sitters with patients most at risk for falls. The evidence-base surrounding the effectiveness of sitters is evolving. Although further research is needed, the current literature does not suggest that the utilization of one to one sitters leads to a reduction in patient falls (Adams & Kaplow, 2013; Laws & Crawford, 2013), particularly

if there is no longer a CNA available to assist with care of the other patients. Staying up to date on current research on patient safety initiatives such as fall prevention can assist CNs in making the best decisions for the safety of all the patients on the unit.

An important part of the CN role noted in this study is making patient assignments that are conducive to safe patient care. Providing CNs with a tool to guide patient assignment decisions, such as the practical guide to patient assignments (Cathro, 2013), can assist CNs in matching the needs of patients with the competencies of nurses. CNs should also remain up to date with new literature that advances the evidence-base of the patient assignment process.

Mahlmeister (2006) suggested many experienced nurses are reluctant to assume the CN role. One CN in this study also provided the example of an experienced nurse colleague who refused to assume the CN role due to the lack of information provided to CNs assist them in their work, a phenomena the researcher has also encountered in her practice. This makes it challenging for nurses to step into this role on an as needed basis. Mahlmeister identified the importance of CNs having knowledge of procedures, protocols, and activating the appropriate chain of command when patient safety issues arise. Having an easy to access tool - such as an internal webpage - with pertinent and current information can help provide CNs with the information they need. For example, if a patient is noted to have a hospital-acquired pressure ulcer, the CN would be able to access information guiding him/her to place a wound care consult, notify the physician and manager, and place the patient on an appropriate support surface.

Recommendations for Nursing Leadership

Nursing leaders have significant influence on the patient safety culture in the hospital setting (Feng et al., 2011). Therefore, it is important for nursing leaders to

display and role model their commitment to patient safety (Feng et al., 2011). Recommendations for nursing leadership based on the findings from this study include clearly defining CN role responsibilities, addressing staffing shortages, providing mentoring opportunities, ensuring nursing managers and senior nursing leaders are available to support CNs, including CNs in shared governance committees, and ensuring the personal and professional needs of CNs are acknowledged and supported.

CNs discussed feeling they were pulled in many different directions while balancing expectations of their managers, needs of the staff, with the always changing and dynamic needs of patients and families. A recommendation for nursing leaders is to ensure CNs have clearly defined job descriptions and clearly delineated role responsibilities, particularly role responsibilities related to patient safety so they can effectively prioritize their time. However, to meet these role responsibilities, CNs require adequate resources, particularly human resources.

Ensuring CNs have the necessary time and support to complete their work by having unit secretaries, CNAs, and adequate nursing staffing levels is essential to patient safety. Staffing shortages were identified as a significant challenge for the CN role and patient safety by multiple CNs in this study. CNs in this study discussed role conflicts as they tried to ensure the needs of the staff were met by providing breaks, assisting with direct patient care, as well as performing leadership duties that included conducting safety and customer service rounds, performing audits, and making patient assignments.

It is imperative for nursing leaders to advocate for sufficient staffing, including nurses and support personnel. When units do not have enough nurses and support personnel, such as CNAs and unit clerks, CNs may be responsible for fulfilling these

roles as well as their own. Mahlmeister (2006) articulated: "A failure to address staffing issues will result in role overload, job dissatisfaction, and rapid burnout for charge nurses" (p. 123). A recommendation from this study is to provide a breaker or resource nurse for each unit on each shift to assist with providing staff breaks, allowing CNs to oversee the unit and focus on leadership activities.

Although the CNs in this study all had at least two years of experience in their roles, coaching and mentoring programs for CNs can provide much needed support and guidance when nurses transition into this complex and important role as well as on an ongoing basis (Connelly & Yoder, 2003). It is recommended that health care organizations implement formal mentoring programs with clear expectations for mentors and time allotted for meetings and mentoring sessions (Thomas, 2012). These mentors can be experienced CNs, or nurse managers who have previously assumed the CN role.

As articulated by Connelly and Yoder (2003) and Patrician et al. (2012), CNs have identified the desire to have contact with, and support from, nursing unit managers and senior nursing leaders. This contact and support can assist CNs in understanding larger organizational issues that impact the CN role and CN decision making. It is recommended that nurse managers have a presence on their units and interact with the CNs as often as possible to stay up to date with what is happening on the unit and ask CNs if they have any questions or require their assistance. If nurse managers are offsite, they can call to check in with their CNs every shift or on an as-needed basis.

Due to their position on the front lines of health care and their knowledge of patients, staff, and the dynamics of complex health care environments, CNs have valuable insights to share about patient safety issues (Wilson et al., 2012). Including CNs

on shared governance committees can ensure these valuable insights are shared with organizational decision makers. Participating in shared governance committees can also empower CNs and facilitate organizational engagement and collaboration (Bednarski, 2009; Dearmon, Riley, Mestas, & Buckner, 2015; Drenkard, 2011).

CNs ensure that their staff are taken care of. If is therefore important for nurse managers and senior nursing leaders to take care of their CNs by providing opportunities for continuing education and promoting work/life balance. Mahlmeister (2006) also articulated the importance of offering CNs support, role development, and reward - particularly within the context of patient safety initiatives. A recommendation for nursing leaders is to work with staff educators to offer continuing education workshops for CNs on patient safety initiatives.

Turkel and Ray (2004) discussed how self-care strategies can be included in job orientations and continuing education workshops. If is recommended that nurse managers and senior nursing leaders take time to thank CNs for their efforts and acknowledge patient safety accomplishments - such as celebrating a period of time without a fall, pressure ulcer, or hospital-acquired infection. These actions can help ensure CNs' efforts to promote patient safety are recognized.

Recommendations for Nursing Education

CNs are often unprepared for the challenges of their roles (Connelly & Yoder, 2003; Eggenberger, 2011, 2012; Flynn et al., 2010; Nunn, 2008). Nurse educators can assist in helping to prepare future and current nurses to effectively assume the CN role by providing exposure to the CN role - including specific CNs actions and processes identified in this study into nursing education curricula - as well as having students design and implement patient safety and quality improvement initiatives.

Content on patient safety, quality care, and leadership roles and responsibilities is a necessary component of all health care education, including nursing (American Association of Colleges of Nursing, 2008; Greiner & Knebel, 2003; Interprofessional Education Collaborative Expert Panel, 2011; QSEN, n. d.). Providing exposure to the CN role in entry level programs as well as in graduate nursing programs may help facilitate understanding of the CN role and prepare students to fulfil this role in the future. Providing students the opportunity to work with CNs during their clinical rotations is one way to provide students with exposure to this complex role.

The specific actions and processes identified in this study can be incorporated into theoretical and practical nursing education curricula, particularly into clinical nursing leadership courses. For example, entry to practice and graduate level nursing curricula can emphasize the need for CNs to balance multiple roles within the context of patient safety. These roles include performing direct interventions, being resource people, educators, advocates, as well as making patient assignments conducive to safe patient care. Including content on effective multidisciplinary collaboration, team building, and the need to take care of nursing colleagues and promote self-care are additional recommendations for nursing curricula supported by the findings from this study.

To prepare future CNs to take on active roles in improving patient safety, it is recommended that students be introduced to the CN role in specific patient safety initiatives. These initiatives include fall prevention, pressure ulcer prevention, infection control, and core measures. Providing students with opportunities to apply knowledge of these patient safety initiatives by designing and implementing quality improvement projects in the clinical setting is recommended. For example, students could design and

implement an initiative aimed at reducing the transmission of clostridium difficile in the hospital setting by focusing on health care providers' hand hygiene practices.

Recommendations for Nursing Research

Due to the lack of nursing research specific to the CN role (Connelly, Nabarrete, et al., 2003; Sherman, 2005; Sherman et al., 2011), there are many opportunities to advance the knowledge base of this important role. Recommendations for nursing research including replication of this study; exploring relationships between specific CN actions and processes and patient safety outcomes; examining the concepts of resiliency, teamwork, and staff safety as they relate to the CN role; as well as exploring the impact of patient assignment processes, including the timing of admissions and transfers, on patient safety.

This study can be replicated at other hospitals, including those without a consistent or well-established CN role. This study can also be replicated in countries other than the United States. Since the CN role may vary among hospital units and departments as well as practice settings, it is recommended that this study be replicated on specialty units, such as intensive care, emergency, pediatrics, labor and delivery, as well as practice environments outside of acute care, such as ambulatory surgery centers and long term care centers.

The substantive theory, *Navigating through Chaos,* can also provide a guide for further research, particularly quantitative research, to study relationships between specific CN actions and processes and patient safety outcomes. For example, a correlational study could examine the CN practice of monitoring adherence to fall prevention initiatives, such as the use of bed exit alarms and compliance with hourly rounding, and

corresponding fall rates. An additional example would involve a correlational study to examine the relationship between CNs rounding on patients at high risk for skin breakdown to assess for adherence to pressure ulcer prevention initiatives and corresponding rates of hospital-acquired pressure ulcers.

The CNs in this study reported and displayed significant resiliency while balancing multiple roles and working within complex environments. One recommendation for further research is to explore the concept of resiliency from the perspectives of CNs. Exploring how CNs build high functioning teams is also a topic for future research based on the findings from this study. Since a major finding from this study related to how CNs oversee nurses' safety and the environment of care, a future study could explore these phenomenon in further detail.

Additional recommendations for research include advancing the knowledge base on the CN role in making patient assignments to explore how patient assignment decisions influence patient safety outcomes. Since CNs in this study noted change of shift admissions and transfers as a potential threat to patient safety, an additional research recommendation is to explore the impact of unit admissions and transfers during change of shift on patient safety outcomes. Table 8 summarizes the recommendations for nursing practice, leadership, education, and research.

Table 8

Summary of Recommendations

Nursing Practice	Nursing Leadership	Nursing Education	Nursing Research
Conduct CN led safety huddles every shift	Clearly define CN role responsibilities related to patient safety	Provide exposure to the CN role in entry level and graduate nursing programs	Replicate this study in other hospitals, countries, specialty units, and practice settings
Update CNs on evidence-based patient safety initiatives and patient assignment processes	Address staffing shortages	Incorporate content on CN role functions related to patient safety in clinical nursing leadership curricula	Explore relationships between specific CN actions and processes and patient safety outcomes (for example, checking bed alarms and incidences of falls)
Provide CNs with the information they need to complete their work	Provide mentoring opportunities and nursing management/leadership support for CNs	Have students design and implement patient safety and quality improvement initiatives	Explore the concepts of resiliency, team building, and staff safety as they pertain to the CN role
	Include CNs on shared governance committees		Explore the CN role in making patient assignments, including how patient assignments influence patient safety outcomes
	Ensure the personal and professional needs of CNs are acknowledged and supported		Explore how change of shift admissions or transfers impact patient safety

Implications of the Findings

This study provides an original contribution to nursing science by providing a substantive theory regarding the CN role and patient safety. Strauss and Corbin (1998) indicated a theory differs from a set of findings since a theory provides an explanation of phenomena necessary to advance knowledge. Grounded theories also serve as the basis for future qualitative and quantitative studies (Strauss & Corbin, 1998). This substantive theory can serve as the basis for studies that explore relationships between specific actions and processes CNs implement and corresponding patient outcomes. The substantive theory can also guide CN job descriptions, serve as the basis for CN orientation and training, and empower CNs to promote patient safety in practice.

Summary and Conclusions

This grounded theory study explored the actions and processes CNs on medical-surgical inpatient units implement to keep patients safe. Patient safety is a significant problem globally. As front line leaders, CNs have key roles in keeping patients safe. The findings from the first research question articulated the actions and processes that CNs implement to keep patients safe. These actions and processes fall into three main categories consisting of balancing multiple roles, maintaining a watchful eye, and working with and leading the health care team. The multiple roles CNs assume include engaging in direct interventions; assuming the roles of resource, educator, and advocate; and making patient assignments within the context of available resources. CNs maintain a watchful eye over unit functioning as well as fall prevention, pressure ulcer prevention, infection control, core measures, and equipment. Working with and leading the health care team requires collaborating, building a high functioning team, and taking care of staff.

The second research question yielded a substantive theory pertaining to how CNs keep patients safe. The substantive theory that emerged was *Navigating through Chaos: CNs balancing multiple rules, maintaining a watchful eye, and working with and leading the health care team to keep patients safe.* The theory from this study fits within the existing nursing knowledge defined by the person, health, environment, and nursing concepts of the metaparadigm of nursing (Fawcett, 1984, 2005).

Maximizing the potential of the CN role and patient safety requires adequate staffing, strong nursing leaders committed to patient safety, mentoring, shared governance structures, and the provision of education and ongoing support for those who assume this challenging front line leadership position. CNs have knowledge of patients, staff, and the dynamics of complex health care environments putting them in an opportune position to influence patient safety. Including the CN role in knowledge development related to patient safety is imperative. Although the CN role is varied and complex, a commitment to patient safety is always at the center of this important role. As CN3 articulated: "The CN role. I told you everything - you do everything. Patient safety - that's always, of course, number one."

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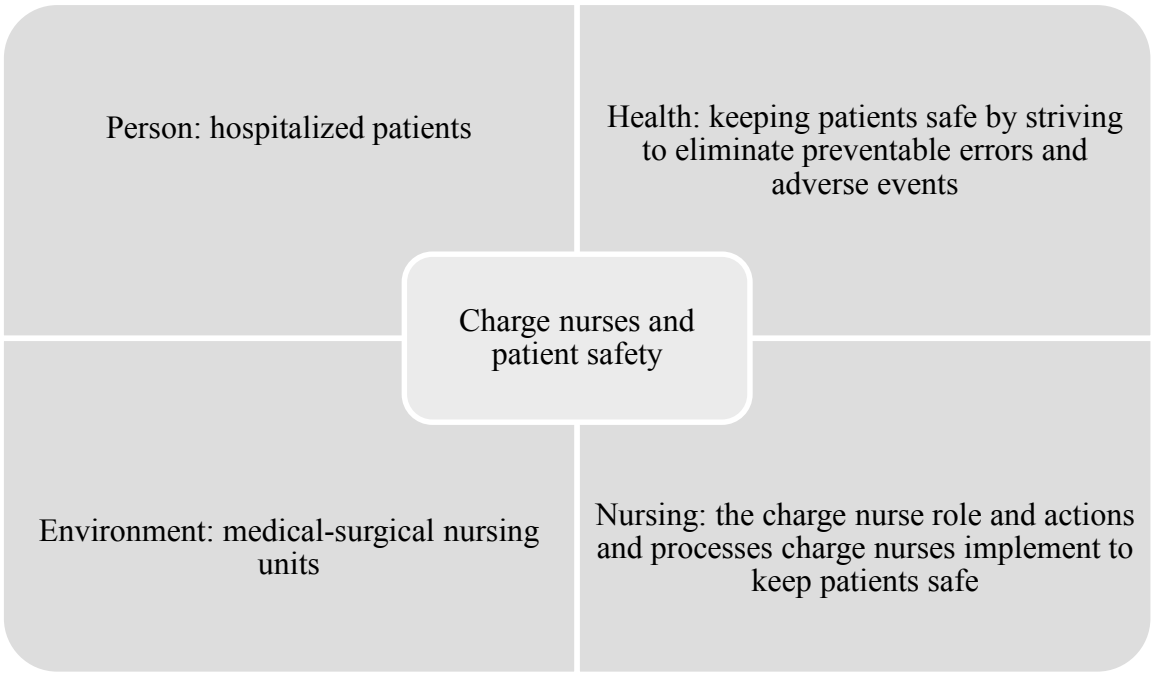
Appendix A

Theoretical Framework



Adapted from Fawcett's (1984, 2005) metaparadigm of nursing.

Appendix B

IRB Approval from the Health Care Organization

Approval Notice

Name of Health Care Organization

Institutional Review Board

Name of Health Care Organization

September 03, 2014

Principal Investigator(s)

Heather Cathro,

Co-Investigator(s)

None

Study Title: Charge nurses and patient safety: A qualitative, grounded theory study (#10439) Study Expiration Date: **08/25/2015**

On **09/03/2014**, a subcommittee of the (Name of Health Care Organization) Institutional Review Board (IRB) reviewed and approved your new study until 08/25/2015.

In accordance with the requirements for research activities that present no more than minimal risk to subjects set forth in 45 CFR 46.110 the study referenced above qualified for expedited review under the following research category:

- Category 7: Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group,

program evaluation, human factors evaluation, or quality assurance methodologies

Approved/Accepted Materials:

Title	Version Number	Version Date	Outcome
Introductory Letter Aug 28	Version 1.0	null	Approved
Introductory Letter Email Script Aug 28	Version 1.0	null	Approved
Demographic Questions	Version 1.0	08/24/2014	Approved
Recruitment Flyer	Version 1.0	08/24/2014	Approved
Telephone Script	Version 1.0	08/21/2014	Approved
Poster for Observations	Version 1.0	08/01/2014	Approved
Premises Recruitment and Name	Version 1.0	08/01/2014	Approved

The IRB also approved the proposed consent form(s) as revised by the IRB.

The finalized consent form(s) will be finalized in the consent form history queue. If you have any questions or need any information regarding the consent form(s), please contact (Name of Health Care Organization)

Principal Investigator (PI) is required to:

- Review the document entitled HIPAA Privacy Rule Instructions for Researchers.
- Submit a complete progress or final report of research activities. And if applicable,
- Submit for IRB review modifications to the research and/or IRB approved research documents.
- Submit Adverse Event report(s) according to IRB policies and procedures and consistent with federal regulations.
- Submit Protocol Violation report(s) and other Unanticipated Problem Reports according to IRB policies and procedures and consistent with federal regulations.

Sincerely,

Name of Contact with the Institutional Review Board for the Health Care Organization

Appendix C

Institutional Review Board (IRB) Approval Notice

University of Phoenix

Date 11-19-2014

Dear **Heather Cathro**:

The role of the University of Phoenix Institutional Review Board (IRB) is to review research studies proposed by students, faculty and others to determine compliance with federally mandated regulations and local requirements regarding protection of human subjects in research studies conducted in accordance with University policies. Your IRB Application for the research study titled ***Charge nurses and patient safety: A qualitative, grounded theory study*** was recently reviewed by the Board. I am pleased to confirm that the Board has determined your IRB Application is approved and your study is determined to be exempt. This means you may proceed with data collection.

Please understand that this approval is subject to the following:

1. The approval is valid for one year from the date of this communication. If your research study is not completed by one year from the date of this communication, the approval will expire and you must resubmit a completed "Request for IRB Time Extension" form and an updated copy of your IRB Application. For further information regarding this process, please reference the IRB Advisement Tool. All advisement tools can be found on the SAS Web within eCampus.

2. IRB approval for your research study is based upon the information you provided in your IRB Application. If any aspects of your research study change significantly (such as a change in scope, data collection sites, etc.), you must notify the Board of the changes and request approval for continuance of the research under the new conditions. This can be done through the "IRB Change Request for Previously Approved Study" form. Please consult with your Dissertation Chair if you have a question as to whether a change you have made requires Board review and approval.

3. Any conditions that may be associated with this approval decision must be satisfied before data collection commences. Notification of fulfillment of conditions to the Board is required and Board concurrence is expected. Notification may be done by contacting the Board at: IRB@phoenix.edu.

4. Please retain this communication as documentation of IRB approval of your study.

5. Any conflict of interest that may occur with regard to your study or your role as the primary researcher must be reported promptly to the IRB.

6. Permission to use published surveys, materials, private databases, or other records must have the explicit approval of the author/owner.

7. Any tape recording associated with data collection must be explicitly stated as part of the Informed Consent to which subjects must agree.

8. Individual identity protection must be maintained and separation of Informed Consent from the primary data collection instrument is required.

If you have any questions about human subject protection in research, please refer to the CITI web site (www.citiprogram.org) or contact the University of Phoenix IRB at IRB@phoenix.edu. Best wishes for the successful completion of your study.

Sincerely,

Institutional Review Board

Appendix D

Introductory Letter

Dear Potential Research Participant,

You are receiving this letter because you work as a charge nurse on a medical-surgical nursing unit. Charge nurses are front line leaders in health care who have important roles in keeping patients safe.

My name is Heather Cathro, and I have worked as a charge nurse for five years. As part of my doctoral nursing program requirements at the University of Phoenix, I am conducting a research study titled: *Charge nurses and patient safety: A qualitative, grounded theory study*.

I am recruiting approximately 20 charge nurses and I need your help. The purpose of the research study is to explore actions and processes charge nurses implement to keep patients safe. Results from this study may inform charge nurse job descriptions, serve as the basis for charge nurse orientation and training, and empower charge nurses to promote patient safety in practice.

This research study is important because keeping patients safe is a key priority in health care. As a charge nurse, you have important knowledge about how to keep patients safe while in the hospital.

Participation involves a one-on-one interview at a time convenient for you that will last approximately one hour. The interview begins with a very brief demographic questionnaire that takes about one minute to complete. After the demographic questionnaire, you will be asked questions about how charge nurses keep patients safe. With your permission, the interview will be audio recorded. Following the interview, the

researcher may ask if you are willing to be observed for approximately two hours while working as a charge nurse at a time determined by you, your manager, and the researcher. Following the observation, a brief follow up interview lasting less than 30 minutes may be necessary to clarify actions or processes observed during the observation. There is no potential risk to participating in this study. Instead of using your name, you will be given a code to maintain confidentiality and respect your privacy. You may withdraw from the study at any time without penalty. The research results will be published, but your personal identity will remain confidential.

I would value and appreciate your participation. To acknowledge your time and as a small token of appreciation, I will provide you a $15 Starbucks gift card at the completion of our interview. Please feel free to contact me via email (email address) or by phone (XXX-XXX-XXXX) if you are interested in participating or if you have questions about the study.

Thank you,

Heather Cathro

University of Phoenix

Doctoral Nursing Student

Appendix E

Introductory Letter Email Script

Dear Potential Research Participant,

You are receiving this email because you work as a charge nurse on a medical-surgical nursing unit. Charge nurses are front line leaders in health care who have important roles in keeping patients safe.

My name is Heather Cathro, and I have worked as a charge nurse for five years. As part of my doctoral nursing program requirements at the University of Phoenix, I am conducting a research study titled: *Charge nurses and patient safety: A qualitative, grounded theory study*.

I am recruiting approximately 20 charge nurses, and I need your help. The purpose of the research study is to explore actions and processes charge nurses implement to keep patients safe. Results from this study may inform charge nurse job descriptions, serve as the basis for charge nurse orientation and training, and empower charge nurses to promote patient safety in practice.

This research study is important because keeping patients safe is a key priority in health care. As a charge nurse, you have important knowledge about how to keep patients safe while in the hospital.

Participation involves a one-on-one interview at a time convenient for you that will last approximately one hour. The interview begins with a very brief demographic questionnaire that takes about one minute to complete. After the demographic questionnaire, you will be asked questions about how charge nurses keep patients safe. With your permission, the interview will be audio recorded. Following the interview, the

researcher may ask if you are willing to be observed for approximately two hours while working as a charge nurse at a time determined by you, your manager, and the researcher. Following the observation, a brief follow up interview lasting less than 30 minutes may be necessary to clarify actions or processes observed during the observation. There is no potential risk to participating in this study. Instead of using your name, you will be given a code to maintain confidentiality and respect your privacy. You may withdraw from the study at any time without penalty. The research results will be published, but your personal identity will remain confidential.

I would value and appreciate your participation. To acknowledge your time and as a small token of appreciation, I will provide you a $15 Starbucks gift card at the completion of our interview. Please feel free to contact me via email (email address) or by phone (XXX-XXX-XXXX) if you are interested in participating or if you have questions about the study.

Thank you,

Heather Cathro

University of Phoenix

Doctoral Nursing Student

Appendix F

Telephone Script

Thank you for calling and expressing interest in my study, *Charge nurses and patient safety: A qualitative, grounded theory study.* How did you find out about the study and receive my contact information? From a flyer posted on your unit? From a colleague or other source?

Could I please confirm with you that you are either a full-time or part-time (relief) charge nurse on a medical-surgical unit and interested in finding out about the study?

(If yes to both, follow script below).

(If no, thank potential participant for their time and interest, but explain that this study is open to full-time or part-time (relief) charge nurses on medical-surgical units).

The purpose of the research study is to explore actions and processes charge nurses implement to keep patients safe. Results from this study may inform charge nurse job descriptions, serve as the basis for charge nurse orientation and training, and empower charge nurses to promote patient safety in practice. This research study is important because keeping patients safe is a key priority in health care. As a charge nurse, you have important knowledge about how to keep patients safe while in the hospital.

Participation involves a one-on-one interview at a time convenient for you that will last approximately one hour. The interview begins with a very brief demographic questionnaire that takes about one minute to complete. Then, you will be asked questions about how charge nurses keep patients safe. There is no potential risk to participating in this study. Instead of using your name, you will be given a code to maintain

confidentiality and respect your privacy. With your permission, the interview will be audio recorded. Following the interview, the researcher may ask if you are willing to be observed for approximately two hours while working as a charge nurse at a time determined by you, your manager, and the researcher. Following the observation, a brief follow up interview lasting less than 30 minutes may be necessary to clarify actions or processes observed during the observation. You may withdraw from the study at any time without penalty. The research results will be published, but your personal identity will remain confidential.

I would value and appreciate your participation. As a small token of appreciation, I will provide you a $15 Starbucks gift card at the completion of our interview. Please feel free to contact me via email (email address) or at this phone number (XXX-XXX-XXXX) with any questions.

Do you have any questions about the study?

Are you interested in participating?

Would you like to set up an interview time and place now, or contact me via email or phone to set up the interview?

Thank you so much for calling and have a great day!

Appendix G

Informed Consent for the Health Care Organization

INFORMED CONSENT TO PARTICIPATE IN A RESEARCH STUDY OF
Charge nurses and patient safety: A qualitative, grounded theory study.

PARTICIPANT NUMBER:

INVESTIGATOR: Heather Cathro, MN RN Doctoral student
Work: Name of facility
Address of facility
School Affiliation:
Doctoral Nursing Student
University of Phoenix
3157 E. Elwood St. Phoenix AZ 85034

TELEPHONE: (XXX) XXX-XXXX

You are being invited to be in a research study. The purpose of this form is to give you detailed information about this study. The goal is for you to understand:

- **that taking part in a research study is entirely voluntary,**
- **the reason the Principal Investigator (Heather Cathro) is doing the study,**
- **what will happen to you if you decide to be in the study, and**
- **what will happen to you if you decide not to be in the study.**

You can ask Heather Cathro any questions at any time.

WHAT IS THIS STUDY ABOUT?

Heather Cathro is doing this research study to find out about the actions and processes charge nurses implement to keep patients safe. Patient safety is a crucial issue in health care and to society. Charge nurses are front line leaders in hospitals who have key roles in keeping patients safe. Articulating actions and processes charge nurses implement to keep patients safe can inform charge nurse job descriptions, serve as the basis for charge nurse orientation and training, and empower charge nurses to promote patient safety in practice.
Heather Cathro is asking you to be in this research study because you are a charge nurse on a medical-surgical unit. As a charge nurse, you have important knowledge about how to keep patients safe while in the hospital.

DO I HAVE TO JOIN THIS STUDY?

You do not have to be in this study. Participation in this study is entirely voluntary. You may choose to be in this study or not to be in this study without affecting your employment in any way.

HOW LONG IS THIS STUDY?

If you choose to take part in this study, you will be in this study for about one month (or until the interview, optional observation, and possible follow-up interview are completed). The initial interview is approximately one hour. The optional observation is approximately two hours and a possible follow up interview would be approximately 30 minutes. If you agree to the interview, observation, and a follow up interview if necessary, your total participation time would be approximately three and one half hours.

If you join the study, you can decide to stop at any time and for any reason. You would need to contact Heather Cathro by email or phone if you decide to stop.

IF I AGREE TO JOIN THIS STUDY, WHAT WOULD I NEED TO DO?

If you choose to be in this study, you will need to come to one interview that will last approximately one hour at a time and place convenient to you in the hospital. At the beginning of the interview, you will be asked to fill out a brief demographic questionnaire. The questions are about your nursing career. It takes about one minute to fill out the questionnaire and you do not have to answer all the questions. With your permission, the interview will be audio recorded with a digital recorder. An iPhone will also be used as a backup recording method and this recording will be erased once the digital recording is saved on Heather Cathro's computer. The interview will be transcribed but your identity will remain protected. You have the option of allowing Heather Cathro to observe you while working one shift for approximately two hours, at a time that works for you and is approved by your manager. Heather Cathro may request a very brief optional follow up interview to clarify any questions after the observation. There will be approximately 20 charge nurses participating in this study, but interviews and observations will be conducted individually.

WHAT ARE THE POSSIBLE HARMS OR RISKS IF I JOIN THIS STUDY?

There is a small risk of loss of confidentiality. However, the risks associated with participation are not expected to exceed those encountered in daily life.

WHAT ARE THE POSSIBLE BENEFITS IF I JOIN THIS STUDY?

There is no guarantee that you will benefit from participating in this study.

WHAT OTHER OPTIONS DO I HAVE?

You can choose not to be in this study without affecting your employment in any way.

HOW WOULD YOU KEEP MY INFORMATION CONFIDENTIAL?

Heather Cathro will store all your research records in locked cabinets and secure computer files. Heather Cathro will not put your name on any research data. Instead, Heather Cathro will label your information with a study number. The master list that links a person's name to their study number is stored in a locked cabinet or on a secure computer file only accessible by Heather Cathro.

If the results of this research are published, Heather Cathro will not use information that identifies you.

If you choose, you can provide your contact information, including a preferred email and/or phone number. Communication through email will be to set up interview and/or observation times. You do not need to provide any personal information through email for the purposes of this study. Following data collection and analysis, you will be asked if you would like to see your transcribed interview and interpretations of the information you provided to verify accuracy. You can tell Heather Cathro if you would like to receive these documents by email or in-person. If they are sent via email, they will be password-protected. However, sending information through email may pose a potential privacy risk.

WOULD IT COST ME MONEY TO BE IN THE STUDY?

No, it will not cost you money to be in the study.

WILL I BE COMPENSATED IF I JOIN THIS STUDY?

Heather Cathro will offer you a $15 Starbucks gift card to acknowledge your time and as a token of appreciation following completion of the interview. You will not be provided with additional compensation for completing the optional observation or optional follow-up interview.

WHAT DOES MY SIGNATURE ON THIS FORM MEAN?

My signature on this form would mean that I acknowledge:

1. Personal information about me that is collected in this study will be protected to the extent provided by law. No information from this study that could be linked to me will be released without my consent, unless release is compelled or permitted by law.

2. The results of this study may be reported in articles, books or at meetings. My identity will not be revealed at any time, unless compelled or permitted by law. Research records will be kept confidential to the extent provided by law. All study records will be kept in a locked cabinet or password-protected computer and accessed only by Heather Cathro.

3. Being in this study is my choice. I may decide to leave this study at any time. If I choose not to be in the study or leave the study, it will not affect my employment.

4. My questions regarding this study have been answered. If I have any questions about this study, I may contact

Heather Cathro (Principal Investigator) XXX-XXX-XXXX
Email address

If I have any questions about my rights as a research subject, I may contact

Contact person for the healthcare organization IRB provided

I may also contact the University of Phoenix Institutional Review Board by email at IRB@phoenix.edu

Name of healthcare organization and the University of Phoenix are separate entities.

I have read the entire consent, and voluntarily consent to participate in the following parts of this research study checked here:

☐ The demographic questionnaire and interview

☐ The demographic questionnaire, interview, and observation

☐ A brief follow up interview if necessary

☐ I agree to Heather Cathro audio recording our interview

Heather Cathro is an employee of name of healthcare organization and a student at the University of Phoenix.

Your signature shows that the research study has been explained to you and all of your questions have been answered. ***If you still have questions or do not understand what this study is about, do not sign this form***. Give this form back to Heather Cathro and get more information.

A copy of this signed and dated Informed Consent Form will be given to me for my records.

_____

Printed First and Last Name of Participant / Legally Authorized Representative

_____ _____

Signature of Participant/Legally Authorized Representative | Date

_____

Printed Name of Person Obtaining Consent

_____ _____

Signature of Person Obtaining Consent | Date

Appendix H

Informed Consent University of Phoenix

INFORMED CONSENT: PARTICIPANTS 18 YEARS OF AGE AND OLDER

Dear:
Participant Number:

My name is Heather Cathro and I am a student at the University of Phoenix working on a PhD in Nursing degree. I am doing a research study entitled *Charge nurses and patient safety: A qualitative, grounded theory study* as part of my PhD program. The purpose of the research study is to find out about the actions and processes charge nurses implement to keep patients safe. Charge nurses are front line leaders in hospitals who have key roles in keeping patients safe. Articulating actions and processes charge nurses implement to keep patients safe can inform charge nurse job descriptions, serve as the basis for charge nurse orientation and training, and empower charge nurses to promote patient safety in practice.

Your participation will involve one interview that will last approximately one hour at a time and place convenient to you in the hospital. At the beginning of the interview, you will be asked to fill out a brief demographic questionnaire. The questions are about your nursing career. It takes about one minute to fill out the questionnaire and you do not have to answer all the questions. With your permission, the interview will be audio recorded with a Sony digital recorder. An iPhone will also be used as a backup recording method and this recording will be erased once the digital recording is saved on my computer. The interview will be transcribed but your identity will remain protected. You have the option of allowing me to observe you while working one shift for approximately two hours, at a time that works for you and is approved by your manager. I may request an optional brief follow up interview to clarify any questions after the observation that would not exceed 30 minutes. Your total participation time will not exceed three and one half hours. There will be approximately 20 charge nurses participating in this study, but interviews and observations will be conducted individually.

You can decide to be a part of this study or not. Once you start, you can withdraw from the study at any time without any penalty or loss of benefits. The results of the research study may be published but your identity will remain confidential and your name will not be made known to any outside party.

In this research, there are no foreseeable risks to you except “none.”

Although there may be no direct benefit to you, a possible benefit from your being part of this study is helping to increase knowledge of the charge nurse role and patient safety.

It will not cost you money to be in the study. I will offer you a $15 Starbucks gift card to acknowledge your time and as a token of appreciation following completion of the initial interview. You will not be provided with additional compensation for completing the optional observation or optional follow-up interview.

If you have any questions about the research study, please call me at (XXX) XXX-XXXX or email (email address).

For questions about your rights as a study participant, or any concerns or complaints, please contact:

University of Phoenix Institutional Review Board via email at IRB@phoenix.edu

and/or

Contact provided for the organization where the research took place

As a participant in this study, you should understand the following:

1. You may decide not to be part of this study or you may want to withdraw from the study at any time by calling or emailing Heather Cathro. If you want to withdraw, you can do so without any problems.
2. Your identity will be kept confidential by assigning you a participant number for all study related data.
3. Heather Cathro, the researcher, has fully explained the nature of the research study and has answered all of your questions and concerns.
4. If your permission is received, Heather Cathro will record the interview. Heather Cathro will develop a way to code the data to assure that your name is protected.
5. Data will be kept in a secure and locked area only accessible by Heather Cathro. The data will be kept for three years, and then destroyed.
6. The results of this study may be published.

"By signing this form, you agree that you understand the nature of the study, the possible risks to you as a participant, and how your identity will be kept confidential. When you sign this form, this means that you are 18 years old or older and that you give your permission to volunteer as a participant in the study that is described here."

I have read the entire consent, and voluntarily consent to participate in the following parts of this research study:

- ☐ The demographic questionnaire and interview
- ☐ The demographic questionnaire, interview, and observation
- ☐ A brief follow up interview if necessary
- ☐ I agree to Heather Cathro audio recording our interview

(☐) I accept the above terms. (☐) I do not accept the above terms. (CHECK ONE)

Signature of the interviewee _____

Date _____

Signature of the researcher _____

Date _____

Appendix I

Recruitment Flyer

WANTED!

Charge Nurses on Medical/Surgical Units to Participate in a Research Study about Charge Nurses and Patient Safety

Contact: Heather Cathro, MN RN, Doctoral Student
Cell: (XXX) XXX-XXXX
Email: email address
Call or Email Heather for More Information
Participation is Voluntary
Participation Consists of a 1 Hour Interview and an Optional Observation on the Unit
Help Advance Knowledge of this Important Role!

Appendix J

Demographic Questions

1) Gender a) Male b) Female
2) What is your age range?
   a) 20-30 b) 31-40 c) 41-50 d) 51-60 e) Over 60
3) How many years have you been a charge nurse?
4) How many years have you been a Registered Nurse?
5) How many years have you worked on your current unit?
6) What type of unit do you work on? Please circle one.
   a) Medical/Surgical b) Medical/Surgical/Telemetry c) Definitive Observation Unit
7) How many beds are on your unit?
8) What is your highest level of education? Please circle one.
   a) Diploma b) Associates degree c) Bachelor's degree d) Master's degree or higher

Appendix K

Poster for Observations

Heather Cathro, a Doctoral Nursing Student, is conducting observations on your unit today as part of her research study. The focus of Heather's research is on Charge Nurses and Patient Safety.

You can expect to see Heather on your unit today from (insert times).

Heather will primarily be at the nurses' station and speaking with your Charge Nurse.

You can ask Heather questions at any time and if you have any concerns you can call or email Heather at (XXX) XXX-XXXX or

Email address

Thank you.

Appendix L

Interview Guide

Date and Time of Interview:

Location:

Participant Number:

Pre-interview Script Outline:

- Introduce self
- Thank participant for agreeing to the interview
- Outline purpose of the study: The purpose of this study is to explore actions and processes charge nurses implement to keep patients safe
- Obtain Informed Consents (allow participant time to read the informed consents, verbally review the informed consents with him/her, and ask if he/she has any questions about the informed consents)
- Participant will be provided with a pencil and necessary time to complete the demographic information form (approximately one minute to complete)
- Explain the interview starts out with general questions and will conclude with an opportunity to discuss any additional issues or important information related to the charge nurse role and patient safety not yet covered in the interview
- Feel free to ask the researcher any questions or for clarification at any time
- Verify permission to record interview and check recording devices (Sony digital voice recorder and researcher's iPhone)
- Have participant state their participant number at the beginning of the recording

These Questions and Prompts Serve as a Guide for the Interview:

1) Please tell me what you do as a charge nurse to keep patients on your unit safe.

2) Please tell me about a specific situation where you recently took action to keep a patient safe.

3) Please discuss any additional issues or important information related to the CN role and patient safety not yet covered in our interview.

Post Interview Script Outline:

- Ask participant if he/she has any questions for the researcher
- Thank participant for his/her time and provide Starbucks gift card
- Inform the participant he/she will have the option to receive copies of the interview transcripts to verify accuracy. These copies can be sent via email through a password protected file with participant's permission, or by arranging a follow up meeting time
- Provide contact information and coordinate observation if applicable

Ideas for Interview Guide from: Jacob & Furgerson (2012)

Appendix M

Observation Protocol

Focus on Actions and Processes Charge Nurses Implement to Keep Patients Safe

Descriptions: Charge nurse actions, processes, behaviors, interactions	**Context and Reflection:** The context in which actions, processes, behaviors, and interactions occur; reactions, learning, questions

Ideas for Content for Observation Protocol from: Patton (2003)

Appendix N

Summary Tables of Data from Interviews

Table 9

Interview Data: Balancing Multiple Roles

Open Codes: Subcategories	Examples of Properties	Examples of Participants' Words
Direct interventions	Assisting with skills and being hands on	"It seems like every night you are doing something" (CN1)
		"You can be the laboratory person, you can be the transporter, you're the nurse…you're everybody" (CN5)
	Assisting with admissions	"As a CN I'm the one who receives the patient" (CN8)
		"I jump in and I admit the patient" (CN4)
	Intervening with challenging patients or when patients experience a change in condition	"There is a visible relaxation when I speak to her" (CN1)
		"If we have difficult patients, you (the CN) is the one who is going to help" (CN5)
Resource	Being the go-to resource person for all disciplines	"People look at you to know and have the latest information" (CN1)
		"I am just like their go-to person" (CN8)
	Being a resource on policies and procedures	"I make sure that all the protocols and procedures are being carried (out) and observed" (CN2)

		"If there is anything we are not sure of, we go back to the policy" (CN7)
	Integrating and applying all clinical knowledge and experience	"Bringing all of my clinical knowledge and skills to whatever particular situation that will come up" (CN1)
		"Your nurses are looking at you as someone they can rely on" (CN7)
	Knowing the patients, knowing the staff	"It's like you know everybody - you know all the patients, you know all the nurses, you know the doctors - and you're the one who coordinates everything for everyone" (CN3)
		"You have to know the history/read the history of the patient and the reason why they are here" (CN2)
Educator	Educating patients and family	"But we always, always, always let them know and tell them, what's the pros and cons - some understand and are ok with it and some really don't want to do it" (referring to use of bed exit alarms) (CN3)
		"The primary nurse taught the wife how to feed the patient - since this is the second aspiration pneumonia for this patient" (CN3)
	Educating staff	"You have to be transparent…you have to tell your staff why you are doing things" (CN1)

		"They want to do it and I go 'good' and I will talk them through it" (CN1)
Advocate	Advocating for patients	"We know the patients more than the providers…you have to jump in. You have to provide that patient safety" (CN4) "Let's talk to the doctor to really deliver the preferred level of care for this patient and to keep them safe" (CN4)
	Advocating for staff	"There was one time I just begged people to come in and just watch because there are times when the people making the decisions on a shift that have never seen the shift they are making the decisions for" (CN1) "I try to be more of a solver. What can I solve? What can I help with? Then I analyze: We could have done this better? If I had this, this could have been helping me more, or the nurses" (CN4)
	Advocating for safe practice environments	"I'll go to my manager and say: 'this is what we have been doing, this is what we think should be different' and then follow up" (CN4) "Is it possible for you to spare me the breaker? It just so happened that he listened to me. So in that way our shift became smooth that night because we had enough help" (CN10)

Patient assignments	Looking at the acuity and complexity levels of patients	"If someone is what I would call now overwhelmed with one patient or we are getting admissions, I will always look to see what their acuity level is" (CN1) "As we do the assignment and look at the complexity of this patient, I tend to look at my nurses and their capability to handle the patient" (CN4)
	Matching the needs of the patients with the capabilities of the staff	"If I think the nurse is the most capable of taking care of that patient for the shift then - I just have to explain it to her in a very positive way" (CN2) "When you are doing the assignments, you should be able to know which one is more effective to take care of this kind of patient" (CN5)
	Making the most of available resources/recognizing when patient safety is potentially compromised	"If we have full staff, the more the patients are going to be safe. Especially when they (the nurses) all have five patients. Of course, it is hard" (CN5) "But I have to assess. I have to first take report because I have to know what is going on. If I get the report and I know that it is too complicated for one of the nurses, then I always change the assignment" (CN10)

Table 10

Interview Data: Maintaining a Watchful Eye

Open Codes: Subcategories	Examples of Properties	Examples of Participants' Words
Fall prevention	Use of bed exit alarms	"I'm a fan of bed alarms - we use them on everybody of course, and they do give us warning" (CN1)
		"If the patient is refusing the bed alarm, then we have to instruct or educate them about the importance of the bed alarm. And then when a patient gets up, it will alarm the bed and you have to run and check if the patient needs some help" (CN11)
	Moving patients at high risk for falls closer to the nurses' station	"We move them closer to the nurses' station and that way we can observe them more closely and we can attend to their needs" (CN7)
		"We try and move patients closer to the nurses' station who are unstable and who are at risk for falling" (CN9)
	Rounding with patients and educating patients on fall prevention	"We have hourly rounds and we always ask our patients if they need to use the restroom every time we go. When we make hourly rounds, every time you go you ask what they need bathroom wise …to prevent them from falling" (CN5)

		"(We) make sure that the bed alarms are on and explain to the patients the things that we are doing when making our rounds" (CN10)
Pressure ulcer prevention	Assessing skin on admission	"We check on skin - we always do - and if there is something we need to check on - we go together" (CN3) "I like to see what is going on. Is there a pressure ulcer?" (CN5)
	Ensuring appropriate interventions are implemented	"If we admit a patient with a pressure ulcer or skin problems we assess it and the necessary treatment that we can do. We can always tell that to the doctor, the doctor can order something or call/make a consult to the wound nurses (WOCN)" (CN3) "If there is a lot of skin problems, then I get involved. I was part of the wound team before so I'm pretty skilled at it" (CN6)
Infection prevention	Monitoring adherence to infection control policies	"We just had a patient with diarrhea - and the nurse told me she sent a stool for (clostridium difficile) cdiff - so I asked the CNA to put an isolation cart outside the room and block the room" (CN3) "Educating our nurses, the family members, the reason for being isolated" (CN4)

	Preventing hospital-acquired infections	"Making sure we are looking at the labs, making sure we are doing the hand hygiene especially for the infections that are hospital-acquired" (CN4) "Making sure that there is a chlorhexidine bath/wipe order for everybody that has a central line" (CN9)
Core measures	Monitoring compliance with inpatient core measures	"We were doing audits for diabetes" (CN5) "We are checking to make sure that all the patients have either a chemical or a mechanical prophylaxis" (CN9)
	Checking admissions and discharges	"With stroke patients, there are many things that we must do when the patient gets admitted" (CN6) "We need to ensure that the patients who are discharged go home with the correct medications. So I double check their discharge instructions" (CN6)
Equipment	Having the essential equipment to provide safe care	"Do we have enough pumps on the floor? Do we have enough poles? It sounds so silly - is the bed ready?" (CN1) "You only have one on the unit (referring to a pulse oximeter) for 24 patients and then you have to wait for it" (CN4)

Table 11

Working With and Leading the Health Care Team

Open Codes: Subcategories	Examples of Properties	Examples of Participants' Words
Collaborating	Collaborating with nurses and other members of the multidisciplinary team	"Closing the loops - with the nurse, the CN, the physical therapists, occupational therapists…speech, everybody that's involved, including the doctor" (CN6)
		"You have to collaborate with the doctors if they have problems with the staff…So that's why I told my primary nurses if they have some change in status with their patients - please let me know" (CN10)
	Families as partners in safe care	"If there are family members, that's the best person to give you a lot of information about the patient" (CN2)
		"We could have had somebody sitting with him…usually there is a family member" (CN7)
Building a high functioning team	Working together	"If I didn't have that kind of great high functioning, I probably would have retired. But, because we do have it, it makes it really - I won't say it - fun - but it's still a joy" (CN1)
		"The main thing is you have a team to build - good

		working relationships with your coworkers" (CN5)
	Trust in the team	"Health care workers are very conscientious about patient safety" (CN3)
		"The CNAs and unit clerks give me some input, too, of the patients who are not in a safe state" (CN3)
	Awareness about patient safety	"Pretty much everybody is aware about patient safety" (CN3)
		"Huddles mainly. Everybody - CNAs, even the unit-clerks - getting everyone involved" (CN9)
Taking care of staff	Patient safety requires staff safety	"You maintain patient safety, focus on patients, and also, of course, the safety of your co-workers" (CN5)
		"So, my main goal is always the safety of the patient. Not only the safety of the patients, but also the safety of the nurses (CN11)
	Leaders who care	"I make sure not only the patients, but also the staff on our unit are safe and well taken care of" (CN2)
		"I think a good leader - we should have the vision and the passion to really care for those patients and the nurses" (CN4)