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# Reducing the Cost of Safety Assistants with Clinical Nurse Specialist and Advance Practice Nurse Rounding

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Reducing the Cost of Safety Assistants with Clinical Nurse Specialist and Advance Practice  
Nurse Rounding

Systems Change Project

Submitted in Partial Fulfillment of the Requirements for the Degree of

Doctor of Nursing Practice

St. Paul, Minnesota

St. Catherine University

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ST. CATHERINE UNIVERSITY  
ST. PAUL, MINNESOTA

This is to certify that I have examined this  
Doctor of Nursing Practice systems change project written by

Sue Karleen Irle

and have found that it is complete and satisfactory in all respects,  
and that any and all revisions required by  
the final examining committee have been made.

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Susan Hageness, RN, DNP

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Date

DEPARTMENT OF NURSING

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## **Executive Summary**

Health care and medical care are currently undergoing dramatic changes. Factors that are driving the changes include: an aging population, an increase in chronic conditions, corollaries of the Affordable Care Act (ACA) including mandatory healthcare insurance for the population and coverage for individuals with preexisting conditions, and changes in reimbursement through the Centers for Medicaid and Medicare Services (CMS). A significant challenge is the financial balance needed to provide affordable care that produces quality outcomes and patient satisfaction in acute care hospitals.

One of the quality outcomes sought is safety. One of the key provisions of the American Nurses Association Code of Ethics (2001) is the accountability of registered nurses (RNs) for providing a safe environment for their patients. The use of safety assistants is one way that nursing care is supplemented to create that safe environment. Safety assistants are individuals who are positioned at the bedside of those patients whom have been determined to be a safety risk.

The use and cost of safety assistants has steadily climbed over the last few years. A Safety Assistant Team was convened at the organization in which this System Change Project took place to determine ways to reduce the cost of the use of safety assistants. A team charter was established. The team membership included: Directors, Managers, Staff Nurses, Safety Assistants, and Clinical Nurse Specialists. The Safety Assistant Team members reviewed current literature for projects that lowered the cost of safety assistants. The team identified one project that could serve as a model. The model would use Clinical Nurse Specialists and Advance

Practice Nurses to round on all non-psychiatric patients on medical surgical units who had been assigned a safety assistant.

Three theories undergirded the project: Dorothea Orem's Self-Care Deficit Theory provided foundation for the assessment of patients who were unable to totally care for themselves and put them at a safety risk; John Kotter's eight-step Change Management Theory provided a framework for successful and sustainable project outcomes; and Everett Rogers' Theory on the diffusion of Innovations was used to evaluate the potential sustainability.

The project question was can the cost of using safety assistants be reduced by rounding by Clinical Nurse Specialists and Advanced Practice Nurses? An evaluation of the number of Safety Assistant hours used 6 months before the rounding occurred and 6 months after the initiation of the rounding identified a decrease of 7825 hours used that translated into a reduction of \$131,065 in cost. The return on investment for rounding project was 2735%.

While the cost savings are impressive, cost cannot be the only consideration. Those provisions of care that result in quality outcomes and patient satisfaction are equally important. However, these elements were not measured in this system change project. Further research must be supported at the highest level of the organization to determine what specific outcomes are priority in the rounding process by the CNS or APN; are collaborative relationships essential to the success of the rounding process and how are those collaborative relationships built and sustained; what written recommendations for alternative interventions and complimentary modalities resulted in the most advantageous patient outcomes; and what are the elements of a successful safety plan? Another parameter to be studied is what is the thought process used by the CNS and is it transferable to other nurses?

The future holds many questions for the economic success of organizations involved in the healthcare of the populations they serve. The ability to deliver cost effective care is inherently linked to providing quality care. Health care professionals should be practicing collaboratively at the top of their education, licensing, and ability towards the common goals of any quality and safety program. This project identified that the CNS effectively delivered an economic outcome: however, with more consideration of the potential of the expertise and skill of those in the CNS role, further gains await the populations served.

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### **Abstract**

**Situation:** Hospitals are under increasing pressure to produce quality outcomes within tight financial budgets. In one Midwestern hospital, a Safety Assistant Team was charged with the responsibility to reduce the cost of safety assistants. An intervention study was implemented to determine if the number of safety assistant hours could be reduced when Clinical Nurse Specialists and Advanced Nurse Practitioners rounded on non-psychiatric patients who had been assigned safety assistants on medical surgical units.

**Methods:** The number of safety assistant hours before rounding was compared to the number of hours of use after the initiation of rounding by Clinical Nurse Specialists and Advance Practice Nurses

**Results:** The number of Safety Assistant hours was reduced by 15 % which resulted in a return on investment of 2735%.

**Conclusion:** Rounding by Clinical Nurse Specialists and Advanced Practice Nurses reduces the use of safety assistants which results in a reduced cost.

## **Chapter One**

### **Background and Significance**

Health care and medical care are currently undergoing dramatic changes. Factors that are driving the changes include: an aging population, an increase in chronic conditions, corollaries of the Affordable Care Act (ACA) including mandatory healthcare insurance for the population and coverage for individuals with preexisting conditions, and changes in reimbursement through the Centers for Medicaid and Medicare Services (CMS). One of the significant challenges of these changes is the financial balance needed to deliver affordable care that produces quality outcomes in acute care hospitals. In order to remain financially viable, acute care hospitals must find ways to deliver care that produces quality outcomes that are contained within a limited budget.

#### **Aging Population**

According to the 2010 U.S. Census Data, there were more people over 65 years of age compared to any other census period. The report also noted that the rate increase is 15.1 percent and that this age demographic is growing at a rate faster than the US population which is only growing at 9.7 percent (Werner, 2011). Going forward, “Between 2010 and 2050, the United States is projected to experience rapid growth in its older population. In 2050, the number of Americans aged 65 and older is projected to be 88.5 million, more than double its projected population of 40.2 million in 2010” (Vincent & Velkoff, 2010, p. 1).

Bodenheimer, Chen, and Bennett (2009) report, “The population over age eighty-five, the group with the highest proportion of people with multiple chronic conditions, is projected to grow from five million in 2005 to twenty-one million in 2050, ensuring a major increase in the number of very-high-cost patients” (Bodenheimer, Chen, & Bennett, 2009, p. 66). This financial

prediction is sobering and organizations must strategically plan how they will meet the needs of this segment of the population that consumes significant amounts of healthcare dollars.

### **Chronic Conditions**

As the population ages there is an increasing demand on health care resources. “Many older persons, especially the ‘oldest old,’ have chronic conditions that require complex health care, so as the population ages, the total number of Americans with chronic conditions will rise rapidly” (Boult et al., 2009, p. 2328). Healthcare management and the healthcare professionals delivering care in the acute care setting recognize that this population will often times have co-morbidities when being hospitalized, that they are hospitalized more frequently, and that they require more complex care at the time of hospitalization (Dorr, Wilcox, Bruner, Burdon, & Donnelly, 2008). Steiner and Freidman (2013) reported that in the age group of 18-45 only 6.5% were discharged from the hospital with four or more chronic conditions as compared to 47.5% of those 65 years of age or older and that the mean charge for providing care in this older population for all individuals with chronic conditions is \$37, 311.28 per person (Steiner & Freidman, 2013, p. 4).

The acuity and complexity of care combined with an aging population will challenge how care will be delivered. Organizations and professionals who are providing care must find ways to deliver the care safely, accurately and within firmly set budget goals.

### **Affordable Care Act and Medicare**

On March 23, 2010, the Patient Protection and Affordable Care Act (ACA) was signed in to law by President Barack Obama. While many of the mandates are not scheduled to take effect until 2014, acute care hospitals remain unsure how the new law will impact their financial bottom line. One distinguishing feature of the new law is the establishment of Accountable Care

Organizations (ACO). These organizations are designed to provide local, comprehensive, and cost-efficient care. Participants may reap financial gains yet there is uncertainty of exactly how much in startup costs are required to install this delivery care model (Bennett, 2012).

With the introduction of ACOs, the Shared Savings Program (SSP) a feature of an ACO is designed to improve the quality of care to Medicare recipients through coordination, cooperation and a reduction in the duplication of services. However, Yeung, Burns, and Loiacono (2011) discuss startup costs that can be as high as \$1.75 million for an ACO when investments in health information technology, compliance programs, marketing material, and attorney's fees are included (Yeung, Burns, & Loiacono, 2011).

In addition to the infrastructure remodeling, Averill, Hughes, & Goldfield (2011) point out that the ACA seeks to provide an improved system of medical care that increases access to care, improves the quality of the outcomes as a result of the care, and reduces the cost of care. This aligns with Medicare's exclusion of reimbursement for hospital readmissions in certain conditions as a result of the 2005 Deficit Reduction Act. This change in reimbursement for quality outcomes provides an incentive for acute care hospitals to deliver care that focuses on "reducing the rate at which negative outcomes occur" (Averill et al., 2011, p. 184).

### **ANA Nurses' Code of Ethics**

Nurses are health professionals who provide direct patient care and are in a unique position to drive the quality outcomes at the bedside. Legally nurses are bound to practice by their state's Board of Nursing nurse practice act. Yet, beyond the legalities of their state nurse practice acts, there is an essential obligation to provide for those who are most vulnerable, sick, or injured in a way that promotes the individuals health and healing. In the Code of Ethics for Nurses with Interpretive Statements (2001), published by the American Nurse Association

(ANA), there are two provisions that resonate clearly with providing safe quality outcomes. Provision three states, “The nurse promotes, advocates for, and strives to protect the health, safety, and rights of the patient” (ANA, 2001, p. 12). The ANA document goes on to say in provision four, “The nurse is responsible and accountable for individual nursing practice and determines the appropriate delegation of tasks consistent with the nurse’s obligation to provide optimum patient care” (ANA, 2001, p. 16). These two provisions provide a foundation for delivering quality care that is further reinforced by the landmark report from the Institute of Medicine (IOM), *Crossing the Quality Chasm*. This report points out that patient safety is a result of good system design, accountability at all levels within an organization and results from an anticipation of needs (IOM, 2001).

### **Triple Aim**

In 2008 the Institute of Healthcare Improvement (IHI) developed what is known as the triple aim. The triple aim is intended to, “improve the health of the population; enhance the patient experience of care (including quality, access, and reliability); and reduce, or at least control, the per capita cost of care” (Institute of Healthcare Improvement [IHI], 2013, p. 1).

The IHI imperative spurred many organizations to come together with their community inhabitants and community leaders in an effort to determine what the triple aim will look like in their corner of the world. Maureen Bisognano, IHI Chief Executive Officer (CEO) and co-author Charles Kenney, highlight visionary leaders who have successfully met the tenants of the triple aim through nontraditional partnerships and collaboration (Bisognano & Kenney, 2012). In addition to looking outside organizations for developing new care delivery models, Bisognano also affirms the role that finance plays in delivering quality of care within an organization at any point there is a discussion about reducing waste or overutilization of resources (Q&A, 2011).

These combined elements of the triple aim provide a framework for the design of all processes within a healthcare system. This framework can also provide an evaluation structure for the assessment of the quality in any outcome.

### **SCP Organization Mission and Goals**

The private, non-profit hospital in which this System Change Project (SCP) took place is a mid-sized hospital in Minnesota. The care that is delivered there today is firmly rooted in its' early identity as a county run hospital. Today this hospital serves the public for all of Minnesota, Western Wisconsin, as well as parts of Iowa. The mission reflects a commitment to social justice principles in that the organization strives to improve the health of the patients and the community by providing high quality care to all those who seek their services.

True to its mission, the hospital is seen as a safety net hospital for the local community. As a safety net hospital for the community, those who present for care without the ability to pay are cared for. According to the hospital's policy on providing financial assistance, the hospital will provide financial assistance to uninsured and insured patients who demonstrate and provide verification of financial need.

This mission unfolds in a delicate balance between services provided and the cost of those services. The organization is also at the mercy of state funding which at times can be perilous depending on the economic conditions of the state coffers and the generosity of the voting members of the Minnesota State Legislature. With this reality, the organization must maintain accountable stewardship of all resources in order to fulfill the responsibilities of the mission statement to the community at large and also to those individuals who are most vulnerable.

### **Situations and Opportunities for the Organization**



**Safety Assistants**

Safety Assistants (SAs) are known by several different names. Some organizations refer to them as constant observers, one-to-ones, or sitters. The objective for these individuals regardless of their title is the same. It is to ensure a priority of quality care, namely the safety of the patient. They are often, by organization's policy, placed within an arm's length of the patient and they are expected to provide a basic level of care to the patient as delegated by the assigned RN.

When assessing a patient, there are many variables that would prompt the RN or the physician to recommend the use of SAs. Those variables could include; the degree of confusion exhibited by the patient, the impulsiveness of the patient, how steady the patient is on their feet, and the history of falls from a previous admission or as reported in the patient's history. Over the years there have been attempts to create specific tools to help in the measurement of the degree to which a patient is at risk for injury. An example would be those assessment tools that have been created to assess the risk of falls which happens to be a common reason for assigning a SA. However, these tools have been plagued by inaccuracy and reliability (Oliver, 2008). The literature suggests that without an effective standardized tool, nursing staff are often making the decision to use a SA based on their personal experience, the perception of the difficulty of their patient assignments, or how well-staffed the unit is at the time that the decision is being made. These non-objective variables may contribute to the unnecessary assignment of a SA (Rausch & Bjorklund, 2010) (Harding, 2010) (Flaherty & Little, 2011). When there is an unnecessary assignment of a SA then there is an unnecessary cost related to the use of the SA.

**Safety Assistant Use**

As the result of tight budgeting practices, all programs and departments are scrutinized for efficiencies to reduce cost. The escalating cost associated with using SAs on one unit at this hospital was becoming an issue. Irle (2012, p. 2) noted:

The terms safety assistant (SA), constant observation, and one-to-one are all used to identify an individual that is assigned to provide a safe environment by remaining in close proximity to the patient. (Harding, 2010) (Tzeng, Yin, & Grunawalt, 2008) The use of safety assistant has steadily increased over the last decade for a variety of reasons, and along with this trend, so has the cost associated with providing this service (Rausch & Bjorklund, 2010).

In response to the ballooning costs for the use of safety assistants within the organization, a Safety Assistant Team was assembled to review opportunities to improve the use and reduce the cost.

### **Safety Assistant Team**

A Safety Assistant Team was first convened in 2007 prior to this author's participation. A review of archived meeting minutes identified that there were issues with adequate numbers of trained SAs to fill requests for coverage as well as adherence to consistent processes of assessing a patient's need for a SA. The team identified issues with performance of SAs in providing safe and therapeutic care as well as discussions of added training for those individuals who stepped into the role. Other issues that came to light were; who was ordering a SA; how and when the SA was discontinued; who, when and how were SAs given report at the beginning of their shift; who, when, and how were SAs assigned breaks; and the complications that were incurred when the SA shift extended beyond the normal work day resulting in fatigued workers. The team also explored the use of equipment that could be used in place of a SA such as tab alarms and

weighted blankets. Finally, concerns were identified that resulted when managers from different departments allowed leniency of policy and procedures that had been put in place to govern the SAs at the bedside. Some progress had been achieved and as a result the team went from meeting once a month to meeting every other month.

As time went on and the increased use of SAs became evident, the team was asked to look at ways to control costs. It was at this point, March 2012, that this author joined the team to fulfill objectives of a system change project (SCP).

### **Safety Assistant Team Charter**

The SA Team had been working under a team charter that needed updating because new goals that were needed for reducing the cost of SAs. The SA Team assumed the role of exploring ways to reduce the cost of usage while maintaining a safe environment. Recent hospital data showing the increased use of safety assistants and a comparative rise in the number of reported falls was consistent with the evidence found in the literature (Poe, Cvach, Gartrell, Radzik, & Joy, 2005) (Oliver, 2008). It was clear that work was needed to reverse these events and thus a new charter was written. In the new charter, the purpose of the team was to “investigate, evaluate, and assess utilization of Safety Assistants in a cost effective way that maintains a safe patient care environment” (*SA Team charter*, 2012, p. 1). The charter further identified that an anticipated outcome for the team would be the cost effective use of Safety Assistants and that a measure of success would be a reduction in the number of Safety Assistant full time equivalents (FTEs) or number of shifts. (See Appendix A).

### **Organizational Significance**

The escalating cost associated with the use of safety assistants is unsustainable in acute care hospitals at a time where competing forces are lowering reimbursements while there is an

increase in the aging and vulnerable patient population seeking acute care services. Nurses have an ethical responsibility to provide a safe environment that produces quality outcomes at reasonable cost. A change in the delivery of nursing care is needed if a different outcome is expected. Implementing rounding by Clinical Nurse Specialists and Advance Practice Nurses is a change in the delivery care model which can provide expert evaluation of the nursing plan of care and as a result may reduce the use of safety assistants.

### **Project Purpose**

The purpose of this System Change Project was to reduce the cost of the use of Safety Assistants by instituting a process in which Clinical Nurse Specialists and Advance Practice Nurses visit and/or review the plan of care for each patient that has been assigned a Safety Assistant in a non-psychiatric acute care hospital setting. The non-psychiatric patient was chosen for this project since these patients have no legal requirements that would dictate the assigning of a safety assistant. A non-psychiatric patient would therefore have been assigned a safety assistant based strictly on the assessed need by the registered nurse (RN) or a physician and not by a legal requirement or psychiatric evaluation.

## **Chapter Two**

### **Theoretical Framework**

Three theories undergirded the project: Dorthea Orem's Self-Care Deficit Theory provided foundation for the assessment of patients who were unable to totally care for themselves and put them at a safety risk; John Kotter's eight-step Change Management Theory provided a framework for successful and sustainable project outcomes; and Everett Rogers' Theory on the diffusion of Innovations was used to evaluate the potential sustainability.

#### **Orem's Self-Care Deficit Theory**

When there is a need to assign a safety assistant, it stands to reason that the patient has been assessed to be unable to totally care for themselves. Dorothea Orem's self-care deficit theory of nursing provided an excellent theoretical framework for this project. Orem's Self-Care Deficit Theory is a good fit both because of the theory's simplicity and generality. The simplicity of Orem's self-care deficit nursing theory (SCDNT) is characterized by:

Three constituent theories: (1) self-care, (2) self-care deficit, and (3) nursing systems.

The self-care deficit theory of nursing is a synthesis of knowledge about eight entities, which include self-care (and dependent-care), self-care agency (and dependent-care agency), therapeutic self-care demand, self-care deficit, nursing agency, and nursing system (Taylor, 2006, p. 283).

In further examining the SCDNT as it relates to this SCP, it is helpful to understand the terminology put forth in the theory. Orem (2001) writes, "Self-care is a practical response to an experienced demand to attend to oneself" (Orem, 2001, p. 53). A self-care discrepancy is the gap between what one needs and what one is able to accomplish on their own. Nursing agency is the strength of an individual nurse to produce nursing care. Within the SCP these three concepts come together to assess the degree to which an individual is unable to perceive and/or maintain their own safety (a self-care deficit) and the accountability of the nurse to provide a safe and healing environment (Taylor, 2006).

The generality of the SCDNT is inherent in the essence of nursing practice. Orem (2001) states, "As a general theory, it is not an explanation of a particular nursing practice situation or even of a type of situation. The theory is an expression of a singular combination of conceptualized features and relations among them that are common to all instances of nursing" (p.136).

Orem's theory also accurately explains nursing care within the context of a self-care deficit. The theory of self-care deficit explains why "persons require nursing" (Orem, 2001, p. 146). In the case of the patient who has been assigned a SA to ensure their safety, the assignment becomes a delegated responsibility by the RN caring for the patient to the assigned SA. This delegation is based on the assessment that the patient is unable to exercise self-care agency and therefore is unsafe. When individuals are hospitalized, it is because these individuals are in need of nursing care. Providing a safe, therapeutic and healing environment is an ethical responsibility of the nursing profession.

### **Kotter's Change Management Theory**

John Kotter, (2012) offers a change management theory that is appropriate for a project of this size in a hierarchical organization. Kotter suggests that although the change process is painful, much of distress can be avoided (Kotter, 2012). Kotter (2012) subscribes to eight stages of change management which lead to successful and sustainable change. Each stage is titled and are as follows: Stage One: Establishing a sense of urgency; Stage Two: Creating the guiding coalition; Stage Three: Developing a vision and a strategy; Stage Four: Communicating the vision and strategy; Stage Five: Empowering broad-based action; Stage Six: Generating short-term wins; Stage Seven: Consolidating gains and producing more change; Stage Eight: Anchoring new approaches in the culture.

The sequential achievement of each step has been linked by Kotter with successful and sustainable outcomes although some steps can be in various steps of development at any given time. Another characteristic for successful change management is the involvement of those in top leadership positions which add empowerment and momentum to the change project. The theory

is applied retrospectively later in this manuscript in an effort to evaluate the SATs' change management.

### **Roger's Diffusion of Innovation**

Everett M. Rogers, (2003) proposes that there are similarities in the way that individuals and organizations determine the adoption of an innovation. Rogers (2003) suggests that innovation and decision is a:

process through which and individual (or other decision-making unit) passes from gaining initial knowledge of an innovation, to forming an attitude toward the innovation, to making a decision to adopt or reject, implementation to the new idea, and to confirmation of this decision (Rogers, 2003, p. 168).

This process consists of five stages:

1. Knowledge occurs when an individual (or other decision-making unit) is exposed to an innovation's existence and gains an understanding of how it functions.
2. Persuasion occurs when an individual (or other decision-making unit) forms a favorable or an unfavorable attitude towards the innovation.
3. Decision takes place when an individual (or other decision-making unit) engages in activities that lead to a choice to adopt or reject the innovation.
4. Implementation occurs when an individual (or other decision-making unit) puts a new idea into use.
5. Confirmation takes place when an individual seeks reinforcement of an innovation-decision already made, but he or she may reverse this previous decision if exposed to conflicting messages about the innovation. ( p. 169)

Roger's theory of the diffusion of innovation as well as the progression of the adoption of an innovation is also applied retrospectively later in this manuscript as part of the evaluation of this SCP.

## **Literature Review**

### **Introduction**

The SA team concluded that a literature search was needed to find the best evidence of what strategies might work within the organization to reduce the cost of safety assistants. There was a general consensus that there were many opportunities to improve current processes in assessment, documentation, and discontinuation of an ordered safety assistant, but it was unclear what methods or interventions would provide a sustained reduction in the use of safety assistants.

### **Problem Statement**

The proliferation in the use of safety assistants is not financially sustainable in light of reduced reimbursements; organizations as a whole and nurses specifically, have an ethical obligation to provide safe care with fiscal responsibility.

### **P.I.C.O.T. Question**

Would the cost of safety assistants be reduced if clinical nurse specialists and advanced practice nurses rounded on non-psychiatric patients who have been assigned a safety assistant?

- **Population:** Non psychiatric patients in a Midwest hospital that have SAs in use
- **Intervention:** CNS and APN rounding
- **Comparison:** Before and after the initiation of CNS/APN rounding
- **Outcome:** Reduction in cost as measured by reduction in number of hours of use of safety assistants
- **Time:** 6 months before and 6 months after the initiation of rounding

### **Database Search**

A literature search was initiated using Medical Subject Headings (MeSH) to determine comprehensive word inclusion for subject matter. Databases accessed were Academic Premier,



Cumulative Index to Nursing and Allied Health Literature (CINAHL), and Medline. A Boolean search was conducted using the terms; safety assistant, sitter, constant observer, or one-to-one in multiple combinations with hospital and cost reduction. Results were limited to: published dates between January 2005 and June 2012, scholarly (peer-reviewed) journals, research article, and English language.

There is paucity in the literature that relates specifically to interventions that have been measured to reduce costs. The literature search did return many articles related to falls prevention and risk management. Since the focus of the project was to reduce cost, four articles were reviewed.

### **Analysis**

An analysis of the literature was requested by and prepared for the SA Team. The following information was presented by this author in March 2012 at the monthly meeting of the SA team.

**Psychiatric liaison nurse & psychiatric consultation-liaison nurse.** Rausch & Bjorklund (2010) reported on the development of a new nursing position intended to provide psychiatric assistance to medical-surgical nurses in dealing with patients admitted to hospital beds with underlying mental illness. In a large Twin City Hospital and at the request of senior leadership, the Psychiatric Liaison Nurse (PLN) and the Psychiatric Consultation-Liaison Nurse (PCLN), bachelors prepared nurse and advanced practice nurse respectively, were developed to “facilitate day-to-day problem solving, provide education and support, and closely collaborate with the nursing staff on alternatives to CO (constant observation)” (Rausch & Bjorklund, 2010, p. 77) The study was a quasi-experimental design involving a pre and post measurement of the number of constant observation shifts as well as a measure of the number of falls or restraint

prevalence. During the time of the study and particularly towards the end of the study when the roles of the PLN and PCLN were well established, 175 patients had received consults. 62% of the consults were for delirium and confusion which included compulsive behavior and fall risk tube and/or line pulling, aggressive behavior and traumatic brain injury. The remaining consults included suicidal ideation or precautions (17%), and elopement risk (10%). Most consults originated from medical-surgical units (50%), the ICU (30%), and rehabilitation (18%). Results identified a hospital wide decrease of 50% in the number of constant observation shifts and 25% decrease in falls. Results of the study are limited to one hospital and therefore not generalizable.

**Pay scale.** Harding (2010), explored the creation of a new per diem job category in which employees who had been paid as a sitter within the last 12 months were invited to apply for the new per diem position. Successful candidates received training for the position and an hourly rate on the per diem scale. While this was not a particularly robust study and results provided did not support that the use of a sitter improves patient outcomes, costs were reduced due to the use of a per diem staff, a different pay scale, and less overtime. (Harding, 2010 p. 335)

**Use of family or volunteers.** A study was conducted in a Taiwan Hospital with 102 family members for the purpose of illustrating the activities and roles of family members. (Tzeng & Yin, 2007) Admittedly, western cultures are different, however the author offers the rationale that, “Building a collaborative relationship and having frequent communication between staff nurses, patients, and companions (family members...) about an individual patient’s risk for falls are the key to preventing fall-related injuries” (Tzeng & Yin, 2007, p. 333). The author also noted that the use of family or volunteers was no more or less therapeutic than the use of sitters and with proper guidelines could be successful in preventing falls. Since there was no cost

associated with family or volunteers, this study implied a financial gain. This was a very weak study with only casual inferences and no statistical measures.

**S.A.F.E.** In one study, “The Specialized Adult-Focused Environment (S.A.F.E.) unit offered innovative and practical alternatives to many of the approaches noted in the literature” (Nadler-Moodie, Burnell, Fries, & Agan, 2009 p. 44). The concept involved rooming patients with constant observation needs in either the same room or within close proximity to staff and assigning a dedicated staff to care for them. Using a rapid cycle improvement design, a Sitter Blitz Team which was organized to provide solutions for excessive use of sitters, designed and implemented a plan. The authors reported that due to the success of the initial unit, further evaluation and refinement continued. Ultimately, the authors reported that, “the average monthly cost of sitters 1 year prior to S.A.F.E. implementation was \$18,301, compared with the average monthly cost of sitters 1 year post implementation of \$3223, a significant reduction in sitter utilization” (Nadler-Moodie et al., 2009, p. 48). Once again this is a study limited to one hospital so it is difficult to draw any generalizations.

**Hourly rounding.** One study that did not measure cost but may have implications for reducing falls and the use of safety assistants involved hourly rounding. Olrich, Kalman, & Nigolian (2012) published a replication study in which nursing rounding was implemented and then the number of patient falls, call light usage, and patient satisfaction were studied in a pre- and post- design. The study was very small and results were not statistically significant however, a 23% reduction in falls in this study was clinically significant. This study also did not include any measure of the use of safety assistants.

## **Synthesis**

All the studies were small with limited generalizability and were quasi-experimental or descriptive by design. However, the Rausch & Bjorklund (2010) study on the use of PLN and PCLN had the most similarities to the SCP's patient population where sitters were currently used. While implementation would involve the creation of new positions or possibly the expansion of current positions, if similar results were realized it could have a significant return on the investment.

A new per diem pay scale as suggested by Harding (2010) along with increased training may lower cost while increasing therapeutic value for patients needing sitters and could integrate the training that had already been designed. Human resources would have a significant role in this type of a project and there would be less disruption to the current process of placing a safety assistant at the bedside.

Use of family and/or volunteers (Tzeng & Yin, 2007) will likely have liability and legal issues but these would be worth exploring if there was enough interest from the team.

S.A.F.E. (Nadler-Moodie et al., 2009) would likely present some physical layout issues in assigning patient rooms, yet could yield some desired results if the group would want to pursue the concept.

A commitment to hourly rounding would likely involve a culture change and possibly work flow changes. It may or may not require additional FTE's which could be offset by a reduction in safety assistant FTE's. However, the added value that hourly rounding could create was worth consideration.

### **Chapter Three**

#### **Project Design and Methodology**

An intervention research design was used to guide the SCP. The SA Team reviewed the literature search that had been conducted and determined to model the project as closely as possible to a study by Rausch & Bjorklund (2010) in which “bachelor’s- prepared psychiatric liaison nurses (PLNs) and master’s- prepared, advanced practice psychiatric consultation-liaison nurses (PCLNs) can function as resources to support and educate bedside nursing staff and collaboratively identify and implement alternatives for these patients” (Rausch & Bjorklund, 2010, pp. 75-76). At the time of the SCP process, the organization had a PCLN vacancy so the discussion turned to using the Clinical Nurse Specialists (CNSs) and the Advanced Practice Nurses (APNs) as the intervention in this SCP to determine if this role could have similar results. The population of patients that the SA Team wanted to effect with the rounding included all non-psychiatric patients hospitalized that had been assigned a SA. The psychiatric population was excluded since the use of the SA in these cases was dictated by hospital policy due to legal holds and suicide watches. The number of hours that were logged by safety assistants would be used for comparison in a before and after rounding had been implemented to determine if the number of hours were reduced. The decision was made to use the six months prior to the initiating of rounding by the CNS/APNs and the six months after rounding as the time line for the comparison.

The author approached the Director of the CNS/APN group to explain the plans that the SA Team had arrived at and to garner support. Unknown to the SA team at the time of the appointment was fact that the Director had previous experience with this type of a care delivery model at another organization. The Director suggested that this could only be delivered as a last resort citing a huge degree of dissatisfaction among the previous organization’s CNS group, the lack of staff and time to conduct the rounding, and the exodus of staff that had been required to

participate. The SA Team was informed of the objections that were raised and subsequently began to focus on other items to improve efficiencies among the SAs at the bedside.

As often times is the case in organizations, financial concerns will trump all theory on what process to put in place and how to best initiate a new process. In the fall of 2012, with minimal planning the CNS/APN group began rounding on all non-psychiatric patients. The CNS/APN group commenced the rounding which involved printing off the staffing office generated report with a list of patient names who had been assigned a safety assistant. Specifically, the list contained those patients that were admitted to medical surgical units and were not either on a suicidal or medical hold. These patients were excluded due to the legal considerations that required closer observation by SAs.

Initially the CNS/APN rounding included a focused chart review, a patient assessment, a discussion with the primary nurse or charge nurse, and a written recommendation for alternative interventions and complimentary modalities. Often, the CNS/APN group updated the safety plan. On occasion, the CNSs and APNs also attended multidisciplinary rounds and collaborated with social workers to keep case management plans updated.

The anticipated effectiveness of the CNS/APN rounding coupled with the sharp increase in the cost of the use of safety assistants spurred the immediacy of the decision to commence the rounding. The SA Team was notified of the rounding. However, this occurred after the CNS/APN group began rounding.

### **Evidence-Based Project Elements**

**Timeline.** The project discussion began in March of 2012 when this author joined the SA Team at the direction of the VP of Patient Care Services in the organization. This author continued as a member of that team through the end of SCP course work in December of 2013.

For purposes of determining whether or not the rounding of the CNSs and APNs reduced the cost of the use of SAs, a six-month window of time prior to the rounding and a six-month window of time after the initiation of rounding was used to calculate a return on investment.

**Site advisory.** Michael Cannon, MS, RN,NE-BC, Director of Nursing, agreed to oversee the author's participation as a member of the SA Team and provided a vehicle for paving the way to appointments, discussions, and information that was needed to complete the SCP. In addition to offering oversight of this author's SCP, Mr. Cannon also serves as the chairman of the SA team as well.

**Safety assistant team.** The SA Team represented the various interests from a variety of disciplines. Members of this collaborative team included SA representatives, RNs, Nurse Managers, Nurse Educators, CNSs, and Directors. Meetings were held once a month and the Safety Assistant Team Charter governed the work of the team. Agendas included a review of the number of SA hours in the previous month, initiation of projects for improving documentation, creation of better assessment tools for determining SA need, and to discuss role accountability of Managers, RNs and SAs.

**Return on investment.** The objective of the SCP was to reduce the cost involved in the use of safety assistants. However, initiating rounding by the CNS and APN group would also incur costs. Therefore, this factor needs to be considered in determining whether or not there was a financial gain that was realized at the end of the project.

The SA hours were tracked by the staffing office of the organization and the CNS and APN hours were self-reported and kept in the practice and education office. Both sets of hours were easily obtained from the respective office records. A cost benefit analysis was conducted on the initiation of the rounding process and the analysis sought to include the orientation time,

equipment and supply costs, daily rounding costs, meeting time costs and any costs associated the unintended consequences such as unfinished projects and staff turnover due to job dissatisfaction. The findings are discussed in the data analysis section of this manuscript.

**Ethical considerations.** The project plans were submitted to the Internal Review Board at St. Catherine University as well as the hospital. Since the project would only be using data that had already been collected for another purpose the data was considered secondary use. The secondary use of data along with the fact that there were no live subjects involved, contributed to the project was approved without further discussion or need to go before either of the internal review boards.

## **Chapter Four**

### **Data Analysis**

The staffing office supplied the actual number of SA shifts that were reimbursed for the months used in the project. Since one shift was equivalent to 8-hours, shifts were converted to hours for reporting purposes as well as determining a return on investment.

#### **SA Hours**

The total number of SA hours was first calculated for the months beginning in April 2012 through September 2012. This time frame represents the six months prior to the initiation of rounding by the CNS and APN staff. During the month of October, the CNS and APN group began rounding. The decision was made to omit the number of SA hours in the month of October for two reasons. The first reason was because this was a time of adjustment to the rounding process. The second reason had to do with the fact that there were two units being combined within the organization and it involved the transfer of patients to a new unit that opened in November of 2012. The total number of SA hours was then collected for the 6 months following



the rounding initiation month of October. The 6 months interval following the initiation of the rounding included November 2012 to April 2013. Further analysis of the hours shows that there was a decrease in the number of SA hours from the six months prior to the rounding to the six months following the initiation of the rounding. The difference equaled a reduction of 7,825 hours or approximately 15% fewer hours. (See Appendix B).

### **APN/CNS Hours**

The actual hours that were recorded for the rounding and record keeping of the APN and CNS group were obtained from the Director of Practice and Education. These hours were reported as a total for an 11 month period. In order to accurately compare the hours during the 6 months of the project, the 11 month total was divided by 11 to determine the average number of hours per month. This average was then multiplied by six to determine a 6 month time interval.

### **ROI**

For purposes of calculating the return on investment (ROI) the average wage for both the SAs as well as those of the CNSs and APNs were calculated. The cost of benefits was calculated at 20% of the wage and this amount was added to the base wage to arrive at a dollar amount that was then used for calculating a return on investment. This calculation resulted in the following average hourly wages; \$16.75 for a SA and \$66.00 for a CNS/APN. The actual costs were then calculated using the wage times the number of hours recorded. The first step in calculating the overall ROI was determined by subtracting the cost of SA use 6 months after the initiation of the rounding from the cost of the use of SAs the 6 months prior to the rounding to determine the difference. This resulted in a reduction 7825 hours or a cost of \$131,065 and is a realized benefit of 15% over the total cost of SA use prior to the rounding. To complete the ROI calculation, the following equation was used;  $ROI = (\text{Total Cost of reduced SA hours} - \text{Cost of supplying}$

CNS/APNs) / Cost of supplying CNSs/APNs \* 100. The final figure suggests 2735% return on investment for the 6 months that were used for the evaluation of the project. It is worth noting at this point that the savings that have resulted from the initiation of the CNS and APN rounding are ongoing and the startup costs that were incurred by the CNSs and APNS were a one time occurrence. The more developed the rounding process becomes, the expense of rounding is minimized. (See Appendix C).

### **Project Evaluation**

#### **Structure**

John Kotter's Change Theory (Kotter, 2012) was used as a framework to evaluate the structure of this SCP. Stage one is to establish a sense of urgency. This stage was established in 2012 when the Vice President of Patient Care Service communicated that there was a significant increase in the spending for SAs, and that the Board of Directors and the Senior Leadership Team, saw the "reduction in spending as a priority for the organization" (Irle, 2012c, p. 3). Stage two requires a guiding coalition and this is represented by the SA Team being charged with exploring means to reduce the overall cost of SA use. Stage three identifies that there be the development of a vision and strategy. The vision and strategy were developed by the SA team and adopted in the SA Team Charter. Stage four which is communicating the change vision, was not so easily accomplished. The SA team was provided with a review of the literature and it was at this point that the group identified that the best evidence presented involved rounding by nurses with advanced practice degrees. For this organization it translated to have the CNSs and APNs initiate rounding on those patients who required a SA at the bedside. Since the CNS and APN group had not been part of the SA team meetings, this author agreed to set up a meeting with the Director of Practice and Education who the CNS/APN group reported to for the purpose

of conveying the vision. During the meeting, The Director of Practice and Education shared personal experiences from a previous facility that had used a similar model and expressed concerns for the success of initiating such a process in the organization. The concerns included; “...the time involved in rounding, the inability to focus on other projects necessary to the organization, the lack of support, and general dissatisfaction among CNSs as a whole. As a result, the CNS rounding model had not been sustainable and had since been dropped in the previous hospital” (Irle, 2012c, p. 4).

As a result of the concerns, the Director was not able to support the vision that the SA team had adopted. Since the support of the Director was critical to moving the project forward, Stage four of Kotter’s theory was not realized and the SA Team reconvened to explore other options that might reduce the cost of the use of SAs. The SA Team lost momentum at this point and spent several months brainstorming smaller tasks that would possibly improve efficiency in the current use of SAs. Stage five of Kotter’s Theory is empowering employees for broad-based action. Without the support needed to initiate rounding by the APNs and the CNSs, there was little that the SA Team could do. Thus, stage five was not achieved either. Later in the year the Vice President of Patient Care Services became aware of the SA Team’s challenges and intervened. At this point, the Director of Education and Practice initiated the CNS/APN rounding that SA Team had recommended. Since the SA Team and this author were not notified of the new plan to initiate the rounding, the opportunity for project planning by the team was missed.

Generating short-term wins is stage six of Kotter’s change theory. It could be said that since the rounding did occur, that there was a win. However, Kotter (2012) writes,

A good short-term win has at least three characteristics:

1. It's visible; large numbers of people can see for themselves whether the result is real or just hype.
2. It's unambiguous; there can be little argument over the call.
3. It's clearly related to the change effort. (Kotter, 2012, p. 126)

Concluding that there was a short-term win becomes vague when set up against these criteria.

While the initiation of the rounding may have been visible, little time was spent in defining or explaining the process of rounding to all the hospital unit staff, what would be expected of those involved, and what and how the outcomes would be measured. In fact, rounding was met with apprehension and distrust rather than welcomed collaboration. Stage seven and stage eight are consolidating gains and producing more change; and anchoring new approaches in the culture. Without having acquired success with level six, stages seven and eight were unachievable. (Irlle, 2012c).

### **Process**

If the commencement of rounding by the CNS and APNs had been allowed as initially planned, it would have been appropriate to apply Rodger's Diffusion of Innovation (Rogers, 2003) as a road map to securing adoption of the rounding process. In the diffusion of an innovation, Rodger's assesses prior conditions, and then determines the appropriate communication channels. Included in the channels are five steps; knowledge, persuasion, decision, implementation and confirmation.

Using this roadmap, one could have taken the identified concerns that were expressed by the Director of the CNS and APNs during the initial phase of the SCP and worked at garnering more support through the identification of specific measures that needed to be taken. The sense of urgency that had been established from the organization's Board of Directors and Senior Leadership Team could have offered a platform for persuasion. It would have been possible to start this project with a small test of change involving one unit in the hospital and only one CNS

or APN and connecting with individuals who would be identified as what Rogers calls innovators or those who display "venturesomeness [to] almost an obsession..." (Rogers, 2003, p. 282). Once the innovators were on board it would have been highly probable that early adopters could have been identified within the organization. The early adopters would have made up one or two units with the organization who would have been open to implementing this change on their units. If there are the short-term wins that Kotter refers to in the eight stages of change, then those who Roger's refers to as the early majority would have been convinced that the rounding practices were advantageous. It is at this point that rounding by the CNSs and APNs would have captured the 50% of those who need to be on board with the change. Once there is success in a small test of change, then it is time to identify and work with the "late majority" and the "laggards" or those who only follow once everyone else is adopting the change and those who are last and who are usually never convinced.

With a small test of change, the advantages and disadvantages of the CNS and APN rounding could be evaluated and it would be at this point in Roger's diffusion of innovation that a decision could be made on whether or not to continue with the rounding process. If the decision to adopt the rounding was made, it could be expanded to and implemented on more units within the organization. Further evaluation of the rounding at periodic intervals could confirm the effectiveness of the process in achieving the cost reduction needed.

### **Outcome**

Although the rounding by the APNs and CNSs launched without significant application of either Kotter's Change Management Theory or with the benefit of Roger's Diffusion of Innovation as a roadmap, the practice is still in place at the time this author is writing. Monthly monitoring of the number of SA hours has trended downward since the initiation of the rounding.

As a result of fewer SA hours being needed, the cost of providing the SAs within the organization has decreased and the return on investment has been realized.

## **Chapter Five**

### **Discussion of Findings and Outcomes**

In the current healthcare environment, the financial accountability is only one piece of a much larger picture. This larger picture includes the considerations of the ANA Code of Ethics, the IHI triple aim, and the mission and goals of the organization which provide a platform for this SCP.

Rounding by CNSs and APNs provided an opportunity to fulfill the ethical duty of providing safe care, an opportunity to provide quality care resulting in an increase in the health and wellbeing of those being cared for, and an opportunity to deliver quality care to the community that the organization serves. However, these opportunities were not measured and no conclusion can be drawn from the project's effectiveness in these areas. The focus of this SCP was to simply reduce the cost of SAs and that was accomplished by measuring the change in hours that were produced after the rounding of the CNSs and APNS began. While simply reducing the cost of SAs was the outcome desired, calculating a return on investment offers more information than just the cost savings for the organization such as; the improvement in productivity, enhanced quality and any savings in time (Phillips, 1997, p. 1).

The calculation of a ROI can be fraught with challenges and this was not an exception for this SCP. Phillips suggests, "For an ROI process to be useful, it must balance many issues such as, feasibility, simplicity, credibility, and soundness. More specifically, three major audiences must be pleased with a specific ROI process to accept and use it ...practitioners; senior managers, sponsors, and clients; and researchers" (Phillips, 1997, p. 2).

Since there was an accurate recording of the SA hours by the staffing office, it was plausible to conclude that the equation used to determine the cost of the SAs had some degree of accuracy. Capturing all the costs that may have been involved in the initiation of the rounding by the CNSs and APNs was not as easy. Any planning that may have gone into the initiation of the rounding did not involve the SA team and records of the planning process by CNS and APN staff were not available. Thus, it was impossible to estimate with any degree of accuracy the cost of the planning phase. The number of hours that involved the actual rounding and record keeping were supplied by the Director of Practice and Education and were self-reported from CNSs and APNs. These hours were reported as a total over an 11 month period. In order to calculate the ROI, an average of hours per month was calculated. Had there been a report that allowed the actual hours of rounding during the six month project window, the return on investment could have been more accurately calculated.

Another challenge in determining the actual cost of the rounding was the lack of clear evidence that there were any unintended consequences as a result of the initiation of the rounding. These unintended consequences could have included: projects that went unfinished resulting in a loss of productivity, employee absenteeism or resignation due to dissatisfaction, or overtime resulting for the added duties of the rounding process. Because data on unintended consequences were not collected, there are no dollar amounts assigned in the ROI spreadsheet.

While the initial findings might lead one to conclude that simply the act of rounding can result in a reduction in the cost of safety assistants, it is inconclusive as to whether or not the reduction in the use of SAs is due a Hawthorne effect or can be attributed to the CNSs and APNs actually providing patient evaluation, providing a nursing plan of care, or the result of the interaction with other nurses, care providers, and SAs.

Challenges of determining ROI accuracy stem from the inability to have tight controls on the project roll out. Adherence to a more formal project planning regime may have resulted in a greater number of hours in the project planning phase and ultimately additional project cost. In addition, a more formal project roll out has the potential to mitigate any unintended consequences which could negatively impact the cost of the project. Yet, a 2735% return on the investment suggests that there is capacity for a significant increase in project costs while still netting a positive return on investment.

### **Conclusions**

A reduction in the cost of the use of SAs resulted from the initiation of the CNS and APN rounding in this organization. There is a wide margin, 2735%, positive return on the invested cost that resulted in an actual reduction in the number of hours of SA use. The reduced SA hours translated into an overall reduction in the cost of the use of safety assistants. No conclusion can be drawn regarding which actions of the CNS and APN rounding process were considered to be most advantageous or would result in sustained reduction in the cost of the use of SAs.

### **Recommendations**

In today's healthcare environment it is important for providers and administrators to not only understand that there is an economic return on the investment made in the rounding process: it is also important to know which actions of the CNS and APN rounding process result in better quality outcomes, increased patient satisfaction and still garnered a return on the investment.

### **Research**

Further research on the rounding process by the CNSs and APNs has the potential to impact the delivery of nursing care and to create a therapeutic healing environment. This research should be supported from the highest levels of the administration and throughout the



organization. This support should be represented by a collaborative and collegial initiative as well as a formal project design with financial sponsorship. The complexity of the rounding process offers many opportunities to examine closer the effects of interventions such as: what is it that is specifically sought and identified in a patient chart review and patient assessment by the CNS or APN; are collaborative relationships essential to the success of the rounding process and how are those collaborative relationships built and sustained: what written recommendations for alternative interventions and complimentary modalities resulted in the most advantageous patient outcomes: and what are the elements of a successful safety plan? Another parameter to be studied is what is the thought process of the CNS and is it transferable to other nurses?

### **Administration**

The future holds many questions for the economic success of organizations involved in the healthcare of the population. The ability to deliver cost effective care is inherently linked to providing quality care. The human resources that are required to effectively deliver quality care should be supplying their expertise at the top of their education, licensing, and ability in a collaborative arrangement, towards the common goals of any quality and safety program. The CNS role has effectively delivered an economic outcome however, with more consideration for the potential of the expertise and skill of those in this pivotal role, further gains await the populations served.

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Appendix A

**TEAM CHARTER**

**SAFETY ASSISTANT USE**

<b>Project Name:</b> Safety Assistant Use Project Team	
<b>Start Date:</b> April 1, 2012	<b>Anticipated end date:</b> September 1, 2012
<b>Executive Sponsor:</b> VP of Patient Care Services	
<b>Team Leaders:</b> Director	
<b>Project Manager/Facilitator:</b>	
<b>Team members:</b> Directors, Managers, Education Specialists, Safety Assistants, RNs	
<b>Ad Hoc Members:</b> Sue Irlle, MSN, RN, DNP Student, St Catherine University	
<b>Team Purpose:</b> To investigate, evaluate, and assess utilization of Safety Assistants in a cost effective way that maintains a safe patient care environment.	
<b>Team Responsibilities:</b> <ul style="list-style-type: none"> <li>• To identify and recruit stakeholders from all levels as appropriate for each project</li> <li>• To clearly define and articulate outcome goals for the team</li> <li>• To gather and evaluate evidence-based practice data on the use of safety assistants in the hospital setting.</li> <li>• To formulate and implement small tests of change using an evidence-based practice solutions.</li> <li>• To evaluate results and make recommendations for revisions to current policies and procedures.</li> </ul>	



**Anticipated Outcome:**

- Recommendation for updates to the Safety Assistant Use In Non-Behavioral Health Units policy (RH-PC-PC-12-20) that will result in a lowered use of safety assistants while providing a safe care and therapeutic (or healing) environment
- Cost effective use of Safety Assistants
- A safe patient care environment will be maintained as evidenced by a decrease in the number of falls and elopements
- Staff will be competent in maintaining a safe and therapeutic (or healing) environment

**Special considerations or issues involved:**

- Ability to maintain competency of safety assistants
- Adequate education budget to fund orientation/class for safety assistants
- Performance issues with current safety assistants
- Others as identified by the team

**Team Authority:**

- Make recommended policy changes to the Patient Care Committee
- Monitor pilot programs on in-patient units
- Direct process change within nursing divisions

**Reporting Accountability:**

- Patient Care Committee
- Senior Leadership Team via VP of Patient Care Services

**Measures of Success:**

- Reduced Safety Assistant FTE's or number of shifts
- Elimination of sentinel events reflecting the failure to maintain a safe care environment (when a safety assistant is present)
- Maintenance of current rate or a lowered falls rate.
- Other outcomes specific to other goals identified by the team

**Team Meeting Logistics:**

- Monthly over the next 4 months

Appendix B

t	Number of SA hours per month							Total Hours	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13
	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12								
								Not counted						
	872	790	980	904	368	366	4280		0	0	0	0	0	0
	318	528	568	574	266	918	3172	408.5	0	0	0	0	0	0
	74	346	138	70	16	26	670	56.25	257	174.75	38.75	155.5	487	
	540	544	414	544	502	404	2948	585.75	354	261.25	421	284.5	337.25	
	514	634	420	1378	478	676	4100	625.75	1047.8	438.75	606	592.25	348	
	352	1328	864	854	562	1722	5682	264.5	255	378.75	465.25	1164.8	373.5	
	752	1214	782	920	836	1390	5894	1634.5	1554.8	1142	735	837	1256.8	
	0	0	0	0	0	0	0	0	1211.3	764	524.5	821.75	560.25	
	1038	1278	1486	1434	1104	1782	8122	1657.25	1425.5	1187.8	1463	582.75	1130	
	732	1050	1564	1066	816	1168	6396	1475.25	880.5	1432.5	1329.5	1055.3	826.5	
	888	760	892	1048	1000	1206	5794	726.75	847.5	779.75	483	569.25	1170.3	
	358	824	672	334	1708	352	4248	345.5	421	378.25	614.25	429.25	687	
	488	196	544	412	272	562	2474	423	212.25	104.25	596.25	264.5	468.5	
					Total Hours Before		53780						Total Hours After	
													Net Difference	
													% of change	

Appendix C

Return on Investment Grid

<b>Excel Spreadsheet</b>	<b>Wages* plus Benefits (hourly rate X 1.20)</b>	<b>The number of units or individuals involved</b>	<b>Number of Hours, Days, or Months</b>	<b>Length</b>	<b>Sub-total</b>	<b>Total</b>
<b><u>Implementation of APN Staff</u></b>						
<b><u>Planning Phase</u></b>						
<b>Department Director</b>	\$ 68.40		0.00	1	\$ -	
<b>CNS/APN staff</b>	\$ 66.00		0.00	1	\$ -	
<b>Total</b>					\$ -	\$ -
<b><u>Implementation of Participating Units</u></b>						
<b>CNS Director</b>	\$ 68.40	\$ -	0.00	\$ -	\$ -	
<b>Nurse Managers</b>	\$ 64.50	\$ -	0.00	\$ -	\$ -	
<b>RNs/Charge</b>	\$ 49.00		0.00		\$ -	
<b>Safety Assistant</b>					\$ -	
<b>Support staff</b>					\$ -	
<b>Total</b>					\$ -	\$ -

<u>Month Project Cost</u>	average per month			Average cost for six months		
<b>CNS/APN Director</b>	\$ 68.40					\$ -
<b>CNS/APN Hours</b>	\$ 66.00	\$ 1.00	55.50	6	\$ 333.00	
<b>Staffing Office Record Keeping over six months</b>	\$ 66.00	\$ 1.00	0.50	130	\$ 4,290.00	
<b>Total</b>						\$ 4,620.00

Equipment and Supplies none reported

**Total Cost** \$ - 0.00 \$ - \$ - \$

**Unintended consequences due to re-focusing of CNS/APN hours** unable to determine

**Total Cost** \$ - 0.00 \$ - \$ - \$

Grand Total of Costs \$ 4,620.00

<u>Benefit Analysis (Hours SA use Prior to Rounding)</u>	<u>Wages* plus Benefits (hourly rate X 1.20)</u>	<u>Number of reported Hours (Apr '12 - Sept '12)</u>	<u>Sub-total</u>	<u>Total</u>
Safety Assistants Cost for the length of the project	\$ 16.75	53780	\$ 900,815.00	
Staffing Office time incurred finding additional staffing	none			
<b>Total</b>				\$ 900,815.00
<u>Benefit Analysis (Hours SA use After Rounding)</u>	<u>Wages* plus Benefits (hourly rate X 1.20)</u>	<u>Number of reported Hours After (Nov '12 - Apr'13)</u>	<u>Sub-total</u>	<u>Total</u>
Safety Assistants Cost for the length of the project	\$ 16.75	45955.25	\$ 769,750.44	
Staffing Office time incurred finding additional staffing			\$ -	
<b>Total</b>				\$ 769,750.44
<b>Net Benefit(The difference in the cost of providing a SA from before the rounding to after the rounding)</b>				\$ 131,064.56

Calculation of ROI	Total Reduction of SA costs	minus Cost of Supplying CNS/APNs	equals	Divided by the cost of supplying CNS/APNs	Equals	%
	\$ 131,064.56	\$ 4,623.00	126441.56	\$ 4,623.00	\$ 27.35	273

\*Wages are represented by an organizational average I each level